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ENVIRONMENTAL JUSTICE CONCERNS IN ACCESS TO CLEAN WATER, SANITATION, AND HYGIENE

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The emergence of the COVID-19 pandemic highlighted the necessity of access to clean water and sanitation as a means for disease prevention, yet many around the world lack access to these essential resources. Using an environmental justice lens in the context of the COVID-19 pandemic, this paper looks to countries who have made substantial progress toward achieving access to adequate and equitable sanitation and hygiene for all and seeing what lessons might be learned from their success that can be imparted to other countries.

I. Introduction

Access to clean water, sanitation, and hygiene has long been incredibly important to ensure both public health and human rights. In fact, the right to clean water, sanitation, and hygiene has been formally recognized as a human right under international human rights law.[1] Access to these necessities is so invaluable, it is not only enshrined as a goal in the 2030 Sustainable Development

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[1] G.A. Res. 64/292, at 1 (Aug. 3, 2010).

Agenda,[2] sanitation and hygiene in particular is given its own target under the broader goal, which emphasizes its significance and value.

Lack of access to clean water, sanitation, and hygiene has enormous impacts on public health, environmental justice, and human rights, as these issues disproportionately impact the world's most vulnerable populations, such as women and children, people of color, indigenous, and lower income communities. While access to clean water, sanitation, and hygiene is important for public health generally, as it minimizes risk of common illnesses, the issue is particularly important in the context of the COVID-19 pandemic. The COVID-19 pandemic has brought these issues to the forefront of the Sustainable Development Agenda because access to clean water, sanitation, and hygiene, particularly access to handwashing, has been seen as a key preventative measure in the transmission of the largest global pandemic of our time. As a global community, we cannot hope to quell this pandemic if the most basic form of prevention is not available to large portions of the world.

Despite the importance of access to clean water, sanitation, and hygiene, 4.2 billion people (over half the global population) lack access to safe sanitation, three billion people lack basic handwashing facilities in their homes, and almost half the schools in the world are not equipped with handwashing facilities with soap and water.[3]

Using Sustainable Development Goal (SDG) 6, '"ensure availability and sustainable management of water and sanitation for all,"' with specific focus on target 6.2, '"achieve access to adequate and equitable sanitation and hygiene for all,"' this note examines environmental injustices through the lens of the COVID-19 pandemic and looks to countries who have had great progress in advancing this target. This note then seeks to consider whether there are any lessons learned from these countries' progress that could be applied to countries that are struggling to make meaningful progress on this target. Looking to countries such as Egypt, Madagascar and Uganda, this note will examine how laws and policies regarding access to clean water, sanitation, and hygiene have facilitated steps towards achieving SDG 6; asks whether there are any lessons to be learned from their substantial progress; and considers whether this progress could be replicated in other countries that are struggling to achieve meaningful progress towards achieving SDG 6.

II. Background: Water as a Human Right and an Environmental Injustice Concerns

The right to water and sanitation was not originally explicitly recognized as a human right under international law, as this right was not enshrined in the Universal Declaration of Human Rights adopted in 1948. On July 28, 2010, the United Nations General Assembly rectified this omission by adopting Resolution 64/292, which explicitly "recogniz[ed] the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights.[4] Additionally, the Convention on the Elimination of All Forms of Discrimination Against Women, the Convention on the Rights of the Child, and the Convention on the Rights of

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[2] G.A. Res. 70/1, at 14 (Oct. 21, 2015); *see also Ensure availability and sustainable management of water and sanitation for all*, UNITED NATIONS DEP'T OF ECON. AND SOC. AFFS. (hereinafter ECOSOC), https://sdgs.un.org/goals/goal6.

[3] *Water, Sanitation and Hygiene*, UNITED NATIONS WATER (hereinafter UN Water), https://www.unwater.org/water-facts/water-sanitation-and-hygiene/ (last visited Mar. 12, 2021).

[4] G.A. Res. 64/292, at 1 (Aug. 3, 2010).

Persons with Disabilities also recognize the right to clean water and sanitation as a human right.[5] The necessity of access to water and sanitation to realize human rights was also recognized in the 2030 Agenda for Sustainable Development, with Goal 6 being solely devoted to achieving clean water and sanitation for all; with the importance of access to sanitation and hygiene, specifically, being recognized in target 6.2 of the Goal.[6]

Environmental injustice presents itself in many forms. In the United States, for example, it can take on the form of zoning ordinances which allow for polluters to develop in urban areas, which are usually home to low-income families and people of color. These communities, due to their lack of political influence, often have no say in the matter.[7] It can manifest as an increased exposure to chemicals via the use of pesticides and cleaning products by immigrants who usually take on roles as farm workers or cleaning staff.[8] These injustices are not only detrimental to our environment, but at the very heart of it are inhumane violations of human rights, which further disadvantage already vulnerable communities.

The human rights to clean water, sanitation, and hygiene are "inextricably related to the rights of nature and the environment more broadly," as "climate change exacerbates [the challenges to fulfilling the] human rights to [clean] water, sanitation [and hygiene]."[9] In the 2018 Sustainable Development Goals Report, the United Nations Secretary General stated that "[t]oo many people still lack access to safely managed water supplies and sanitation facilities. Water scarcity, flooding and lack of proper wastewater management also hinder social and economic development. Increasing water efficiency and improving water management are critical to balancing the competing and growing water demands from various sectors."

The disparities that exist in access to clean water, sanitation, and hygiene are stark, as multiple reports from international organizations exemplify that a lack of access to these resources are disproportionately challenging in Global South nations.[10] Issues of access to water stretch far beyond hygiene, as a lack of access to water can also cause political instability, which can be seen in the Sahel region of Africa.[11] In a 2017 report from the United Nations (UN), data shows that "in

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[5] *Human rights treaties with explicit reference to safe drinking water and sanitation*, United Nations Human Rights Office of the High Commissioner, https://www.ohchr.org/en/issues/waterandsanitation/srwater/pages/internationalstandards.aspx.

[6] *See Ensure availability and sustainable management of water and sanitation for all*, ECOSOC, https://sdgs.un.org/goals/goal6.

[7] *See* Sadhbh Walshe, *'Environmental racism': Bronx activists decry Fresh Direct's impact on air quality*, THE GUARDIAN (Mar. 9, 2015) https://www.theguardian.com/us-news/2015/mar/09/fresh-direct-south-bronx-clean-air-environmental-racism.

[8] KRISTIN SHRADER-FRECHETTE, ENVIRONMENTAL JUSTICE: CREATING EQUITY, RECLAIMING DEMOCRACY (2002).

[9] Mark Williams & Sharmila Murthy, *Report on the October 25th, 2011 Roundtable Meeting with the UN Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation Catarina de Albuquerque*, CARR CENTER FOR HUM. RTS. POL'Y 8 (Oct. 2011) (on file with SSRN), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442020.

[10] *A 60 Second Guide to . . . The Global North/South Divide*, ROYAL GEOGRAPHICAL SOC'Y WITH IBG, https://www.rgs.org/CMSPages/GetFile.aspx?nodeguid=9c1ce781-9117-4741-af0a-a6a8b75f32b4&lang=en-GB (last visited March 14, 2021). The Global North/South refers to the gap in wealth and development between historically wealthy, developed countries and historically poor, developing countries.

[11] Andre-Michel Essoungou, *The Sahel: One region, many crises*, UNITED NATIONS, AFRICAN RENEWAL, https://www.un.org/africarenewal/magazine/december-2013/sahel-one-region-many-crises (last visited Mar. 19, 2021). The Sahel region in Africa faces many climatic variations, causing issues of drought and desertification. These issues fuel political instability, as the economy in the region is based largely on agriculture and farming. Due

sub-Saharan Africa, 75 percent of the population lack… basic hand washing facilities, followed by Central and Southern Asia at 42 percent, and Northern Africa and Western Asia at 23 percent."[12] This presents a particular issue for COVID-19 as, "[t]he coronavirus crisis has brought to the fore[ground] the critical importance of water, sanitation and hygiene for protecting human health."[13]

On a more individual level, the lack of access to clean water, sanitation, and hygiene also "overwhelmingly impacts poor people and marginalized communities;" such as women, children, Indigenous Peoples and People of Color.[14] Each year, one million women die from risks associated with unclean births, making up 11 percent of total maternal mortalities.[15] Poor sanitation also "reduces human well-being, social and economic development due to impacts such as anxiety, risk of sexual assault, and lost educational opportunities."[16] These lost educational opportunities have profound impacts on children, as 443 million school days are lost every year due to water related illnesses.[17] Exacerbating this issue is a lack of handwashing facilities with soap and water in schools, as almost half of the schools in the world lack these necessities.[18] In addition to profoundly negative impacts on access to education, the health of children is also put at risk due to the unavailability of clean water, sanitation, and hygiene. The United Nations reported that 297,000 children under the age of five die each year from diseases caused by poor sanitation and hygiene, which is more than 800 children each day.[19] Likewise, 26 percent of neonatal deaths are due to complications associated with unclean births.[20]

Furthermore, the COVID-19 pandemic—in addition to highlighting the necessity of access to clean water, sanitation, and hygiene—also highlights the ways in which Indigenous peoples, people of color and lower income communities are disproportionately impacted by a lack of access to these resources. For example, Indigenous peoples in the United States of America are dying from COVID-19 at a faster rate than that of other racial and ethnic groups in the country; and are dying at nearly twice the rate of white Americans.[21] Since the start of the pandemic, one in every 475 Indigenous peoples has died from COVID-19, compared to one in every 825 white

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to the compounding crises of food and water insecurity and fragile economies, the climate is prime for political instability.

[12] *Closing the gaps in water, sanitation and hygiene are critical to containing the spread of COVID-19 and other diseases*, UNITED NATIONS DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, STATISTICS DIVISION, https://unstats.un.org/sdgs/report/2020/goal-06/ (last visited Mar. 14, 2021).

[13] *Id.*

[14] *Fast Facts: Human Rights Based Approach and Water Governance*, UNITED NATIONS DEV. PROGRAMME (hereinafter UNDP), 1 (Dec. 1, 2015), https://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/sub-topic_human_rightsbasedapproaches/fast-facts-human-rights-based-approach-and-water-governance.html.

[15] UN Water, s*upra* note 3.

[16] *Sanitation*, WORLD HEALTH ORG. (June 14, 2019), https://www.who.int/news-room/fact-sheets/detail/sanitation. (last visited Mar. 14, 2021).

[17] *Facts and statistics*, WATERAID, https://www.wateraid.org/facts-and-statistics. (last visited Mar. 14, 2021).

[18] UN Water, s*upra* note 3.

[19] *Id.*

[20] *Id.*

[21] Nina Lakhani, *Exclusive: indigenous Americans dying from Covid at twice the rate of white Americans*, THE GUARDIAN (Fed. 4, 2021), https://www.theguardian.com/us-news/2021/feb/04/native-americans-coronavirus-covid-death-rate; *The Color of Coronavirus: COVID-19 Deaths by Race and Ethnicity in the U.S.*, AOM RSCH. LAB (March 5, 2021) https://www.apmresearchlab.org/covid/deaths-by-race#counts-over-time.

Americans.[22] While there is a long history of colonialism associated with the adverse impacts of COVID-19 on Indigenous communities, the importance of access to clean water, sanitation, and hygiene in this setting cannot be ignored. COVID-19 is impacting Indigenous communities more severely because of a basic deficiency, not all tribe members have clean water in their homes.[23] For example in the Navajo Nation, 15 percent of residents don't have piped water in their homes.[24] The insufficient access to clean water, sanitation, and hygiene is exacerbating the spread of COVID-19 in these communities.[25] Similarly, in areas of lower income, or areas with predominantly people of color, inadequate infrastructure impacts the availability of clean water, sanitation, and hygiene. For example, the 2014 water crisis in Flint, Michigan, which caused an outbreak of Legionnaires disease and lead poisoning, affects how the COVID-19 pandemic is playing out in the community. Mistrust in the water system is causing people to rely on bottled water which puts them at a higher risk of exposure and contraction of the disease as they need to leave their homes to obtain clean water.[26]

As New York City's Mayor, Bill DeBlasio tweeted, "this virus does discriminate, because our nation discriminates."[27] Though he was speaking about the United States of America, the basic sentiment applies to the global issue of discrimination, especially in the context of the pandemic. Groups who have been historically discriminated against, the most vulnerable populations, are being affected worse by the virus.

III. Brief Overview of SDG 6

In 2015, the UN General Assembly adopted the 2030 Sustainable Development Goals (SDGs). The SDGs were adopted with the intention of fulfilling the work of the Millennium Development Goals (MDGs), which were supposed to be achieved by 2015. The first six SDGs specifically targeted the achievement of the work left from the MDGs, and the remaining 11 expanded beyond the original goals of the MDGs. SDG 6 was born out of MDG 7, target 7.c, "halving the proportion of people without sustainable access to safe drinking water and basic sanitation."[28] The Goals are broad and cross cutting, touching on topics such as poverty, hunger, environmental protections, and sustainable development. The UN states that "clean water is a basic human need, and one that should be easily accessible to all."[29] Though efforts have been made to improve access to water, many countries, largely with populations of poor people of color, do not have this access. At the

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[22] Nina Lakhani, *supra* note 21.

[23] Jane Johnston, *Where Water Is Scarce on Native American Reservations COVID-19 Spreads More Easily*, CIRCLE OF BLUE https://www.circleofblue.org/2020/world/where-water-is-scarce-on-native-american-reservations-covid-19-spreads-more-easily/.

[24] *Id.*

[25] *Id.*

[26] *See* Kelly Hyde, *Residential Water Quality and the Spread of COVID-19 in the United States* (April 9, 2020) (unpublished manuscript) (on file with SSRN), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3572341.

[27] @NYCMayor, Twitter, (June 11, 2020, 12:19 PM), https://twitter.com/nycmayor/status/1271114913939894278?lang=en.

[28] MACHARIA KAMAU ET AL., TRANSFORMING MULTILATERAL DIPLOMACY, THE INSIDE STORY OF THE SUSTAINABLE DEVELOPMENT GOALS 172 (Pamela Chasek et al. eds., 2018).

[29] *Sustainable Development Goal 6, Ensure access to water and sanitation for all*, SDG TRACKER, https://sdg-tracker.org/water-and-sanitation#targets (last accessed Mar. 14, 2021).

close of the MDG period, while there was cause for celebration as millions of lives had been saved and conditions improved for many, complete success was still not achieved.[30]

When the pandemic hit, one of the first precautions the global community was told to take by health organizations was to frequently wash and disinfect hands. For those in developed, wealthy countries, access to handwashing facilities with clean running water was of no difficulty. Despite "the right to water is implicitly and explicitly protected as a human right" under international law, many people did not have this access when COVID-19 emerged.[31] Water is a human right. This right has been firmly established under General Assembly Resolution 64/292, and many other international treaties.[32] Yet, with international recognition of this right, and multiple international instruments guaranteeing this right, many do not have access to water.

IV. Case Studies of Countries Who Have Made Substantial Progress

"Generally speaking, water laws are rules enacted or provided by a legitimate authority that regulate the sectoral use of water."[33] This section will look at the rules enacted by authorities to regulate the use of water using Egypt, Madagascar, and Uganda as examples of countries who have made significant progress towards the achievement of SDG 6, target 6.2. These countries were identified for analysis because the tracker for SDG 6 showed that they had some of the greatest improvements in achieving SDG 6, target two with Egypt showing a relative change of +36 percent of proportion of population with basic handwashing facilities on premises, Madagascar with +854 percent, and Uganda with +717 percent.[34]

A. Egypt

Egypt's substantial progress towards achieving target 6.2 of SDG 6 can be attributed to three main factors; their ability to secure funding for development through the use of public-private partnerships; successful policies which contributed to their success in achieving the Millennium Development Goals; and their sustainable development strategy, Egypt Vision 2030.

One of the key factors that has allowed Egypt to attain substantial progress towards achieving SDG 6 is their access to funding. Through public private partnerships, and the Addis Ababa Action Agenda, Egypt has been able to secure financing to bring their ideas to fruition. The Addis Ababa Action Agenda "established a strong foundation to support the implementation of the [SDGs] by securing sources of finance."[35] Egypt is also one of the largest recipients of overseas development assistance and receives extensive donor support for economic development. In fact,

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[30] *The Millennium Development Goals Report*, UNITED NATIONS 4 (2015), https://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf.

[31] *Water Laws in Nepal: Laws Relating to Drinking Water, Sanitation, Irrigation, Hydropower and Water Pollution* (hereinafter Water Laws in Nepal), WATERAID NEPAL 3 (Feb. 2003), https://washmatters.wateraid.org/publications/water-laws-in-nepal-laws-relating-to-drinking-water-sanitation-irrigation-hydropower.

[32] G.A. Res. 64/292, *supra* note 4.

[33] Water Laws in Nepal, *supra* note 31, at 2.

[34] SDG TRACKER, *supra* note 29.

[35] THE ARAB REPUBLIC OF EGYPT, EGYPT NATIONAL REVIEW REPORT FOR INPUT TO THE 2016 HLPF 44 (2016), https://sustainabledevelopment.un.org/content/documents/10738egypt.pdf.

the United States is one of their chief sources of financial aid.[36] Additionally, a large part of Egypt's development strategy is based on a "participatory methodology" in which all stakeholders are part of "planning, preparation, and implementation process" allowing for the private sector to take on a leading role.[37]

Another factor which helps account for Egypt's progress in working toward the achievement of target 6.2 was their success in achieving the Millennium Development Goals.[38] By achieving the MDGs, Egypt was starting from a better position, allowing them to have made significant progress on target 6.2. Some factors which contributed to Egypt's progress under the MDGs were political stability and, as mentioned above, their extensive donor support.[39] Additionally, being a country largely made of desert and having one main water source, the Nile, Egypt is well versed in crafting policies and programs to improve water allocation, and has several ministries working to ensure access to clean water.[40] The main themes which guided policies around water conservation during this time were optimizing the use of available water resources and improving water quality protection and pollution abatement.[41] Along the lines of these themes, Egypt enacted several policies to aid in expanding the availability of clean water. These policies included: a reuse policy, which aimed to use agricultural drainage water optimally; a reduction in agro-chemical use, which was achieved through the removal of subsidies and the outright banning of chemicals, instead switching to biological and genetic engineering as a replacement;[42] rainwater harvesting; watershed management; limited desalination; and irrigation and drainage infrastructure projects.[43]

Egypt has adopted the Sustainable Development Strategy: Egypt Vision 2030 (the Strategy), which represents a multidimensional approach to achieving sustainable development in Egypt by 2030, in tandem with the SDGs. The Strategy was developed using a participatory planning approach in which "experts, academics, private sector representatives, civil society, government officials and international development institutions" actively participated.[44] Additionally, the planning team included "representatives from all groups including youth, women and disabled."[45]

The Strategy combines three dimensions, economics, social considerations, and environmental considerations. Water is a crosscutting consideration in all of the dimensions, as each of them interacts with water in a unique way. The programs they have set up under the Strategy related to water include:

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[36] Sameh El-Saharty et. al., EGYPT AND THE MILLENNIUM DEVELOPMENT GOALS: CHALLENGES AND OPPORTUNITIES, THE WORLD BANK, 2 (Feb. 2005), https://www.un.org/en/development/desa/policy/mdg_workshops/mdgreports/egypt/general.pdf.

[37] The Arab Republic of Egypt, *supra* note 35.

[38] DAVID K. BOHL, ET. AL., SUSTAINABLE DEVELOPMENT GOALS REPORT: EGYPT 2030, FREDERICK S. PARDEE CENTER FOR INT'L FUTURES, 8 (Nov. 2018), https://pardee.du.edu/sites/default/files/SDG_Report_Egypt_2030%2B%281%29.pdf.

[39] SAMEH EL-SAHARTY ET. AL., *supra* note 36.

[40] *Id*. at 47.

[41] *Id*. at 46.

[42] *Id*. at 47.

[43] *Id*. at 48.

[44] ARAB DEV. PORTAL, 2030 EGYPT VISION 4 https://www.arabdevelopmentportal.com/sites/default/files/publication/sds_egypt_vision_2030.pdf.

[45] *Id.*

> strengthening the institutional and legislative structure of water resources management system, expanding infrastructure for supporting a sustainable water system, adopting fiscal policy reforms to encourage sustainable consumption patterns of water and natural resources, [and] raising awareness to reserve environment and natural resources, providing incentives for advanced alternatives and technologies for water conservation and natural resources protection.[46]

Despite Egypt's substantial progress towards achieving target 6.2, there are still gaps in Egypt's access to clean water, sanitation, and hygiene; and these gaps fall along income lines. In 2003, 97.5 percent of the population in urban communities had access to clean water piped directly into their homes; while only 82.1 percent of the population in rural areas had this access.[47] Additionally, 99.6 percent of the population in urban communities had access to sanitation facilities in their homes; while only 78.2 percent of their rural counterparts shared the same access.[48] While nationally Egypt has shown great progress toward achieving target 6.2, disparities in access to clean water, sanitation, and hygiene still exist regionally and locally.

B. Madagascar

Madagascar's substantial progress towards the achievement of target 6.2 of SDG 6 can be attributed largely to a few key factors; effective governance, the use of public private partnerships to turn children into "ambassadors" of sanitation and hygiene, monitoring and surveillance, and an emphasis on equity.

Despite a national political crisis, Madagascar has still been able to make considerable progress towards the achievement of target 6.2. When opposition leader Andry Rajoelina assumed power in 2009 via military force, governmental progress towards Water, Sanitation, and Hygiene (WASH) halted.[49] Although international development aid for most projects was withdrawn during this time, aid for WASH was one of the few projects to continue during the time of political uncertainty.[50] For this reason, Madagascar is an exemplary example of how, despite political instability, "it is possible to prepare the ground for better water governance."[51]

Madagascar has formally recognized the human right to water and sanitation in their local laws.[52] In Madagascar, there has been "registered success"[53] with respect to governance for water and sanitation. Madagascar's organizational structure is comprised of two main ministries; the Ministry of water which is the "leading institution for both water and sanitation," and the Ministry

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[46] *Id.* at 33.

[47] Sameh El-Saharty et. al, *supra* note 36, at 47.

[48] *Id.*

[49] WATER GOVERNANCE, FINAL REPORT SUMMARY GOAL WASH: MADAGASCAR 1 (2016), http://watergovernance.org/wp-content/uploads/2016/07/GoAL-WaSH-final-report-summary-Madagascar-003.pdf.

[50] *Id.*

[51] *Id.*

[52] UN-WATER GLOBAL ANALYSIS AND ASSESSMENT OF SANITATION AND DRINKING WATER (hereinafter UN-Water Global Analysis), COUNTRY HIGHLIGHTS: MADAGASCAR 4 (2014), https://www.who.int/water_sanitation_health/glaas/2014/madagascar-12-oct.pdf?ua=1.

[53] *Id.* at 1.

of Health which leads in "hygiene promotion."[54] Additionally, through inter-sectoral collaboration with the Ministry of Education, they developed a national water, sanitation, and hygiene program. In addition to the aforementioned ministries; Madagascar has 11 ministries which share WASH responsibilities.[55]

Using their effective governance, Madagascar has also instituted specific plans and policies for improving and sustaining services for clean water, sanitation, and hygiene. These plans and policies include improving the reliability and continuity of urban water supply, reusing wastewater and septage, keeping rural water supply functioning long term, and addressing resilience to climate change.[56] Additionally, the government of Madagascar instituted the Governance, Advocacy and Leadership in Water, Sanitation and Hygiene Strategy (GoAL WaSH). The original aims of GoAL WaSH were to develop a national water master plan, establish a comprehensive database for the Ministry of Water, and develop capacity building interventions.[57] From 2011 to 2014, the GoAL WaSH programme, with aid from the UN Development Programme, added elements of sustainability including the mapping of hydraulic resources, evaluating capacity and organizational needs, strengthening the management and coordination tool of the Ministry of Water, and creating a User's Guide for the safe management and operation of water supply systems.[58] Financing from GoAL WaSH provided funding for "inexpensive and well targeted activities," with immediate impacts.[59] Financing allowed for accurate and up to date information on coverage and monitoring. This provided the Ministry of Water with information needed to develop informed policies and programmes, take inventory of capacity-building needs, financial and material gaps, and create the User's Guide on the management and operation of drinking water facilities.[60]

In 2017, the Mèrieux Foundation aided in Madagascar's WASH efforts by creating the "Stop Germs!" game. The Foundation's approach was to use the "immersive technologies that make computer games popular"[61] to help teach children the importance of hand washing, and how to do so properly. Their efforts are targeted at children eight to twelve, and are aided by the Ministry of Education, who integrated the game into the school curriculum. By focusing on children, "they become ambassadors who introduce new behaviors to their parents."[62]

Madagascar has also utilized monitoring and surveillance in their efforts to achieve target 6.2. Similar to the UN, adequate monitoring of goals and targets helps to ensure the achievement of such goals. Through monitoring and surveillance, Madagascar has been able to recognize that the methods of monitoring and surveillance that are used for some goals or in some areas are not as beneficial across the board. For example, during monitoring of the sanitation component, it was found that "most of the rural and urban structures do not benefit from internal monitoring of formal

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[54] *Id.* at 2.
[55] *Id.*
[56] *Id.*
[57] WATER GOVERNANCE, *supra* note 49.
[58] *Id.*
[59] *Id.* at 2.
[60] *Id.*
[61] *WASH in Madagascar: Educating children, parents and teachers about the role of good hygiene to prevents infectious diseases*, MÉRIEUX FOUNDATION (Sept. 27, 2018), https://www.fondation-merieux.org/en/news/wash-in-madagascar-educating-children-parents-and-teachers-about-the-role-of-good-hygiene-to-prevent-infectious-diseases/.
[62] *Id.*

service providers."[63] Due to monitoring and surveillance, Madagascar was able to better identify a way to monitor progress in these individualized areas. By being able to recognize that monitoring and surveillance strategies do not work the same across the board, they are then able to implement more specific monitoring and surveillance plans, which will facilitate the accurate tracking of targets and goals.

Madagascar's plans and policies also include specific emphasis on achieving target 6.2 in an equitable manner. With this emphasis of equity in mind, Madagascar seeks to ensure that WASH services and hygiene promotion is distributed equitably throughout both rural and urban areas.[64] This is of particular importance as nearly 70 percent of the population lives in rural areas.[65] This emphasis seeks to remediate some of the issues which Egypt has in their achievement of the target.

While Madagascar has made significant progress towards the fulfillment of target 6.2, one of the biggest barriers which stands in their way of fulfillment of the target is a lack of funding. For instance, monitoring and surveillance is not funded enough, as WASH infrastructure is prioritized for receiving funding.[66] Additionally, financing for WASH employees isn't always available.[67] Due to the scarcity of funding in Madagascar, certain policies and plans are prioritized over others. Should Madagascar receive adequate funding, they would be able to effect more meaningful progress.

C. Uganda

Uganda's progress can be primarily attributed to the use of public private partnerships with organizations such as WASH Alliance Uganda, partnerships with nongovernmental organizations such as UN Children's Fund and the Uganda Sanitation Fund, and through the use of educational programs in schools and participatory strategies and approaches.

In partnership with the UN Children's Fund, Uganda delineated national standards for access to WASH services in their schools. These standards include ensuring that there is one handwashing facility per 40 students, that each facility has soap and water, and that the facilities are maintained through regular inspection and daily cleanings.[68] They have also implemented hygiene education in schools. This education includes instruction from staff members who are trained in WASH behaviors, the distribution of hygiene education manuals, health clubs, and activities themed around WASH activities.[69] Additionally, through the Uganda Sanitation Fund (the Fund), grants for sanitation projects are able to be secured.[70] The Fund, which is funded by the Water Supply and Sanitation Collaborative Council and managed by the UN Office for Project

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[63] UN-Water Global Analysis, *supra* note 52, at 1.

[64] *See* UN-Water Global Analysis, *supra* note 52.

[65] WATER GOVERNANCE, *supra* note 49.

[66] UN-Water Global Analysis, *supra* note 52.

[67] *See* UN-Water Global Analysis, *supra* note 52.

[68] *Uganda*, WASH ALL. INT'L, https://wash-alliance.org/country-alliances/uganda/. (last visited Mar. 14, 2021).

[69] *Id.*

[70] *Uganda Sanitation Fund Program*, MINISTRY OF PUB. HEALTH OF THE REPUBLIC OF UGANDA https://www.health.go.ug/programs/uganda-sanitation-fund-program/. (last visited Mar. 14, 2021).

Services, aims to "creat[e] a robust demand for sanitation" to foster creative solutions to promote hygiene in their communities.[71]

WASH Alliance Uganda is comprised of the Uganda WASH Alliance sub-programme, the Uganda Kamuli Buyende, and Nebbi sub-programme.[72] The ultimate goal of the Alliance is to contribute to increased and sustained access to and use of safe water and sanitation services and to improve hygiene practices.[73] They aim to achieve this through three main objectives: behavioral changes at the community and household levels, creation of a functional WASH market, and improvement of WASH governance.[74] To achieve behavioral change the WASH Alliance seeks to: create awareness of WASH needs; mobilize at the grassroots level by holding community dialogue meetings; and foster inclusive WASH through capacity building, community investment, and knowledge sharing.[75] Through financing, business development and marketing, and setting quality standards, the Alliance seeks to create a functional WASH market.[76] The Alliance plans to improve WASH governance through lobbying, budget tracking, and capacity building.[77]

The WASH Alliance has seen significant participation by women, children and differently abled people.[78] These often-excluded communities have reportedly been involved in the planning and decision-making process of the WASH Alliance. Women are leading in sanitation promotion in the household and in the community.[79] In schools, girls are the majority in the health clubs and take the lead in engaging in health awareness and promotional activities.[80] Additionally, a major action to ensure progress towards sanitation and hygiene under Uganda's National Development Plan II is to scale up participatory strategies and approaches through community led sanitation.[81] Their contributions to the advancement of WASH policies are of particular importance, and as this paper emphasized earlier, these communities are disproportionately impacted by a lack of access to these resources.

V. Lessons Learned

As outlined above, this note has highlighted several countries who have made meaningful progress toward achieving target 6.2. Key takeaways from these countries' approaches can be summarized as the following: Egypt's substantial progress is mainly attributed to their access to funding and their multisectoral approach to access to clean water, sanitation, and hygiene; Madagascar has made substantial progress due to effective governance, intersectoral collaboration, use of public-private partnerships, monitoring and surveillance, its emphasis on equitable distribution of resources, and its recognition of water and sanitation as a human right; and Uganda has seen progress as a result of educational programs, partnerships with NGOs, and its inclusive

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[71] *Id.*
[72] *Uganda*, *supra* note 68.
[73] *Id.*
[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *Id.*
[78] *Id.*
[79] *Id.*
[80] *Id.*
[81] SANITATION AND WATER FOR ALL, UGANDA OVERVIEW: WATER, SANITATION AND HYGIENE (2017), https://www.sanitationandwaterforall.org/sites/default/files/2020-09/2017%20Uganda%20Overview_final.pdf.

approach to policy planning and leadership. The question that remains is whether any of these practices can be replicated in other countries who are still struggling to make meaningful progress on target 6.2.

Overall, progress in this area is a result of approaches such as: effective governance; multisectoral and intersectoral collaboration; and inclusive approaches to policy and planning, which collectively recognize the issues of access to clean water, sanitation, and hygiene must be addressed independently from access to drinking water. These approaches could aid in achieving progress on target 6.2 in a country such as Nepal, who despite valiant efforts, has seen a 14 percent loss in the number of population with access to basic handwashing facilities.[82] This may be due, in part, to Nepal not having a "separate policy of specific legislation regarding sanitation."[83] In Nepal, sanitation is only "mostly dealt with in connection to drinking water."[84] These gaps ignore the necessity of handwashing, not only to prevent disease, but as a basic human right. While Nepal does acknowledge that water sanitation is necessary to "combat […] waterborne diseases," there is no discussion of access to sanitary water for disease prevention.[85] Bridging this gap in Nepal's policy on sanitation may be key in improving their progress on target 6.2, similar to countries who have made meaningful progress on the target.

Additionally, hygiene education programs, such as in Uganda, are also an effective tool to promote progress on target 6.2. One of the biggest losses to the global community due to the COVID-19 pandemic has been the disruption to education, which can be a valuable tool for preventing pandemics and can aid in the achievement of SDGS. Through water, sanitation, and hygiene (WASH) education, effectual steps towards the achievement of SDG 6 can be made. Many approaches to SDG achievement often focus on technical or infrastructure development, which is incredibly important, but "those solutions are also expensive, time-consuming and sometimes, undertaken without an understanding of local cultural context."[86] Through the use of non-profits such as Project WET and the Clean the World Foundation, WASH education can be made accessible to many communities.

The positive effect of WASH education has been demonstrated in India, as they work to end open defecation by incorporating education into their infrastructure projects. In India, it was found that although people owned personal latrines, "open defecation can [still] persist."[87] This stemmed from a belief that "others do not use toilets or latrines."[88] To combat these beliefs, "researchers piloted an educational campaign focused on changing people's behavior and beliefs around latrine use;" which yielded promising results.[89] While infrastructure is an important step in achieving the SDGs, it alone is not enough; which is why it is essential to combine WASH education to infrastructure projects.

Furthermore, as exemplified by Madagascar, the progress derived from the use of public-private partnerships (PPPs) can be substantial. PPPs are a "collaboration between a government agency and a private sector company that can be used to finance, build, and operate projects," such

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[82] SDG TRACKER, *supra* note 34.

[83] Water Laws in Nepal, *supra* note 31, at 32.

[84] *Id.* at 33.

[85] *Id.* at 32.

[86] Nicole Rosenleaf Ritter, *Education Is Critical for Success in Sustainable Development Goal 6*, IMPAKTER (Aug. 8, 2019) https://impakter.com/education-is-critical-for-success-in-sdg6/.

[87] *Id.*

[88] *Id.*

[89] *Id.*

as public works projects.[90] A lack of funding is one of the barriers impeding the implementation of polices which would aid in the achievement of SDGs. PPPs seek to remedy this issue, as they try to "increase access to capital, allow off-balance sheet borrowing, increase innovation, and help transfer risks."[91] The utilization of a PPP can "allow a project to be completed sooner or make it a possibility in the first place."[92] By providing adequate funding for projects, PPPs help further the achievement of the Goals. Similar to the success of PPPs in Madagascar with the "Stop the Germs!" game, Egypt has also facilitated progress through the use of PPPs. Aqualia, a leading water company which has "extensive experience in the development of PPP projects, led a project for the New Cairo wastewater treatment plant."[93] The company has a presence in 21 countries, serves more than 22.5 million people, and has successfully executed over 700 projects around the world.[94] Aqualia's project in Egypt exemplifies the benefit of using PPPs for finance, as the Public-Private Infrastructure Advisory Facility of Egypt recommended the use of a PPP to carry out the project.[95] Although Egypt had limited experience working with PPPs, the government introduced a special law for regulating PPPs.[96] When the project was completed, the plant was the recipient of several international awards, due to its positive impact on several of the SDGs, including SDG 6.[97] The steps taken by Egypt in carrying out this project with the aid of a PPP should be replicable in other instances; especially taking into account that there was political instability in the country at the time of the project.[98]

The use of PPPs can be particularly effective in countries that, despite efforts made to achieve target 6.2, struggle to make meaningful progress due to a lack of adequate funding for their projects. Haiti is a country which has struggled with a lack of adequate funding for their projects, as resources are often stretched thin to deal with compounding crises. Between 2000 and 2017, Haiti has seen a five percent loss in the proportion of population with access to basic handwashing services.[99] Additionally, Haiti has "the lowest rates of access to improved water and sanitation infrastructure in the western hemisphere."[100] The regional average for sanitation coverage is 80 percent, compared to "only 69% of the [Haitian] population ha[ving] access to an improved water source.[101] Haiti is also the only country in which "the proportion of the population

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[90] Thomas Brock, *Public Private Partnerships*, INVESTOPEDIA (last updated Jan. 23, 2021), https://www.investopedia.com/terms/p/public-private-partnerships.asp (last visited Mar. 14, 2021).

[91] Mahmoud Mohieldin, *SDGs and PPPs: What's the connection?,* WORLD BANK BLOGS (April 12, 2018) https://blogs.worldbank.org/ppps/sdgs-and-ppps-whats-connection (last visited Mar. 14, 2021).

[92] Brock, supra note 90.

[93] *Water PPPs and the UN Sustainable Development Goals*, GLOBAL WATER INTEL. (May 1, 2018), https://www.globalwaterintel.com/sponsored-content/water-ppps-and-the-un-sustainable-development-goals-aqualia. (last visited Mar. 14, 2021).

[94] Jordi Salvador, et al., *New Cairo Wastewater Treatment Plant (Egypt)*, IESE BUSINESS SCHOOL, UNIVERSITY OF NAVARRA, 11 (2016).

[95] *Id.* at 12.

[96] *Id.* at 12 and 17.

[97] GLOBAL WATER INTEL, *supra* note 93.

[98] Salvador et al., *supra* note 94, at 18. ("[t]he political situation was affected by social and political instability due to the protest that started on January 25, 2011 in Cairo's Tahrir Square," which led to the January 25 revolution, and ended with the president being ousted).

[99] SDG TRACKER, *supra* note 34.

[100] Richard Gelting et al., *Water, Sanitation and Hygiene in Haiti: Past, Present, and Future*, 89 AM. J. TROP. MED. HYG. 4, 665 (2013). doi:10.4269/ajtmh.13-0217.

[101] *Id.*

with access to improved sanitation facilities decreased from 1995 to 2010."[102] Haiti has attempted to make progress towards achieving target 6.2–in 2009 the Haitian parliament unanimously voted into law reform of the water and sanitation sector, culminating in the creation of the regulatory body the National Directorate for Potable Water and Sanitation (DINEPA). DINEPA "laid out [an] organizational structure, as well as [] funding, evaluation and control mechanisms."[103] DINEPA faced three major challenges; "implementation of institutional reform, improvement of operational performance and sustainability of capital works and improvements, and stimulation of investment in infrastructure."[104] By recognizing the issues of access to clean water, sanitation, and hygiene separately from access to drinking water, Haiti was well prepared to make progress on the target. However, an earthquake hit Haiti in 2010, and attention turned to dealing with the aftermath of the earthquake and the growing cholera outbreak. Due to resources and finances being stretched thin to deal with the compounding crises, improving access to clean water, sanitation, and hygiene fell by the wayside. Although there were over 100 non-governmental organizations working in the water, sanitation and hygiene sector in Haiti, "[m]any of these efforts […] were response oriented, dealing with the immediate consequences of the earthquake and cholera epidemic, and did not focus on longer term development of WASH infrastructure programs."[105] The main failure of Haiti's DINEPA was therefore due to unfortunate timing and a lack of available resources and funding. Due to this, the use of PPPs to ensure and secure funding for Haiti's projects could be a valuable tool.

However, despite access to funding, or public-private partnerships, or effective governance, there may be country-specific barriers that stand in the way of achievement of this target. In Haiti, in addition to their devastating earthquakes, the country has a long history of colonialism.[106] Additionally, Nepal has a very rigid caste system which impacts equitable access to water.[107]

Access to clean water, sanitation, and hygiene is also an issue of equity. As discussed earlier, even in countries where substantial progress has been made, there is an issue of equity in access to these resources. Egypt exemplifies this, as they have made substantial progress towards achieving the target, but there is an issue of access to these resources in rural communities. Even in a Global North country such as the United States, this note discussed the inequitable access to these resources in marginalized communities in the country. To help address environmental justice concerns and remedy the shortcomings in the approaches of successful countries, as well as

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[102] *Id.*

[103] *Id.*

[104] *Id.*

[105] *Id.*

[106] *See generally* Matthew Sparke, *What Postcolonial Theory Tells Us about Haitian History and Struggle*, Univ. OF WASH. , https://www.washington.edu/omad/ctcenter/projects-common-book/mountains-beyond-mountains/postcolonial-theory/ (last visited Mar. 14, 2021); *see also* Jon Henley, *Haiti: a long descent to hell*, THE GUARDIAN (Jan. 14, 2010), https://www.theguardian.com/world/2010/jan/14/haiti-history-earthquake-disaster.

[107] Indra Maya Shankar, *Thousands of families denied access to safe water in Nepal*, RELIEF WEB (June 13, 2012) https://reliefweb.int/report/nepal/thousands-families-denied-access-safe-water-nepal#:~:text=Due%20to%20Hindu%20traditional%20practice,water%20resources%20in%20the%20villages.&text=Within%20limited%20water%20resources%2C%20it,been%20daily%20practicing%20among%20Dalits (last visited Mar. 14, 2021). ("[d]ue to Hindu traditional practice which is a social caste-based discrimination, Dalits [lower caste] are often denied […] access [to] water resources in the villages"); *see generally Wòch Nan Soley: The Denial of the Right to Water in Haiti*, THE CENTER FOR HUMAN RTS. AND GLOB. JUST. (2009), https://chrgj.org/wp-content/uploads/2009/06/wochnansoley.pdf.

country specific barriers to success, a human rights-based approach to access to clean water, sanitation, and hygiene should be applied to Global South and Global North countries alike.

Human rights have been a central pillar of the UN's work since its inception in 1945. A human rights-based approach (HRBA) is one of the six guiding principles of the UN Sustainable Development Framework. HRBA is a "conceptual framework for the process of human development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights."[108] A HRBA "stresses the correspondence between rights and obligations" which provides Member States with a framework that "aims to ensure […] respect for human rights are integrated into development plans[.]"[109] In 2003, UN agencies agreed on human rights principles to aid in development, such as non-discrimination, equality, participation, and accountability.[110] By implementing these principles in water and sanitation policies, there is a requirement of "deliberate efforts to identity the most marginal and vulnerable individuals and groups, ensuring that they are given special attention in interventions."[111] UN agencies also agreed on three essential attributes of a HRBA:

1. All programmes of development co-operation, policies and technical assistance should further the realisation of human rights as laid down in the Universal Declaration of Human Rights (UDHR) and other international human rights instruments
2. Human rights standards contained in, and principles derived from, the UDHR and other international human rights instruments guide all development consideration and programing in all sectors and in all phases of the programming process
3. Development cooperation contributes to the development of the capacities of 'duty-bearers' [States] to me their obligations and/or of 'right-holders' [citizens] to claim their rights.[112]

Furthermore, as applied to access to water and sanitation, "[a]n HRBA intersects with water governance which is defined by political, social, economic and administrative systems that affect the use, allocation and management of water resources and delivery of water and sanitation services."[113] Additionally, an HRBA designates clear "roles and responsibilities, transparency in decision making," and focuses on process and accountability, which offers a clear pathway for improving water governance.[114]

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[108] *Human Rights Based Approach Universal Values*, UNITED NATIONS SUSTAINABLE DEV. GRP. https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach. (last visited Mar. 14, 2021).

[109] UNITED NATIONS WATER, HUMAN RIGHTS TO WATER AND SANITATION 2 (Sept. 2018), https://www.unwater.org/app/uploads/2018/10/WaterFacts_water_and_human_rights_sep2018.pdf.

[110] UNITED NATIONS SUSTAINABLE DEV. GRP. , THE HUMAN RIGHTS BASED APPROACH TO DEVELOPMENT COOPERATION TOWARDS AND COMMON UNDERSTANDING AMONG UN AGENCIES 1 (Sept. 2003), https://unsdg.un.org/sites/default/files/6959-The_Human_Rights_Based_Approach_to_Development_Cooperation_Towards_a_Common_Understanding_among_UN.pdf.

[111] UNDP, *supra* note 14.

[112] UNITED NATIONS SUSTAINABLE DEV. GRP. , *supra* note 110.

[113] UNDP, *supra* note 14.

[114] *Id.*

The UN Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation recognized ten criteria to evaluate good practices from a human rights perspective; "availability, accessibility, quality/safety, affordability, acceptability, non-discrimination, participation, accountability, impact and sustainability."[115] Since the mandate has been established, efforts on an international level to take up a HRBA to clean water, sanitation, and hygiene have already been seen. For example, in drafting the SDGs, the shortcomings of the Millennium Development Goals (MDGs) on human rights have been rectified, as the MDGs' focus was to "halve the proportion of people without sustainable access to safe drinking-water and basic sanitation."[116] This was inconsistent with human rights, as human rights would dictate that *everyone* have this access, and was remedied in SDG 6.[117] Additionally, the language of the MDGs allowed for countries to ostensibly make a lot of progress towards achieving the Goal while ignoring issues of equity, which is an issue seen in Egypt as well as the United States.[118]

The Special Rapporteur has identified that declaring water and sanitation as a human right on the national level has a significant impact on attaining the Goal in an equitable way. "[T]he human rights framing helps the ultimate goal of improving access to water and sanitation services."[119] Additionally, the Special Rapporteur also identified that benefits can be derived from "building coalitions between the… mandate and other groups working with vulnerable populations on social justice issues."[120] Human rights indicators, such as community organizing and monitoring and evaluation, have also been recognized as effective accountability mechanisms to ensure the fulfillment of target 6.2 in an equitable way.[121] The emphasis on equity and accountability is of particular importance, as the Special Rapporteur also emphasized the importance of not repeating patterns of exclusion and discrimination.[122]

Madagascar and Uganda's laws and policies follow many of these suggestions. Madagascar has recognized these rights on a national level and uses monitoring and surveillance to ensure equitable access to these resources.[123] Uganda has groups of grassroots organizers and has made equitable access to these resources a cornerstone of their policy, as they include the voices of vulnerable populations in their decision-making processes.[124] These countries have, in some senses, adopted a HRBA to access clean water, sanitation, and hygiene. This could, perhaps, account for their great progress toward achieving target 6.2. These countries are also achieving the target in an equitable way, and therefore their HRBA to these resources is a lesson which could be applied to countries such as Egypt and the United States who are struggling with equitable access to these resources.

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[115] Williams & Murthy *supra* note 9, at 2.

[116] *Id.* at 4.

[117] ECOSOC, *supra* note 6. SDG 6 aims to "ensure availability and sustainable management of water and sanitation for *all*." This approach is consistent with human rights, as it seeks to provide access to these resources for everyone, therefore remedying the shortcomings of the MDGs.

[118] *See* Nina Lakhani, *supra* note 21; EL-SAHARTY, *supra* note 36.

[119] Mark Williams & Sharmila Murthy, *supra* note 9.

[120] *Id.*

[121] Sharmila Murthy, *Report from the Radcliff Exploratory Seminar on the Human Rights to Water and Sanitation: From Theory to Practice*, RADCLIFFE INSTITUTE FOR ADVANCED STUDY 10 (Jan. 26, 2013) (on file with SSRN), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442018.

[122] Mark Williams & Sharmila Murthy, *supra* note 9, at 7.

[123] *Country Highlights: Madagascar*, *supra* note 52, at 1 and 4.

[124] *Uganda*, *supra* note 68.

VI. Conclusion

Access to clean water, sanitation, and hygiene is indisputably a human right; yet hundreds of thousands of people, in Global North and Global South countries alike, still lack access to these basic and necessary services. By analyzing countries who have made progress towards achieving access to these services for all, this note has identified: effective governance in the form of multisectoral and intersectoral collaboration, the use of public private partnerships and non-governmental organizations, and educational programs as a few key approaches which can be implemented by countries who are struggling to make meaningful progress towards achieving target 6.2. A human rights-based approach, however, is the most important approach in ensuring access to these resources. Rights-based approaches may help remedy issues countries face that are beyond their control, as seen in Haiti and Nepal, as well as issues of equity, as seen in the United States and Egypt.

Access to clean water, sanitation, and hygiene is a human right, and a lack of access violates many other human rights. In the context of the COVID-19 pandemic, the right to life is threatened by a lack of access to these resources. On a global scale, society cannot hope to quell this virus if it is allowed to fester in certain parts of the world. Ensuring access to clean water, sanitation, and hygiene is a necessary step in ensuring the health and wellbeing of all humankind.