

Chad Water Wells Needs Analysis



“ Even though **Chad** is the *fifth largest country in Africa*, it is one of the world’s **poorest** countries. ”

Issues that surround Chad include:

- Poverty
- Conflict
- Climate Crisis
- Hunger
- Environmental Degredation
- Rapid Deforestation

The Problem

A large majority of the Chad population depends on **farming** and **livestock** in order to live. Farmers and herders have a hard time keeping up with their labor due to **sporadic rain patterns** and a **lack of clean water**, which makes it difficult for them to cultivate food. According to the World Bank, about **40% of children under the age of five** suffer from **stunted growth**, which is due to **chronic malnutrition**, and the likelihood of receiving a basic education is limited.

Villages on the outskirts of the capital have no guarantee that the water is sanitary to use and drink



Embrace Relief

- Conducted various water questionnaires in Chad to find out more information about the needs of the people in the villages. These surveys were conducted in *Tileh, Regat, Tinetbaya, and Zawiya*.
- We were able to collect information about their nearest water source and *traveling distance and time, dry and rainy seasons, village population* (adults and children), and their thoughts on how a community clean water source can improve their lives.
- The surveys highlighted how much the rainy season and lack of potable water affected them. According to participants' responses, the average dry season lasts 10 months a year, from October to July.

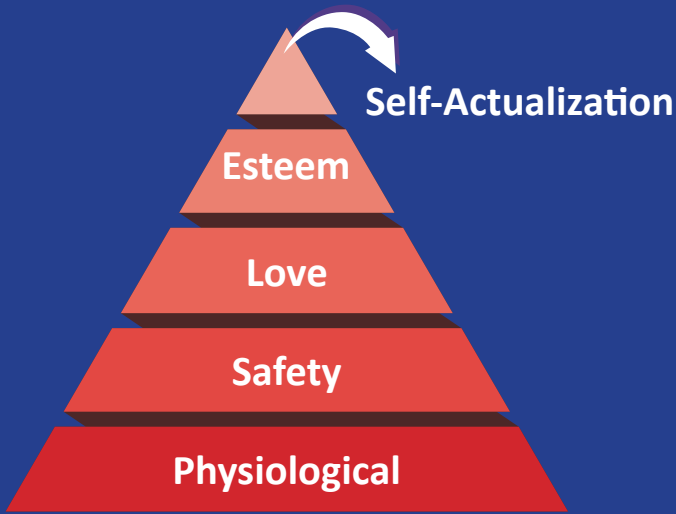


Objectives

- Improving the quality of water for communities.
- Promoting health and sanitation to prevent contamination of water related diseases.
- Increasing awareness of the impact that water has on national development.

Based on the questionnaire, citizens reported that the lack of water is affecting the village when it comes to meal preparation, agriculture, diseases being spread, and education. With poor water conditions and inaccessible resources, water wells would greatly benefit and assist the people in these countries.





Maslow's Theory

Abraham Maslow developed his theory, Maslow's Theory, in 1943 in his paper "A Theory of Human Motivation." He suggested that his theory, better known as Maslow's Hierarchy of Needs, explains the different levels of needs that are necessary to accomplish to survive as a species. There are five categories which are, (from bottom to top) physiological needs (food, water, warmth, rest), safety, belongingness and love, esteem, and self-actualization.

“ **Without being able to have the basic needs of food and water, people are not able to stay healthy enough to attend school, get a job, and bring home an income.** ”

Economic Development

Education and Economy

Without clean water, economic development cannot proceed. **The lack of clean water interrupts the opportunities for obtaining a good education to maintain a career and be financially stable.** Based on the surveys, Embrace Relief was able to see that nearly all of the villages have a significantly large child population. Only 7 out of the 27 villages reported that children attend school, emphasizing the need for education in those villages. From the information from the surveys, Embrace Relief was able to recognize that villagers lived 3km (1.8 miles) to more than 5km (over 3 miles) from their nearest water source, allowing the travel time to range from 30 minutes to more than 4 hours. **Water wells would make it easier for women and children to bring home water and have time to focus on their own educational and career development.**



WASH

Chad contains districts such as Yao and Danemdaji, which have the country's lowest access to WASH services. WASH is an acronym that stands for water, sanitation, and hygiene. Less than half of the population has access to clean water in Danemadji and Yao, and **less than 7% of people have access to adequate sanitation in both districts** ("More than 55,000 people have access to safe water in the most underserved districts in Chad"). WASH initiatives are programs that were established and mandated by the United Nations in 1981 and 2010 that help developing countries. Being a focus of the Sustainable Development Goal 6, **WASH promotes public health, primarily in rural African villages**. They focus on including governments, nonprofit organizations, and their partners in support of providing rural villagers with tanks to store clean water in their homes, an effort that significantly benefits locals. It gives communities safe water and hygiene education, leading to a **reduction of illnesses and deaths and improves socio-economic development**.



Health & Sanitation

Without water wells, villagers have to rely on drinking water from **unprotected dug wells and springs, surface water from rivers and canals, tanker truck water, and vendor-provided water**. Water from these sources is contaminated and brings along major infectious **diseases such as cholera, Guinea worm disease, typhoid, and dysentery**. Amongst these diseases also includes salmonella, hepatitis A and hepatitis E ("Water").

Enforcing WASH principles along with clean water from water wells can **improve the world's social, economic, political, and educational development**. People and their communities would be able to focus more on practicing hygiene skills to be able to **reduce the number of diseases being spread, prevent illnesses, have clean clothes and homes, and improve the past contamination during meal preparation and eating**. With better water resources and management, the world can better focus on all aspects of development.





Our Approach

Water scarcity is prohibiting the opportunities of the youth and community, emphasizing the need for water wells in the area. So far, **Embrace Relief has been able to open over 315 water wells in several countries, providing approximately 315,000 people with access to clean water and improving their health and living conditions, and we are looking to keep building more.** From water well questionnaires, **Embrace Relief learned that with nine months of the dry season and dirty water, the citizens are suffering from malnutrition, a plethora of waterborne diseases, unsafe transportation conditions, and insufficient resources to advance education and careers.** We learned that for the villagers, the water wells are vital for meal preparation, agriculture, sanitation, and state of health. We have performed previous field research, which has helped us evaluate the precise amount of water wells and depth and the ability to ensure the sustainability and safety of the communities served. To be able to provide long term while staying clean and endure climate change, the water wells should be at least 45 meters deep. **Deepening a well is one of the most recommended solutions to ensure a drought-resistant water supply because they cannot go dry during an arid period and bring a large volume of water to villages.**

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