



EMBRACE RELIEF

"Embrace The World"

2022 Report



Embrace Relief Roundtable
Discussion Series:

**Sustainable
Fresh Water
Systems
During
COVID-19**



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For nearly a decade, Embrace Relief has provided critical support to millions of people across the globe in a number of ways. No matter the issue, our goal is to develop an understanding of the unique challenges facing different parts of the world, and to be part of a sustainable solution that enriches the lives of people in the communities we serve.

On March 22, 2022, Embrace Relief hosted its first Roundtable Discussion Series event, another step in driving the conversation around global sustainability and aid for those in need around the globe. The report that follows summarizes that discussion, "Sustainable Fresh Water Systems During COVID-19."

We sought out experts with close ties and deep perspectives on the clean water crisis in sub-Saharan Africa and asked them to share the details of the situation on the ground, the biggest challenges their communities face, and their proposed solutions. The two-hour roundtable raised some thought-provoking questions and allowed for a fruitful exchange of ideas, which you can see outlined in the report below.

We hope that the ideas discussed lead to a greater understanding of the clean water situation in sub-Saharan Africa, and that they inspire meaningful, long-lasting change. From Embrace Relief's perspective, our discussions with stakeholders on the ground will inform how we operate, too.

Embrace Relief would like to sincerely thank all of the speakers who took part in our roundtable discussion for continuing this dialogue. We have plans to host more Roundtable Discussion Series events in the future in support of our humanitarian missions, as well. It's all in service of shining a spotlight on the many different challenges in the world, and working towards solutions.

Thank you for your support of Embrace Relief, which makes all of this possible.

With Gratitude,

A handwritten signature in black ink, appearing to read 'W. Alexander Morel', written in a cursive style.

William Alexander Morel
Board Member
Embrace Relief Foundation

**Speech of H.E. Minata Samate Cessouma, Commissioner for Health,
Humanitarian Affairs and Social Development, African Union
Commission Embrace Relief Inaugural Roundtable
Discussion Keynote Address
March 22, 2022**

I am pleased to join Embrace Relief Foundation today to discuss health sanitation issues during COVID. First, I wish to thank the event organizers for convening us to address critical issues to consider during a health crisis.

The African Union Commission led the development of the Africa Joint Continental Strategy for COVID-19 to prevent severe illness and death from COVID-19 infection in the Member States and minimize social disruption and economic consequences of the COVID-19 pandemic.

The continental COVID 19 Strategy promote evidence-based public health practice for surveillance, prevention, diagnosis, treatment, and control of COVID-19. The strategy emphasizes the health care preparedness strategy, which includes but is not limited to implementing rigorous infection prevention and control, including using respiratory hygiene monitors at entry points, handwashing, and appropriate use of personal protective equipment. In addition, this strategy reflects the importance of providing safe water, sanitation, and hygienic conditions to protect human health during all infectious disease outbreaks, including the COVID-19 pandemic.

COVID-19 significantly impacts the sustainability and continuity of health and wash services. The global pandemic COVID-19 causes socioeconomic and health, and sanitation service has implications due to massive disrupter. It's in this context important to note that developing countries with humanitarian crises and vulnerable populations are significantly affected by COVID-19. Therefore, they need to expand their investment in WASH services as an essential mechanism in mitigating the COVID-19 pandemic. WHO has recommended that Hand hygiene is a significant element of the WASH framework program as a protective measure to prevent COVID-19 transmission.

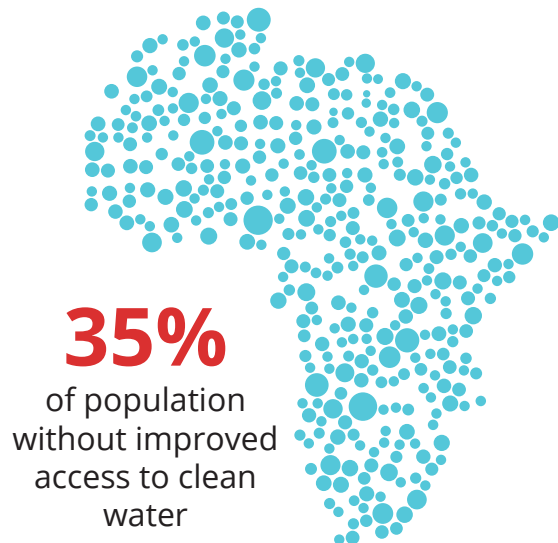
The pandemic could explode in an even more devastating way, even more, disastrous than seen thus far in Africa. Health Ministers of the continent underscored poverty, poor sanitation, other disease burdens, overstretched health systems, and extreme urban population density. Ministers emphasized Multispectral collaboration and partnership and further called for a coordinated response to control COVID 19.



“ Around the globe, over 785 million people do not have improved access to clean water. Of those 785 million people, approximately 400 million live in sub-Saharan Africa ”



The Water Crisis In Sub-Saharan Africa



With a little more than 1.1 billion people living on the subcontinent, those without improved access to clean water account for roughly 35% of the population, making it the region with the lowest water, sanitation and hygiene (WASH) coverage in the entire world. This ubiquitous gap in access has detrimental effects on the region's communities and their prospects for growth. Looking to the future, the ongoing crisis is likely to continue and grow due to the region's rapidly expanding population. It is estimated that the region's population will likely double by the year 2050. With such a significant population increase and an already stressed water supply, many more people will likely fall into poverty.

While rural areas have less WASH coverage than urban areas, there is unequal access to WASH services in urban cities, resulting in poor areas being underserved. By 2050, the urban population in sub-Saharan Africa is expected to rise from 414 million to 1.2 billion – with the most growth expected in urban slums or informal settlements. This predicted rise in urban population risks the erosion of WASH progress in urban areas throughout the region. The number of people without access to at least basic services in urban areas has increased in sub-Saharan Africa and across least-developed countries since 2000. The access to water and sanitation in informal living areas is a combination of formal and informal practices, including a variety of actors, such as the state, private actors, NGOs, civil society, and international donors.



Factors that play a role in this disparity of access, including trends such as:



- **Population growth**



- **Migration from rural to urban areas**



- **Climate change**

Low access to education plays a key role in unsustainable water and sanitation practices. Many community members are not aware of the causes of water contamination, the health effects of using contaminated water, or the effects of open defecation or littering. Additionally, local governments responsible for the maintenance and management of the facilities do not have the capacity to manage WASH facilities effectively. The UNDP reports that 30-to-50% of WASH interventions failed after two-to-five years. The Rural Water Supply Network (RWSN) states that in sub-Saharan Africa, between 30% and 40% of installed hand pumps are not functioning. Many reports indicate that efforts to implement WASH are not sustainable, and are abandoned or collapse after a period of time.

An estimated 51% of health facilities in sub-Saharan Africa have basic water services and 23% have access to sanitation services. Two-thirds of

sub-Saharan Africa rely mostly or completely on the surface water of rivers, lakes, and wetlands. Surface water is often highly polluted and unreliable, but a lack of infrastructure results in individuals seeking out unsafe water. About one-quarter of the world's population that practices open defecation live in sub-Saharan Africa, and spend an average of 2.5 days a year looking for a private space to defecate. Poor sanitary conditions result in a vulnerability to a number of water-borne diseases and can lead to death in many cases – it is reported that 115 people die every hour in Africa from diseases linked to contaminated water and poor sanitation.



2/3

of Sub-Saharan Africa rely mostly or completely on the surface water of:

- **Rivers**
- **Lakes**
- **Wetlands**

As we look to the future, a particularly difficult challenge will likely become the primary driver of the region's water scarcity: the increasing climate crises affecting our globe. Currently, climate change has the largest negative impacts on the developing world. This is likely to continue in the future.

According to the World Health Organization, climate crisis will likely take an additional 250,000 lives from malnutrition, malaria, and diarrhea between 2030 and 2050. Historically speaking, developing countries have contributed very little to the causes of climate change but have long felt its impacts. According to the Center for Global Development, sub-Saharan Africa has only been responsible for a single percentage point of historical climate change. Although these regions have had little influence on the number of climate crises affecting the globe today, they are often the least prepared and most susceptible to these crises. According to the Food and Agriculture Organization, an estimated 76% of the 124 million people who face "crisis levels" of acute food insecurity were affected by climate change and its effects. Much of the developing world continues to reside in rural areas dependent on agriculture for sustenance. Increasing climate in these regions leads to droughts and other climate disasters that are leaving large portions of the developing world undernourished and underdeveloped.

Between 2030 and 2050, the climate crisis will likely take an additional

250,000

lives from:

- **Malnutrition**
- **Malaria**
- **Diarrhea**







To celebrate World Water Day, March 22, the Embrace Relief Foundation hosted a thorough and lively virtual discussion of the challenges and potential solutions to the clean water crisis in sub-Saharan Africa in the first edition of its Roundtable Discussion Series.

During the event, speakers and participants sought to accomplish several objectives relating to the current state of water insecurity in sub-Saharan Africa:



01

Discuss the current challenges facing clean water delivery in the sub-Saharan region



02

Deliberate successful existing approaches to the clean water crisis



03

Identify novel solutions to the clean water crisis



04

Identify the gaps and needs to ensure a more equitable future for individuals in sub-Saharan Africa

Speakers and presenters represented a variety of backgrounds and many combined years of expertise, from government officials and public health workers in Africa to advocates for humanitarian aid in the U.S. The speakers sought to give their perspective on water, sanitation and hygiene challenges, and how they intersect with the great global issues of structural poverty, climate change, the COVID-19 pandemic, and more.

The two-hour discussion – which was conducted over Zoom by moderator **Alex Morel**, an Embrace Relief board member and St. John's University professor, and live-streamed across numerous platforms including YouTube,

Facebook, Twitter and LinkedIn – allowed all speakers to make a short presentation on a particular aspect of the WASH issue before answering questions from fellow panelists. A short Q&A featuring questions from viewers concluded the roundtable.



OUR SPEAKERS



- **H.E. Minata Samate Cessouma**, Commissioner for Health, Humanitarian Affairs and Social Development, African Union Commission
- **Luka Matic**, Associate Program Officer for Embrace Relief
- **Group Captain Sadiq Garba Shehu (ret.)**, Senior Special Assistant to the President of the Republic of Nigeria on Humanitarian Affairs
- **Christopher Askew-Merwin**, Policy and Advocacy Coordinator for InterAction specializing in WASH advocacy
- **Felix Kaiza**, Journalist from Tanzania
- **Njoroge Kamau**, Public Health Worker in the Horn of Africa Region

**H.E. Minata Samate Cessouma, Commissioner for Health,
Humanitarian Affairs and Social Development, African Union
Commission, represented by Dr. Benjamin Djoudalbaye:**



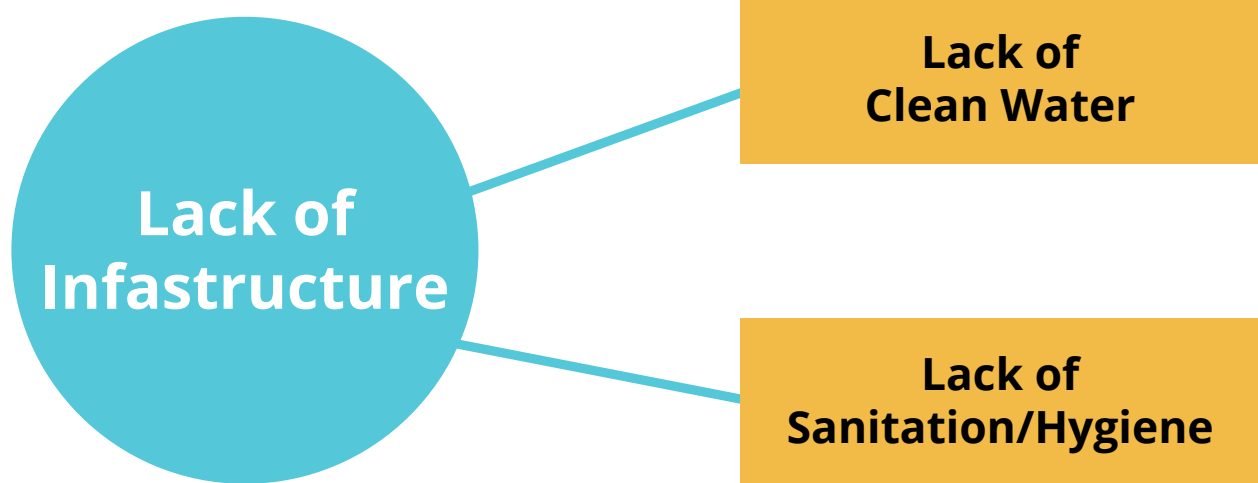
**“ We must
address the
challenge of
infrastructure ”**

Dr. Benjamin Djoudalbaye opened the discussion on behalf of H.E. Minata Samate Cessouma by noting the importance of partnerships in responding to continent-wide health crises.

“As a commission, we don’t go directly to the member states to implement the solutions to these problems,” he said. “But what we can do is ensure coordination, collaboration, and communication, to enable partnerships to respond to the challenges we face. Together, we have the power to improve our situation and the issues we are facing.”


Improving WASH services across Africa is imperative as one critical piece in the fight against all infectious disease outbreaks, Dr. Djoudalbaye said, but especially the ongoing COVID-19 pandemic. Hand hygiene is “a significant element of the WASH framework program” as a protective measure against COVID transmission, he said.

Biggest Challenge For Achieving the African Union's WASH Goals?



"We are dealing with the water-borne diseases that are the consequence of poor WASH, but before we arrive at that level, we need to invest in infrastructure," he said. "If the infrastructure is not in place, people must use polluted water from the rivers [or other sources]. So we need to address the challenge of infrastructure, and that is the biggest challenge the continent is facing."





“We’re looking to provide a long-term solution”

Speaking next and representing the Embrace Relief Foundation, Luka Matic presented a breakdown of the organization’s Clean Water Program and its Fountains of Hope initiative, which have combined to build and rebuild more than 500 water wells in the African nations of Chad and Cameroon, providing a reliable source of clean water to more than a half-million people over the past nine years.

Matic explained that Embrace Relief has worked closely with researchers with the National Water Laboratory of Chad to create an ideal well design that is relatively simple to build, operate and maintain, and which is built to a depth of 45 meters below ground. This depth allows the pipes to reliably filter out harmful bacteria, parasites and minerals from the water. These wells are also powered by mechanical hand pumps rather than by electricity or gasoline, reducing the cost of operation.



FOUNTAINS OF HOPE

An Embrace Relief Project



"Most of the wells we construct or reconstruct are in very remote areas," Matic said. "And we've found that the mechanical wells are the easiest to learn how to repair if a problem comes up so that access to water isn't interrupted. Individuals and community members can learn the basic maintenance and keep the wells up and working."



Embrace Relief's Clean Water Program and its Fountains of Hope initiative, which have combined to build and rebuild more than **500 water wells** in the African nations of Chad and Cameroon, **providing a reliable source of clean water to more than a half-million people over the past nine years.**



Biggest Challenge For Implementing WASH Infrastructure Around the Globe?

"It's a vast area that needs attention focused on it," he said. "Across the world, not only in sub-Saharan Africa, there are communities struggling with improved access to WASH. **It's a lot for single organizations to work towards, and it really requires a concerted effort on behalf of non-governmental organizations (NGOs), policy-makers, and researchers to attack the problem at its root.**"







“Challenges and opportunities in Nigeria”

Speaking next and representing the Federal Government of Nigeria (FGN), Group Captain Sadiq Garba Shehu provided an in-depth look into Nigeria's WASH situation, which has moderately improved over the past several years while failing to hit ambitious targets of universal access.

Out of the country's population of 183 million, 48 percent of Nigerians have access to basic drinking water sources, and just 33 percent have access to sanitation. Just 3 percent of urban Nigerian households had access to piped water on their premises in 2015, a drastic decline from 32 percent in 1990 that reflects the country's rapid urbanization. In rural communities, about 39 percent of households lack access to a basic water supply, and about half have access to sanitation.

The key challenges for universal access, Shehu said, were a combination of growing demand, inefficient service delivery, governance constraints, gender inequality, and weather and water-related risks.

The rapid urbanization of Nigeria has been a burden to the country's 37 State Water Boards, which are responsible for providing water services to urban residents. With high operating costs and low revenues, many urban water systems do not function. (The federal government is responsible for providing WASH access to rural residents, Shehu said.)

"The State Water Boards have limited financial autonomy and are not financially or commercially viable," Shehu

added. "The water is subsidized by the government, but this can be a vicious cycle. The water must be affordable, but you need to get the revenue to run machines and pay workers. Nigerian citizens end up spending an estimated \$700 million every year to obtain water from alternative water providers, which is about 10 times what it would cost to get their water from public utilities."

Moving forward, Shehu described Nigeria's plan to improve WASH access for its citizens, including the construction of 2,300 new water sources, 6,500 new sanitation compartments and hygiene facilities, as well as a national program to eliminate open defecation by 2025.

Shehu also urged organizations seeking to help expand WASH access to consider four crucial points as they search for solutions:

01

Post-construction maintenance strategies for facilities in rural communities

02


The use of solar-powered and mechanical technology, rather than electric/ diesel/ petrol-fed systems

03

Sustainable, context-specific and targeted solutions

04

The nexus of clean water supply sources, girl child education, and gender-based violence



**“This is, at its core,
a question about
protecting us all”**

Christopher Askew-Merwin spoke next on behalf of InterAction, an alliance of international NGOs and partner organizations in the United States that has advocated for humanitarian aid for nearly four decades.

InterAction’s role is threefold, Askew-Merwin said. First, it coordinates efforts to influence governments and other actors to shape global policies. Second, it brings together and represents a broad array of stakeholders. And third, it offers training and other resources to member organizations to help them adapt in a rapidly changing world.

Specific to water, sanitation and hygiene issues, Askew-Merwin described his role in advocating for increased foreign assistance from the U.S. government.

“Much of my team’s work is U.S.-policy-based,” he said. “Our ‘Choose to Invest’ report is our annual funding recommendation for the U.S. international affairs budget. And that’s something that is written specifically for the U.S. Congress, to show how critical foreign aid is, how valuable that budget is, what impacts we are getting with that funding, and what an increase could do for so many millions of people.”

Moving forward, InterAction's WASH Working Group – whose member organizations include WaterAid USA, CARE, the Global Health Council, Save the Children, Habitat for Humanity International, and the U.S. Fund for UNICEF – is fighting for a \$125 million increase in WASH development funding and a refresh of the U.S. Global Water Strategy.

Askew-Merwin said that the group's recommendations include prioritizing equitable access and affordability of water for vulnerable populations, outreach with those vulnerable communities to ensure their local needs are being met, emphasizing the links between water access and climate change resiliency, and emphasizing WASH as a key preventative measure for COVID and any future pandemics.

"The greatest challenge is getting Congress to understand how important this is," Askew-Merwin said. "WASH is one of the few investments where the return on investment is just incredible for the amount of funding you put in. We're talking about lives saved, economic improvements. But that can sometimes get lost on members of Congress and the federal government, because it's difficult to advocate for something that doesn't help U.S. citizens. But this does help U.S. citizens. Because by providing these facilities and making sure that everyone has access to healthcare facilities with hygiene and sanitation, we can reduce greatly the possibility of future pandemics and variant COVID strains. So this is, at its core, a question about protecting us all and helping everyone. The challenge is in getting that message across."

That advocacy has been largely successful in supporting USAID, which in 2020 helped


3.9 million people

receive access to sustainable drinking water and

4.1 million

getting access to sanitation service.





“ Amaizi gaba
mwoyo - water
is the heart ”

Felix Kaiza, a Tanzanian journalist, argued that international aid organizations must embrace a wider array of WASH programs to truly help deliver water access, and all of its associated benefits, to people in developing countries.

“Many international charity organizations, the likes of Time to Help in Tanzania, have so far concentrated on the provision of clean and safe water,” he said. “Others have prioritized the issue of sanitation. This is perfectly OK. It is now time to go into other areas, like supporting community irrigation schemes and aquafarming for the sake of enough food supply and security, integrated with improved nutrition. This is what will go a long way to put in place the fullest intervention for the attainment of targets set in the bag of Sustainable Development Goals.”


Kaiza pointed out that water scarcity issues directly impact six of the 17 Sustainable Development Goals (SDGs), targets set by the United Nations and its member states and designed to be met by the year 2030 in order to ensure a livable, more equitable planet. These six include eradicating poverty (SDG #1), abolishing hunger (SDG #2), promoting gender equality (SDG #5), making cities and human settlements sustainable (SDG #11), combating climate change (#13), and protecting terrestrial ecosystems (#15). All are addressed by ensuring that clean water is accessible and available to all.

"It is here that I remember an observation repeatedly made by my rural mother, who died about three decades ago at the age of 80," he said. "She used to tell me, 'Amaizi gaba mwoyo,' meaning 'Water is the heart.' To her, this resource is more than its conventional concept as a link to life."

In Tanzania, groundwater is a vital source of urban and rural water supply, Kaiza said. He noted that the local village councils and water supply organizations have been effective at building sustainable rural water services, which account for about 50 percent of the groundwater used each day. Managing the supply of groundwater in a sustainable way is one of the chief challenges for the world as its population increases.

"Members and partners of the United Nations Water Council have to sit down and consider all aspects connecting water to life on our planet," Kaiza said. "The resource is a right to man as it is to other animals, plants and insects. Where does one set the equilibrium in terms of availability and its use?"



A photograph showing a group of women and children. In the center, a woman wearing a blue headscarf holds a young child in a blue and white patterned shirt. To the right, another woman in a red headscarf holds a young girl in a yellow and green patterned shirt. Other women and children are visible in the background. The image is used as a background for a quote.

“The opportunity to have the full realization of their potential, and their children’s potential”

Rounding out the discussion, public health worker Njoroge Kamau shared his personal observations from working on the ground in the Horn of Africa.

He began with a poignant story about a woman he met in an Internal Displaced Persons (IDP) camp in the town in Somalia, where he is currently located. Kamau described a conversation he had with the woman, a farmer and a mother of five who fled her original home because the cycles of flooding and drought in Somalia left her farm unviable.

“I asked her, what is the difference between where she is now and her original home? What are the good and bad in both of the places?” Kamau said. “One of the things she said is that access to water is something she has here that she didn’t have back home. She had water, but it wasn’t quality and potable like it is in the camp. She’s grateful to have drinking water here. But being in a camp, she also doesn’t have a livelihood, and there isn’t enough food for the children. So it is a conundrum. She has something good, but she is missing something else.”

The child mortality rates:

**Kenya:
41.87 deaths per 10000
children under 5**



**Somalia:
114.62 per 1000**

which is driven in large part by

- Diseases
- Malnutrition

Fueled by a lack of clean water,
sanitation and hygiene

“Whether it is in urban areas or rural areas, it’s a story you find in many places in Africa,” he added. “Families who are marginalized in society, who don’t have the opportunity to have the full realization of their potential, and their children.”

Kamau said this was a common situation he’s come across in his work in various East African countries, where a lack of water access is

widespread and damaging, especially as climate change wreaks havoc on the water supply.

Access to water, and maintenance of water sources, is a particular problem in many of the urban locales he’s worked in, including Nairobi, Kenya’s capital. There, approximately 60 percent of residents live in “informal settlements,” which are often not serviced by the public utility and service companies. Those who do get service in these areas pay as much as ten times as much as other water-users in Nairobi.

Kamau urged targeted governmental policies to help mitigate the costs for vulnerable people, and for citizens to hold political leaders to task to help subsidize the cost of infrastructure investments and maintenance.

And for those seeking to help people in Africa access clean water, Kamau asked them to sit down with local leaders and listen to what was needed in those communities. Each community will have different needs, and will need to be able to sustain any improvements that are made.

“No organization has the resources to maintain a water system forever,” he said. “One of the ways to ensure sustainability of the water system, whether in Africa or any other place, is to involve the community, so that they can own the infrastructure itself.”

Looking Forward:

How Do We Go About Ensuring A More sustainable future for the people of sub-Saharan Africa?



As we look forward to the future of sub-Saharan Africa, we must reconcile with the truth that if we do not increase our focus on ensuring the development of sustainable WASH infrastructure throughout the region, many individuals and communities will fall deeper into poverty and suffering. During Embrace Relief's Roundtable Discussion, all speakers, whether they be government officials, public health workers in Africa, or advocates for humanitarian aid in the U.S., shared this common understanding.

In the coming decades, the challenges associated with climate change and population growth will only make the goal of clean water for all more difficult.

To be better prepared for the coming challenges associated with the development of sustainable WASH infrastructure, three crucial points need to be considered;

- 1. Sustainable, context-specific, and community-level targeted strategies,**
- 2. Preemptive planning for post-construction maintenance strategies for infrastructure throughout the region**
- 3. Concerted collaboration from relevant stakeholders at all levels**

It has been made clear by the remarks from many of the key stakeholders present at Embrace Relief's Roundtable Discussion that these three considerations will allow for more sustainable and effective solutions to be crafted.

**Improved
access to
clean water
has the ability
to:**

**Prevent 90%
of the more
than 400,000
annual child
deaths associated
with diarrheal
disease**

Aside from the positive health impacts, improved access to clean water will have large, positive effects on childhood education. As many children around the world go to school malnourished and ill, they are unable to focus in the classroom. With improved access to water and sanitation, these children will be able to attend school more frequently and perform better as students. Finally, perhaps one of the most important benefits of improved access to WASH will be the improved status that women and girls are able to achieve. Currently, young girls and women are primarily responsible for fetching water for their families. This long and difficult journey prevents girls and women from maintaining attendance in school.

By providing a source of clean water in their communities, we can help to relieve the burden that women and girls face and improve their chances of remaining in school and pursuing higher education.



Embrace Relief's Clean Water Initiative

At Embrace Relief, we have chosen to approach the challenges associated with the global water crisis on the sub-continent by constructing new water wells and reconstructing derelict wells throughout the region. Embrace Relief's Clean Water Initiative involves the construction of water wells in the sub-Saharan countries of Chad and Cameroon. Under the Clean Water Initiative umbrella, our Fountains of Hope Initiative seeks to reconstruct nonfunctional water wells in those two countries.

These initiatives have been able to provide a clean and safe source of drinking water to over

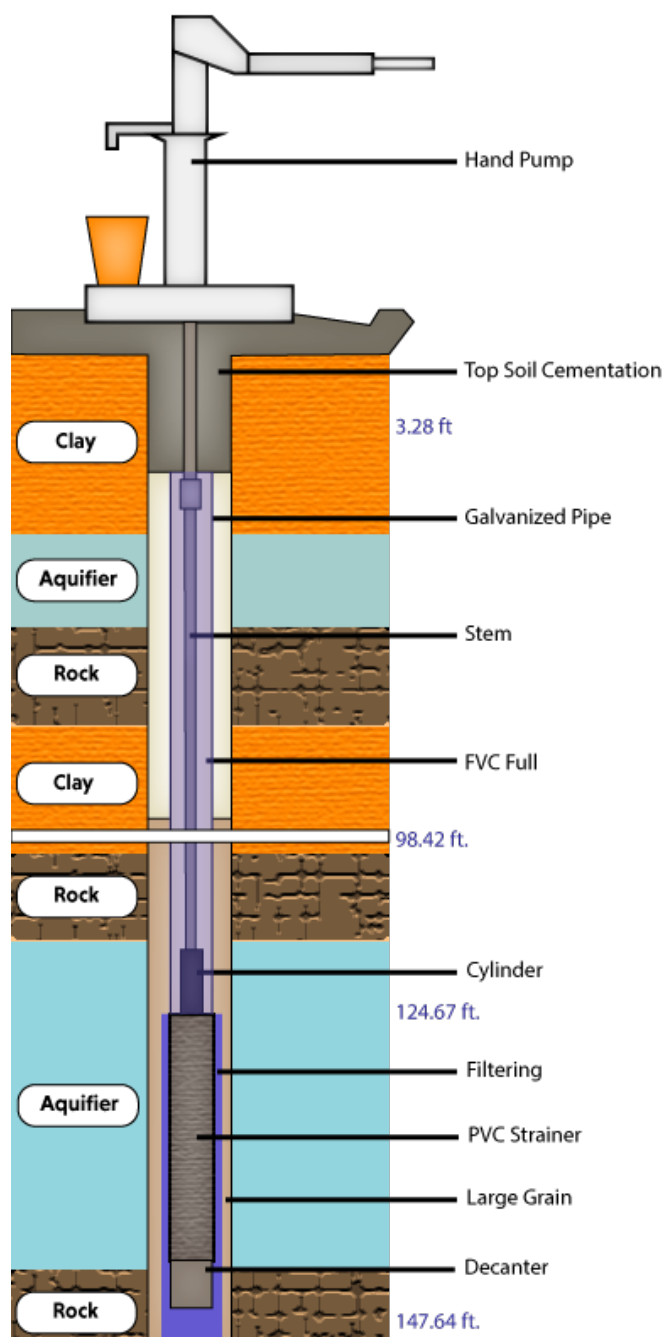
500,000

individuals in the region

Embrace Relief's well-construction process has been developed through extensive research and practice. To start, Embrace Relief ensures that our water wells are dug to 45 meters. We then place galvanized pipes along with a full forced vital capacity to ensure that our wells are able to pull water to the surface effectively and efficiently. We include a multifaceted filtration system that removes sediments and other harmful objects from the groundwater. Finally, we cement the top of the wells to ensure that no outside contamination can take place. This ensures that the wells we construct and reconstruct are able to provide clean water to the community for many years to come.

Embrace Relief has chosen to dig our wells to a depth of 45 meters after extensive research and collaboration with the National Water Laboratory of the Republic of Chad. One of the issues with shallower wells is their inability to filter out parasites and harmful bacteria. As we go deeper, the ground acts as a natural filtration system eliminating bacteria and parasites. Digging deeper wells also provides more security in water resources.

Shallower wells often dry up more quickly because the natural aquifers they are pulling from are not large enough to support the needs of the community. We found that a depth of 45 meters reduces these issues.



Embrace Relief's goal for our Clean Water Initiative is to provide at least

100

communities in the region with improved access to clean water every year.

In doing so, we will be able to provide improved access to clean water to over

100,000

individuals per year.

To ensure the sustainability of our Clean Water Initiative, Embrace Relief guarantees all of its wells remain operational by providing service and maintenance for a minimum of five years after their completion. This concerted effort among Embrace Relief, its partners, volunteers, and donors provides the communities we serve with an uninterrupted source of clean water for many years to come.





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