Research Report

General Assembly 3

Ensuring Access to Clean Water and Sanitation

Zoya Frumau

Head Chair

Introduction

Water is at the core of life on earth, and human development. It is responsible for the thriving of biological life and human induced industries. It is critical for not only environmental development but socio-economic development. However water security and quality is currently at risk. As the global population grows there is an increasing need to prioritize water and its safe use. Not only population growth but as urbanization, the poverty gap and capitalism increase, the pressure on water security heightens. Due to the multiple aspects putting pressure on the global water system, tackling the issue of water security and sanitation as a whole is a challenge in itself to address.

Access to clean safe water and sanitation is a fundamental human right to ensure human health, wellbeing and dignity. Although being considered a human right by the United Nations (UN) , safe water and sanitation are still inaccessible by a vast number of the population. In 2022 2.2 billion people still lack access to clean drinking waters, while 3.5 billion lack access to safely managed sanitation services (United Nations, 2024). These gaps disproportionally affect populations in especially developing regions, rural areas and marginalized communities. As a result intensifying poverty and inequality within these areas, keeping instate an inequality and health/safety gap (United Nations, 2024). Hence this issue discussed is crucial as water scarcity, poor water quality and lack of adequate sanitation are significant health threats, hinder economic growth, environmental stability and overall social stability.

Multiple parties, ranging from NGO's to national governments have been attempting to tackle this issue especially focusing on water quality to prevent the spread of waterborne diseases, and to ensure the accessibility to water sources. However besides taking action from a prevention, mitigation and adaptation point of view it is of importance to also hold major contributors to

water scarcity and pollution accountable for their impacts. Holding them accountable for their environmental and social repercussions. Not all actions undertaken have been majorly successful, hence further action must be considered to holistically approach the issue to demand change for those struggling in water poor areas.

Figure 1: Congolese woman, making use of provided drinking source (United Nations, 2024)

Definitions of Key Terms

Any issue has certain words that arise often. Note down and explain these words in a way that experienced, and beginner delegates will both be able to comprehend.

Embedded Water: includes all the water used to produce the produce and can be considered 'hidden water'(*Glossary of Water Terms.* 2023).

NEXUS approach: "The Water-Energy-Food-Ecosystem Nexus (WEFE Nexus) approach highlights the interdependence of water, energy and food security and ecosystems – water, soil, and land – that underpin that security." (*Water-Energy-Food-Ecosystem Nexus - European Commission.*).

Desalination: the removal of salt from seawater.

Water Borne Diseases: diseases that are transmitted through flows of water, and especially ingestion of water. Some examples are cholera, diarrhea, dysentery, hepatitis A, typhoid and polio.

WASH: stands for Water Sanitation and Hygiene, and is used as a structure to help encourage water cleanliness (The World Bank Group, 2020).

Contamination (of water): the reduction or loss of water quality due to " microorganisms, chemicals, sewage or industrial waste which renders water unfit for its intended use." , most frequently posing health risks (*Glossary of Water Terms.* 2023).

Greywater: wastewater generated from domestic activities (ex. Bathing, laundry, dishwashing). Requires treatment before being used safely or returned to the environment (*Glossary of Water Terms.* 2023).

Blackwater: Wastewater that contains human waste. Requires severe extensive treatment before it can be safely reused. This water is significantly more contaminated than greywater, and poses health risks if left untreated (*Glossary of Water Terms.* 2023).

Blue Economy: An economic concept focused on the sustainable use of existing water resources for economic growth, improving ecosystem health and improving human livelihoods (*Glossary of Water Terms.* 2023).

Aquifers: underground layer of water-bearing rock/sediment that stores and transmits groundwater. These are often used as water sources for industrial and domestic use. Aka Underground water basins (*Glossary of Water Terms.* 2023).

Groundwater: water that has seeped beneath the earth's surface into the soil (*Glossary of Water Terms.* 2023).

Depletion: the reduction of or harvesting of, hence making quality or amount running low of a resource (in this case water).

Sludge: water in which solid by-product is found, often in the form of accumulated sewage treatment plants (*Glossary of Water Terms.* 2023).

For other useful terms that can be used and discussed in debate: find the glossary site in the extra readings.

General overview

As mentioned in the introduction, access to clean water and sanitation services are essential for the health, development and the preservation of life of humans and the environment. Water security has always been a sign of good public health and community well-being (World Vision Australia, 2024) . Historically, civilizations developed water infrastructure for sewage channels and transport systems, Egypt and Rome being some of the more recognized. As populations grew, clean water access was highlighted to be more difficult to achieve, often leading to outbreaks of waterborne diseases such as cholera and dysentery. These types of outbreaks and lack of infrastructure still occur in less developed nations but overall globally these ancient civilizations have shaped the water system present today.

In the 19th and 20th century the development in the industrial revolution caused an exponential urbanization of civilizations. This urbanization called for a more structured and thorough water and sanitation system (World Vision Australia, 2024). Governments and communities started to implement measures to improve water quality and sanitation. Examples of these measures include, the London Sanitation Reform of the 1850's: instating an investment in an elaborate plan to update and improve the sewage system, following cholera outbreaks. This became a model system for many more major industrialized cities (*UN 2023 Water Conference.* 2023). Furthermore in 1977 the UN world health embassy, finally declared the right to water and sanitation as a human right, essential for human health

as a result turning an international focus towards the issues (*UN 2023 Water Conference.* 2023).

Today as billions of people are affected by a persistent lack of water and sanitation, there is a global crisis in the health, economic and environmental sectors. Several factors contribute to the current state of the crisis. 3 of which are mentioned down below:

Firstly the more recent added pressure is climate change and environmental pollution. Increased temperatures and unpredictable weather patterns such as longer droughts, floods and extreme precipitations. Overall causing unpredictable water availability, especially in more vulnerable and rural areas, as well as infrastructure damage. Furthermore pollution from industrial waste, agricultural runoff and untreated sewage waters threaten the safety of water quality, impacting human health as well as biodiversity health. An example of where climate change has caused a threat to water quality and availability is the Aral Sea in central Asia. It has almost dried up entirely due to intensive agriculture and high evaporation rates as a result of increasing temperatures (Milko, 2024). As a result causing severe water shortages, habitat loss and health impacts on nearby communities. The reduction of water level in the sea also contributes to dust storms in the area that are responsible for carrying toxic substances. As climate change continues, it is expected by the end of the decade to run dry(Milko, 2024).

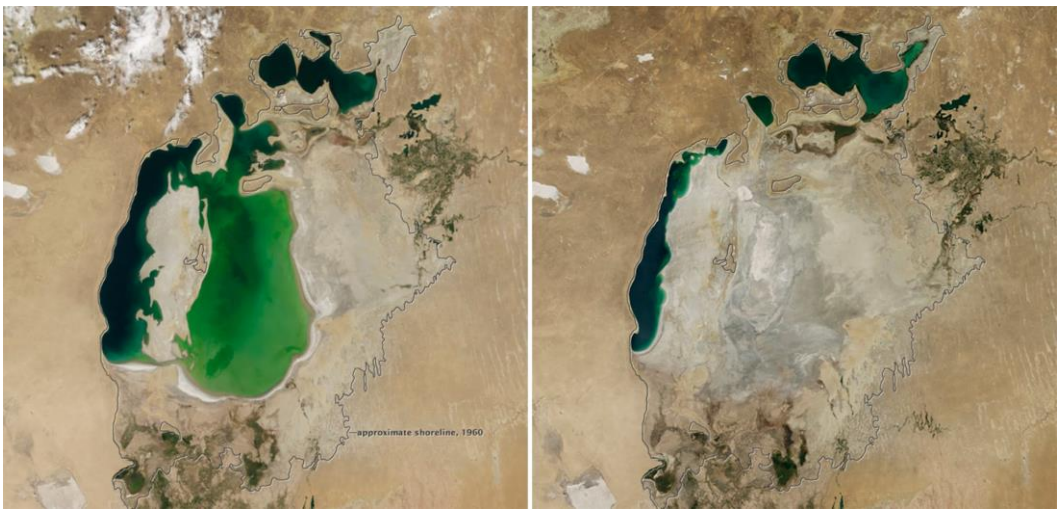

Figure 2: Aral Sea 1960 (left) compared to 2014 (right) (NASA Earth Observatory).

Furthermore the lack of infrastructure in both rural and urban areas can result in the spread of waterborne diseases, and cause a disparity in water availability. Especially in rapidly urbanizing locations in low income countries the lack of infrastructure is most challenging. While in informal settlements and urban slums, often with highly dense populations, there is the lack of a basic piped water system and basic sanitation. This increases what is called a sanitation gap where the access to basic sanitation is largely inadequate according to wHO standards. An example of where this is occurring is the slums of Mumbai, India. In these slums 200-250 people share one water source, currently having access to less than 20 liters of water per person per day, which is far “below the minimum consumption level recommended by the WHO for basic hygiene especially for women and children” (Subbaraman & Murthy, 2015) . This shared water system, especially during summer seasons, where water scarcity

increases there is a seasonal E-coli outbreak which indicates fecal contamination, especially affecting the health of kids, pregnant and elderly populations (Subbaraman & Murthy, 2015). Meanwhile a change in ruling in december 2014 has asked to extend water supplies to the slubs in Mumbai, which has put a step forward in improving health situations, however not as much accessibility (Subbaraman & Murthy, 2015).

Lastly the increase in water usage world wide, causing the depletion of water sources. Approximately 2.4 billion people experienced living in water-stressed countries in 2020 (United Nations, 2024)). Especially in already water scarce regions such the Middle East, parts of North Africa and South Asia, the depletion can be more catastrophic having to innovate to be able to reach new water sources. Meanwhile climate change intensifies water scarcity as mentioned earlier. In addition to this water heavy industries such as agriculture, textile and electronic industries, abuse water supplies and take no responsibility for their effects on water depletion and the health of water systems (United Nations, 2024). Each industry has their own negative impacts, ranging from major water use to toxifying water systems making them undrinkable. For example, Cape Town, South Africa, has been experiencing major droughts from agricultural exploitation of water sources as well as climate change. In 2018 this caused the city to approach " Day Zero" , where water supplies were shut off for most urban residents to ensure some water supply was left and not run dry (Heggie, 2020). In 2019 the water in the dams ran 10-60% lower than 2018, causing another scare to Cape Town. Although the crisis was temporarily reverted it highlighted the urgency of addressing the future of water scarcity (Heggie, 2020).

Figure 3: Dry cracked soil at the time of Day Zero in South Africa (Brent Stiron, 2018)

This issue of water scarcity and sanitation is vastly complex, varying on a global scale with many major parties playing a role in the state and solutions to the issue. Overall there is an increasing water scarcity and quality crisis and if not tackled soon, the pressures currently placed on the system will overtake and cause the degradation of the whole water system. Therefore action must be undertaken now.

Major parties involved

There are a lot of different parties that play a role in water security and water sanitation. Some of which have a negative effect such as the agricultural industry and fashion industry,

however there are major parties that try to initiate a positive impact to solve/mitigate the current state of water security and water sanitation. Down below are a few examples of positively contributing parties:

World health Organization (WHO)

WHO develops health standards and provides guidance and support in managing water quality and sanitation (*UN Water - United Nations.* 2023). Most predominantly to prevent the spread of epidemic or endemic water borne diseases. They have provided guidelines for Quality Drinking water to set international standards to aim for, and have developed water treatment technologies to ensure safe water treatment in low-resource locations, and where the development and framework is needed (*UN Water - United Nations.* 2023). Setting these standards and providing technical services, WHO help ensure safe drinking water to become a human right, while reducing health risks associated with contaminated waters.

WaterAid

WaterAid is an non-profit organization focused on water in the terms of sanitation and hygiene, catering for mostly developing nations and poorer communities (*Wateraid - What we do.* 2023). They provide community-driven projects, especially education and policy recommendations on the topic of hygiene practices. In the past the organization has provided sanitation facilities to countries like Ethiopia, Bangladesh and Uganda, using community building and community centered approaches with a view on long term social and water sustainability (*Wateraid - What we do.* 2023) .

UN Water

UN Water consists and brings together over 30 UN agencies attempting to reach unified efforts on water sanitation issues(*New guidance for developing inclusive health infrastructure.* 2024). They aim to promote cohesive policies and global action, and initiatives to increase efforts towards SDG 6. Alongside this, UN-Water keeps up Data and monitoring initiates, to collect crucial data to track progress on water and sanitation goals. They collaborate with NGOs, private sectors and regional organizations to advance and find expertise in solutions for specific regions or needs(*New guidance for developing inclusive health infrastructure.* 2024).

National and Continental Organizations and Governments

Overall there is a large variety of different national and international organizations with specific niches to tackle water security catered to the local/regional needs. Due to the specific catered needs often these organizations and governments are more targeted towards a smaller more current or crisis related water issue.

Other possible parties to look into can be: specific national governments, Global Water Partnership, EU, Red Cross, World Bank, Sanitation and Water for All (SWA) … and many more.

Timeline of Key Events

Down below is a timeline presenting major key events in relation to the Global Water Crisis and its development over time.

1700's-1800's : Industrialisation as a result of the industrial revolution(s), draws attention to the need of clean water and sanitation methods (World Vision Australia, 2024), while water streams and domestic water sources get polluted by toxic factory chemicals and gasses.

1977: United Nations Water conference was held in Argentina. First major international conference focused on water issues (*UN 2023 Water Conference.* 2023).

1992: Agenda 21 (Earth Summit, Rio de Janeiro): focused on the promotion of sustainable development as a whole, including a focus on Integrated Water Resources Management (IWRM) (UNEP, 2024).

1993: UN General assembly assigns 22nd March as World Water Day (World Vision Australia, 2024).

2000: The UN Millenium Development Goals (MDGs) , target to increase accessibility to save drinking water (World Vision Australia, 2024).

2006: UN Human Rights Council Resolution on Water and Sanitation: The resolution addressed safe access to drink water and sanitation to be a fundamental human right, to set up the bath for further delcations to be made in the future.

2010: 5 years ahead of schedule the MDG's access to clean water goals were met. "2 billion people have gained access to safe drinking water since 1990". Hence the UN GA recognizes that the access to safe domestic water to be a human right (World Vision Australia, 2024).

2015: Adoption of the United Nations Development goals (SDGs) occurred, including Goal 6 which includes focus on clean water and sanitation for all (World Vision Australia, 2024).

2020: Covid 19 caused an increase in WASH efforts, where the pandemic heightened the need and the importance of water and sanitation. In the state of emergency, efforts were encouraged to increase these services world wide (The World Bank Group, 2020).

2023: UN water conference (New York, USA), was the first major UN water conference since 1977, attempting to accelerate the progress on water goals, from a NEXUS approach, trying to reinforce SDG 6 (*UN 2023 Water Conference.* 2023).

Previous attempts to solve the issue

There are multiple various attempts to solve the issue at hand. However as the topic of water finds itself in almost every sector of anthropogenic and global processes, it is extremely difficult to find singular solutions to tackle water sanitation and availability. However some previous attempts to solve the issue are listed below:

The Human Right to Water and Sanitation Resolution (2010)

Resolution number 64/292 of the UN GA, states that it is a human right to water and sanitation, while acknowledging clean domestic water and sanitation are essential human rights. The resolution encourages nations and organizations to provide financial resources, for technological and framework development specifically to provide to developing countries where the water scarcity and sanitation issues are more prevalent. Standards were set as aims

for acceptable quality, sufficient amounts, biologically safe, accessible and affordable water criteria. (United Nations, 2011)
(A link is provided in the extra reading to view the research report)

The USA Clean water Act (1972)

This act was instituted to encourage development in public and environmental health. "The CWA is a bedrock environmental law that aims to end water pollution in the United States by regulating pollutants and setting standards for water quality" (Hu, 2024). Amended in 1977, 1981,1987 and 2014, lawmakers passed and added several legislations to the act. The act works with the US. Environmental Protection agency, to reduce or eliminate pollution from waters(Hu, 2024). The act requires measurable water quality standards to be met, to ensure water bodies can be given and provided designated uses such as: protection and growing of fish and wildlife, recreation, as a drinking water supply, agriculture, industrial or other purposes (Hu, 2024).

The African Rural Water supply and Sanitation Initiative - RWSSI

RWSSI's overall objective is to speed up the accessibility to "drinking water supply and sanitation in rural africa in [order to reach] the SDGs and the African Water Vision targets" (Hu, 2024). This is a funded Initiative, funded by partner countries (mostly European) and international organizations. Funds are used as a "catalyst" to reach the sustainability requirements for rural water supplies and sanitation processes. The focus is on enhancing the infrastructure in more fragile states, especially setting sanitation policies and project preparation to increase these rurals areas' capacity to be self-sufficient (Hu, 2024).

Possible solutions

Solutions regarding the issue can be taken from mainly 3 different perspectives: water management, retaining water availability and water cleanliness, Down below a few suggestions are given on possible solutions to incorporate within resolution writing. Take in mind when creating resolutions to be targeted within the solutions:

Infrastructure Development:

Expanding and maintaining water and sanitation infrastructure in especially under developed regions, possibly aided by more developed nations and organizations. With a focus placed on affordable, adaptable technologies suitable for different regions of the world. Examples of these could be: rainwater harvesting, desalination, new water sanitation processes etc.

Policy Reform and Financial Support:

Encouraging governments to prioritize water and sanitation in the national budget providing subsidies or incentives for investments and actions taken in water infrastructure and responsible water use. Can be encouraged from a Health perspective or a water scarcity perspective.

Education and Community Engagement:

Setting up training programs to educate local communities in water management and hygiene practices; catered to their living environment, has the ability to empower women and the under-educated. The use of the knowledge can enhance community ownership and sustainability, especially SDG 6.

Innovation in Water management systems and strategies:

Implementing innovative technologies, such as wastewater recycling and filtering, desalination and effective irrigation systems to ensure water availability if clean natural resources are scarce. Targeting the most water heavy consuming industries (such as Textile, Agricultural and technological) and sectors to reduce their water usage, and water filtering systems to 'leave' more for domestic use and consumption.

Climate Adaptation Measures:

Preparation of water and sanitation infrastructure to withstand climate impacts such as droughts or floods. Investment must be done to create resiliency in these systems, and to have an emergency response mechanism should a climate catastrophe occur.

Encouraging a NEXUS approach in local governments:

The use of the NEXUS approach can increase policy and government effectiveness on all sectors of water usage within a country or area. Focusing on one area of the NEXUS can tackle all areas of water security and cleanliness. (read more about the NEXUS approach in the further readings if interested)

Further Readings

Glossary of water related words:
https://www.valleywater.org/learning-center/glossary-water-terms

NEXUS approach: https://international-partnerships.ec.europa.eu/policies/climate-environment-and-energy/water-energy-food-ecosystem-nexus_en#:~:text=cooperation%20across%20borders.-,The%20Nexus%20approach,land%20%E2%80%93%20that%20underpin%20that%20security.

The Human Right to Water and Sanitation Resolution:
https://documents.un.org/doc/undoc/gen/n09/479/35/pdf/n0947935.pdf

https://www.un.org/waterforlifedecade/human_right_to_water.shtml#:~:text=The%20human%20right%20to%20water%20and%20sanitation&text=On%2028%20July%202010%2C%20through,realisation%20of%20all%20human%20rights.

Water Aid : https://www.wateraid.org/uk/

UN- Water: https://www.unwater.org/

WWF on water scarcity: https://www.worldwildlife.org/threats/water-scarcity

Top 25 water stressed countries: https://www.wri.org/insights/highest-water-stressed-countries

SDG 6: https://sdgs.un.org/goals/goal6
https://unstats.un.org/sdgs/report/2023/goal-06/

Water Quality Association: https://wqa.org/

Water at the center of the climate crisis and possible solutions: https://www.un.org/en/climatechange/science/climate-issues/water?gad_source=1&gclid=Cj0KCQiA_qG5BhDTARIsAA0UHSKPd94h3WuTXCfQSaMXDR0aZ7QKJX34SxW4hANHJd3fRQgmS0QuH_UaAh8hEALw_wcB

Feel free to read any of sources in the bibliography down below.

Bibliography

Glossary of Water Terms. (2023, Valley Water. https://www.valleywater.org/learning-center/glossary-water-terms

Heggie, J. (2020, *Day Zero: Where next?* National Geographic. https://www-nationalgeographic-com.translate.goog/science/article/partner-content-south-africa-danger-of-running-out-of-water?_x_tr_sl=en&_x_tr_tl=nl&_x_tr_hl=nl&_x_tr_pto=sc

Hu, S. (2024, -08-14). *The Clean Water Act 101*. NRDC. https://www.nrdc.org/stories/clean-water-act-101

Milko, V. (2024, February 8). *Climate change is fueling the disappearance of the Aral Sea. It's taking residents' livelihoods, too.* AP news. Retrieved Nov 4, 2024, from https://apnews.com/article/kazakhstan-uzbekistan-aral-sea-drying-climate-change-cb565954d5bd2ef72c02a1db8231800d

New guidance for developing inclusive health infrastructure. (2024, United Nations - UN Water. Retrieved Nov 3, 2024, from https://www.unwater.org/news/new-guidance-developing-inclusive-health-infrastructure

Subbaraman, R., & Murthy, S. L. (2015). The right to water in the slums of Mumbai, India. *Bulletin of the World Health Organization, 93*(11), 815. 10.2471/BLT.15.155473

The World Bank Group. (2020, April 6). *WASH (Water, Sanitation & Hygiene) and COVID-19.* World Bank Group Media. https://www.worldbank.org/en/topic/water/brief/wash-water-sanitation-hygiene-and-covid-19

UN 2023 Water Conference. (2023, Auguts). United Nations. https://sdgs.un.org/conferences/water2023

UNEP. (2024, *Integrated water resources management.* UN environmental Program. https://www.unep.org/topics/fresh-water/water-resources-management/integrated-water-resources-management

United Nations. (2011, *International Decade for Action.* UNDESA. Retrieved Nov 2, 2024, from https://www.un.org/waterforlifedecade/human_right_to_water.shtml

United Nations. (2024, *Global Issue - Water*. United Nations - peace dignity and equality on a healthy planet. https://www.un.org/en/global-issues/water

UN Water - United Nations. (2023, UNWater. https://www.unwater.org/

Wateraid - What we do. (2023, Water Aid. https://www.wateraid.org/uk /

Water-Energy-Food-Ecosystem Nexus - European Commission. European Commission. https://international-partnerships.ec.europa.eu/policies/climate-environment-and-energy/water-energy-food-ecosystem-nexus_en

World Vision Australia. (2024, *Global water crisis: Facts, FAQs, and how to help.* World Vision. https://www.worldvision.com.au/global-water-crisis-facts?srsltid=AfmBOoqNzKphaowZs5RscBKOuJllwUU-1dw9z-3341MOzg9mZViSPFf6