Baseline Assessment
Badhan Water Supply

Time Period from 17 - 23 January 2023
Introduction

About Adeso
Adeso is a vibrant African organization with a vision of a world independent from aid and which relies on the resourcefulness of its people. Our mission is to work at the roots of communities to create environments in which Africans can thrive. Working alongside African communities to co-create a new story for Africa—a future that is shaped by their values, powered by their own resourcefulness, and built on their capabilities.

Water, Sanitation and Hygiene Background within Puntland
Somalia has continued to face serious water access challenges due to acute and protracted droughts. With multiple below average and failed rainy seasons, much of the country is experiencing extreme water shortages and with a looming famine along with continued dry conditions predicted for early 2023, it leaves an estimated 8 million people in urgent need of food, water, and support. The impact of climate change continues to disrupt markets and the economy, destabilizing the living conditions and livelihoods of both urban and rural pastoral communities in Northern Somalia, and has been one of the highest driving forces of widespread displacement across the country with almost 2 million people having been displaced since January 2021. Extreme water shortages have limited the capacity of communities to meet their basic needs, and many pastoralist communities have reported a high number of livestock deaths and drought induced disease as a result.

According to Puntland’s Health and Demographic Survey (2020), access to water if readily available within households accompanied by better sanitation is crucial in preventing diseases such as dysentery and diarrhea yet less than 30% of households in Puntland have access to piped water in their home. While 71% of households in urban areas have access to improved water sources for drinking, only 21% of rural households and 37% of nomadic households have access to safe drinking water. In the Sool region, only 21% of households have access to improved water for drinking.

The report further states that a large number of households in Puntland still need access to water. Fifty-eight percent of households in Somalia used an improved source for drinking water but 19% of households travel 30 minutes or more to get water.
Treatment of water is also limited as only 8% of households in Puntland treat their water before drinking it with nomadic people barely using any treatment methods. Additionally, sanitation is also limited with only 54% of households in Puntland having basic sanitation services that would be considered as improved toilet facilities. In urban areas, improved sanitation facilities are at 77% while in rural areas the number stands at 68%. However only 1% of nomadic households have access to improved sanitation facilities.

Acknowledgments

Partnering with the Center for Disaster Philanthropy, this project will act as a pilot whose findings will enable Adeso to develop a water social enterprise that will provide a long-term, affordable and more sustainable solution to water security, resulting safe and clean water that will improve food security and livelihoods, as well as measure impact and scalability.

About Durdur Water Enterprise

Durdur Water Enterprise, a social enterprise subsidiary of Adeso, addresses water insecurity challenges in rural and remote parts of Somalia. Durdur’s business model is to drill boreholes, treat the borehole water, and pipe a sustainable supply of water directly to homes, schools, health clinics and businesses. With the revenue made from providing this water service, Durdur’s team will replicate these water distribution accounts throughout rural Somalia.

Across the duration of a year, Adeso was able to procure a highly sophisticated drilling rig, its components, the trucks to carry this equipment, and the borehole supplies that arrived in Somalia in October, 2022. With the current cost for boreholes many times costing more than USD $100,000 to dig just 200 meter shallow wells that oftentimes dry out extremely fast, the rig will allow Adeso to independently drill for water up to 750 meters deep and pipe it directly to health facilities, schools, homes, businesses and centralized points, providing the entire community access to clean water.
Baseline Assessment

This Baseline Report presents the findings of a water supply baseline evaluation implemented by Adeso with support from the Center for Disaster Philanthropy, drawing on qualitative and quantitative data collected in a one-week period in January 2023 from neighborhoods in Badhan, Sanaag, Puntland, Somalia.

The main objectives of this baseline assessment were to collect and document information on the current state of water in Badhan; as well as the quality of life and general well-being of communities affected by acute and protracted droughts.

This report details the following specific objectives of the baseline survey were:

To identify the real status and information of community members in Badhan, Sanaag, Somalia

- Current State of Badhan
- Current Water Uses
- Current Water Condition
- Water Challenges
- Current Hygiene and Sanitation Conditions
- Household Decision Making and Gender Dynamics
- Household Expenditures

400 Households
6 Focus Group Discussions
3,396 People
Methodology

The baseline survey design used a mix of quantitative and qualitative methods to establish baseline values and characterize the current situation regarding quality of life and general well-being of communities. The household-level quantitative survey was applied to all community members in five neighborhoods [Geeldoora, Golis, Iftin, Horseed and Waaberi] in Badhan, Sanaag, Somalia.

The survey also used focus group discussions (FGDs) in which a total of six were conducted across Badhan. This consisted of semi-structured interviews covering topics including water supply and sanitation. The attendees at the FGDs were representatives of the community, personnel from mosques, schools, the university, hospitals and local small businesses in Badhan.

The data was collected from January 17th to January 23rd of 2023 by qualified enumerators who successfully collected information from 400 Badhan households. Prior to data collection, the team of enumerators were trained on the basics of the baseline survey. This was followed by pretesting exercises to familiarize the enumerators with the eventual survey work. The Adeso team guided and supported the enumerators and their supervisors were there to help resolve minor difficulties. After the survey work was completed, the data was uploaded to the Adeso Kobo Server, Adeso’s data collection tool.

Survey Coverage

The survey covered a representative sample size of 400 households with confidence level of 95% and confidence interval of 5%. The study was done through systematic random sampling of the five targeted communities / villages located within Badhan. Since no formal population figures exist for Badhan, a stratified sample was taken whereby households were selected at random from each of the five neighborhoods: Geeldoora, Golis, Iftin, Horseed and Waaberi.
The following expected limitations faced during the baseline survey. Firstly, the language barrier: the survey questions were administered in English, however communities where the survey was carried out predominantly speak Somali. Enumerators had limited understanding and/or comprehension of the English language and that might have affected interpretation of the survey questions. Therefore, it is likely that cross-translation errors could have compromised the quality of the data collected.

**A full list of the number of surveys per neighborhood is shown below.**

<table>
<thead>
<tr>
<th>Neighborhood Name</th>
<th>Household Distribution Per Neighborhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geeldooras</td>
<td>90</td>
</tr>
<tr>
<td>Iftin</td>
<td>110</td>
</tr>
<tr>
<td>Waaberi</td>
<td>90</td>
</tr>
<tr>
<td>Horseed</td>
<td>60</td>
</tr>
<tr>
<td>Golis</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400</strong></td>
</tr>
</tbody>
</table>

**A full list of the number of surveys per focus group discussions is shown below.**

<table>
<thead>
<tr>
<th>Group Description</th>
<th>Male</th>
<th>Female</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alnur Secondary School</td>
<td>7</td>
<td>4</td>
<td>January 17</td>
</tr>
<tr>
<td>Darul Shifa Hospital Badhan</td>
<td>4</td>
<td>5</td>
<td>January 17</td>
</tr>
<tr>
<td>Somalia University Badhan Branch</td>
<td>5</td>
<td>2</td>
<td>January 18</td>
</tr>
<tr>
<td>Badhan General Hospital</td>
<td>5</td>
<td>4</td>
<td>January 18</td>
</tr>
<tr>
<td>Small Businesses Group</td>
<td>6</td>
<td>7</td>
<td>January 19</td>
</tr>
<tr>
<td>Masjil Abdalle Hirad Badhan Masjid (Mosque)</td>
<td>6</td>
<td>2</td>
<td>January 19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td>(57.89%)</td>
<td>(24) 42.10%</td>
</tr>
</tbody>
</table>
Key Findings

Water is not reliable, accessible nor affordable:

- Three main challenges that were highlighted with regards to water were reliability, affordability and accessibility. Other problems raised were water quantity and quality.
- Hard water was most readily available in areas where surveys were conducted but over 70% of respondents looked for soft water for drinking. Hard water contains metals and is mostly used in cleaning.
- Most respondents mentioned that they get water from boreholes which are up to 30 kilometers away.
- USD$92 was spent monthly per household on water. The cost of water was higher than the average monthly expense on medicine, rent and repairs.

Challenges with Water Quality and Quantity

- Due to the lack of adequate rainfall, waterborne diseases are widespread. These illnesses often include diarrhea, typhoid fever, and dysentery.

Badhan in Context

- Average household size in Badhan is larger than average across the country (8 people per household, though average throughout Somalia is 6 people).
- Employment opportunities for Badhan residents are bleak. With the absence of small industries and the lack of a coastline, most employed people in Badhan work for small businesses, in construction for example.
Current Water Context through imagery

Photo 1: A berked or water storage that is usually underground at homes, and any place that needs access to water. Many times the water that is put into these are: from water tanker deliveries and opportunistic rainwater harvesting, so debris, silt and other contaminants can usually be found on the bottom layer.

Photo 2: A man shown filling water for the office from the berked. Berkeds can vary in size, but can typically hold 5,000 liters (25 barrels) to 10,000 liters (50 barrels) of water.

Photo 3: Same berked pictured in Photos 1 and 2; with a water tanker refilling the berked with trucked water.

Photo 4: Water bladder with a 6,000 liter capacity. Many families and communities in remote places use these water bladders, but face problems with vulnerabilities including: destruction from animals (both domesticated and wild).

Photo 5: Sand and drought in the area. The area is dry and dusty, emphasizing the lack of water sources in the area.

Photo 6: Photographs showing the current water context through imagery.
Current Water Context through imagery (cont'd)

Photo 5: Rainwater harvesting from the roof of a building that is incorporated into a berked.

Photo 6: A shallow well provides water for camels and other livestock in remote areas.

Photos 7 & 8: Show typical water voucher registration for vulnerable community members. This is done through registration and sending the cash via mobile phones. The average cost of 1 x 200 Liter barrel of water in 2022 peaked at $8/barrel, an amount that many cannot afford and brings the monthly costs of water for an average household over $100.
Baseline Findings

General Information About Badhan

Badhan is located in Sanaag region of Puntland. It is a semi-arid area. According to the District Council and numerous discussions with town residents, Badhan has a current population from between 30,000 to 35,000 people, with the surrounding towns and villages making up another 10,000 to 15,000.

Though Badhan is an urban area, its context sits in a more semi-urban definition where they are in between urban and rural. Nomadic people do not have permanent settlements, and in Somali culture they generally move from place to place in search of pastures, while rural people live outside towns in small villages or settlements, depending on farming or livestock. They have low population density but these can be permanent settlements.

Seasonally, as in many parts of Somalia, coastal communities move inland and settle for a time in Badhan, as well as many other towns in Sanaag and the greater Puntland region. So thousands of people could also be temporarily living in Badhan at any given time. There is also an Internally Displaced Persons (IDP) camp located roughly 30 minutes from Badhan with around 800 people living there.

The team collected data on numbers of schools and students (13 primary and secondary schools, a university, as well as private and unregistered quranic schools) and the current number of students is around 5,300. (See details on next page.)

There are 4 main hospitals and 3 Maternal and Child Health Clinics as well as a few Dental and Urgent Care Clinics.

### Badhan Hospitals, Health and Dental Clinics

<table>
<thead>
<tr>
<th>Hospital/Medical Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badhan General Hospital</td>
</tr>
<tr>
<td>Alshifa Hospital</td>
</tr>
<tr>
<td>Alrahma Hospital</td>
</tr>
<tr>
<td>Geeljire Hospital</td>
</tr>
<tr>
<td>1 Somali Youth League Clinic (for urgent care, emergencies, and first aid services)</td>
</tr>
<tr>
<td>3 Dental Clinics</td>
</tr>
<tr>
<td>3 Maternal Child Health Clinics</td>
</tr>
</tbody>
</table>
### Badhan Schools and Numbers of Students

<table>
<thead>
<tr>
<th>School Name</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badhan Secondary School</td>
<td>+/- 450</td>
</tr>
<tr>
<td>Alfurqan Secondary School</td>
<td>+/- 450</td>
</tr>
<tr>
<td>Alnor Secondary School</td>
<td>+/- 350</td>
</tr>
<tr>
<td>Alraha Primary and Secondary School</td>
<td>+/- 250</td>
</tr>
<tr>
<td>Alfurqan Primary School</td>
<td>+/- 1100</td>
</tr>
<tr>
<td>Alnor Primary School</td>
<td>+/- 700</td>
</tr>
<tr>
<td>Iqra Primary School</td>
<td>+/- 95</td>
</tr>
<tr>
<td>Tayo Primary School</td>
<td>+/- 110</td>
</tr>
<tr>
<td>Salahudin Primary School</td>
<td>+/- 240</td>
</tr>
<tr>
<td>Kaahiye Primary School</td>
<td>+/- 180</td>
</tr>
<tr>
<td>Bright School</td>
<td>+/- 220</td>
</tr>
<tr>
<td>Star Leadership Academy</td>
<td>+/- 130</td>
</tr>
<tr>
<td>Somali National University (Puntland Branch)</td>
<td>+/- 400</td>
</tr>
<tr>
<td>Quranic Schools (unregistered)</td>
<td>+/- 650</td>
</tr>
<tr>
<td><strong>TOTAL STUDENTS</strong></td>
<td><strong>5,325</strong></td>
</tr>
</tbody>
</table>
General Household Information

A total of 400 households took part in the survey and 100% of questionnaires were completed. On average, households in Badhan reported a household size of 8.3 members (range 1-20). According to the Puntland SHDS (2020), the average hold size is 6 hence household average is more in Badhan. This represents a total of 3,339 people. In Badhan, most of the families are intergenerational, usually 5 can be children. In Puntland, 55% of households members are below the age of 15.

<table>
<thead>
<tr>
<th>Number of Households Interviewed</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Female Respondents</td>
<td>368 (92%)</td>
</tr>
<tr>
<td>Average Age of Respondents</td>
<td>41</td>
</tr>
<tr>
<td>Number (%) HH Members – Adults</td>
<td>(1419) 44%</td>
</tr>
<tr>
<td>Number (%) HH Members – Children</td>
<td>(1807) 56%</td>
</tr>
<tr>
<td>Average Age of Head of Household</td>
<td>46</td>
</tr>
<tr>
<td>Average Household Size</td>
<td>8.3</td>
</tr>
<tr>
<td>Range of Household Size</td>
<td>1-20</td>
</tr>
<tr>
<td>Number of Female Headed Household</td>
<td>(186) 46.50%</td>
</tr>
</tbody>
</table>

As seen in the table above, the percentage of females (92%) 368 made up the majority of respondents, with men accounting for only (8%) 32. Female-headed households accounted for 46.5% of the 400 households surveyed.

The results indicate that more than half (56%) of the respondents reported that their homes had children while adults only made up 44%.
The majority of those surveyed reported that men were the head of households at 51.3%. A recent report in Puntland found that 31% of households are headed by women, out of these, 33% of urban households, 38% of rural households and 22% of nomadic households are women led (Puntland SHDS, 2020). The average size of households is 8.3 members, according to the Puntland SHDS (2020), the average household size is 6 hence average is more in Badhan.

As seen in the figure to the left, more than half of the respondents (75.3%) stated that they own their home, while 22.3% stated that they rent and 2.5% stated that an informal settlement in this situation would be a sheet metal rooftop dwelling.
Overview: Water Challenges

Badhan, in the Sanaag Region of Somalia has faced major water access challenges throughout the years and is among one of the worst drought affected areas in the country. The availability and accessibility of clean and safe drinking water is extremely limited, and in times of an unforgiving drought, the price of water that is available often skyrockets from $3 to $8 per 200-liter barrel - a price that many cannot afford.

In the midst of a fifth failed rainy season, increasingly more households are relying solely on water trucking for their daily water needs. As a ‘semi-urban’ district, communities across Badhan receive their water through the process of ordering by water truck, whereby a household member - usually women - would place an order for water over the phone and this will be delivered directly to their homes by a water tanker. Generally households have a berked (water storage) directly in their house where they can capture rainwater (opportunistically) and store the water tanker water. Berkeds can vary in size, but can typically hold 5,000 liters (25 barrels) to 10,000 liters (50 barrels) of water.

What are the main problems you encounter as far as water supply is concerned?

The top three challenges with regards to water in Badhan are:

1. Reliability;
2. Affordability, and
3. Accessibility. (Respondents reported that water is trucked from areas more than 30 kilometers away.)

Other problems raised in focus group discussions were water quantity and quality.

As the drought intensifies, it is resulting in more and more families needing to rely on water trucking as their main source of water. In times of extreme water scarcity, the cost of water skyrockets, leaving families unable to afford and access quality water.
Water Challenge: Reliability

In Somalia, high poverty rates and absence of proper drinking water systems opened doors to public-private partnerships, resulting in price gouging of water which is often low in quality. At times of worsening drought conditions and increasing demand for water for water trucking services, reliability decreases whilst cost significantly increases. As businesses aim to meet the demands, it is not uncommon for a business to be serving a location one day and has moved on the next, without prior warning - leaving vulnerable families with little access to water.

How often would you say you worry about not having enough water to meet all of the household's daily needs?

Water scarcity is the most serious problem facing rural Somali communities across all livelihood zones. According to the findings, nearly half of the households are almost anxious about having water. Water price doublings and increasing water shortages are common indicators of this, owing primarily to water catchments drying up during the dry season.

In the past 7 days, have you or anyone in your household not had enough water to meet your daily needs?

67% of survey respondents mentioned that either them or anyone in the households had not had enough water to meet their daily needs in the past 7 days preceding the survey.
Water in Somalia is largely regulated by the private sector at high prices forcing some families to travel far for water and rely on open wells that are unsafe (UNICEF, 2022). Private organizations and non-governmental organizations as a result tend to rely on water trucking. Some households and NGOs will however construct berkeds to fill water in for various uses. It is important to note that most water in berkeds is trucked in unless it is collected from rain fall. This area of implementation is experiencing its fifth failed rain season, making rainwater collection extremely unlikely. This water in the berkeds is frequently trucked in for these houses, making it a staggering figure that 99.7% virtually 100% of households in Badhan, Sanaag get their water trucked in.

“We learned very quickly that with no water, comes no school. School attendance become very, very low during droughts due to lack of water in homes. In Badhan school attendance becomes even lower during these times. I try to call many parents to find out home water situations but it is usually the same for all families.

Now though, thanks to Adeso, students can come to school without worrying for water.”

– Mohamud, School Principal
Water Challenge: Quantity

How much water does your household use per week?

If we analyze the graph above, it shows that 31% of households surveyed use between 201 liters and 400 liters per week. If you take the average number of people in a household (8) and divide it by 400 liters per week, you get 7 liters per day per person.

$$\frac{400 \text{ Liters}}{8 \text{ people in a household}} = \frac{50 \text{ liters per week}}{7 \text{ days in a week}} = 7 \text{ liters per day per person}$$

Sphere's Standards are a minimum of 15 liters per person per day

Because water was not affordable, households are drinking far less than the SPHERE minimal levels. Water scarcity affects hospitals, schools, livestock and households alike.
Water Challenge: Affordability

As stated in the Introduction, the price of water can often skyrocket during lean times. In Badhan this is demonstrated from the general price of water being $3 per 200 liter barrel to increasing drastically to $8 per 200 liter barrel - a price that many cannot afford.

Cost of Water

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you pay for water, how much do you pay per barrel (200 Liters) before drilling of Adeso Water Enterprise boreholes? (Average, in $USD)</td>
<td>$7.48</td>
</tr>
<tr>
<td>If you pay for water, how much do you pay per barrel (200 Liters) after drilling of Adeso Water Enterprise boreholes? (Average, in $USD)</td>
<td>$3.33</td>
</tr>
<tr>
<td>Average Amount Spent on Water Monthly, in $USD</td>
<td>$92.45</td>
</tr>
</tbody>
</table>

Most households spend between USD $50-$99 on water every month.

62% decrease in the cost of water per 200L barrel

After the drilling of the boreholes were complete, the cost of water reduced from $7 to 8 to between $3 and $4 for a 200L barrel.

The reduction of the price of water meant that people - particularly women - had an increased purchasing power and were able to spend their income on buying more water.
Current Water Usage

Currently, Badhan relies on local shallow wells, and boreholes from further than 30 kilometers, and opportunistic rainwater capture.

Main Water Uses

- Drinking
- Cooking
- Cleaning
- Washing Clothing
- Livestock
- Ablutions

“We used to travel long distances and pay $8 per barrel 2 months ago, now we pay $3 per barrel. Affordable water means improving our living standard for the whole family, especially our access to water for drinking, cooking, and increasing our financial income, and having more time to spend with family, on education, or work.”

– Roda, Mother of 9, Badhan

Roda is a prior Cash for Water participant. Many households have previously benefited from the Cash for Water initiative, a standard humanitarian effort. Roda has shared with us though that such programs would not be required if families could easily access affordable water. Roda and her family no longer rely on water vendor loans as she can afford clean, high quality water with thanks to the introduction of Adeso’s water social enterprise in the region. Roda will soon have piped water to her home and her family and children will no longer need to leave the house and collect water.
Current Water Quality

Adeso’s team conducted two rounds of water sample testing in June 2022 (samples taken from water trucks that transport water from Shimis borehole and Xubeera borehole outside of Badhan) and in December 2022 (from both of Badhan’s boreholes that were drilled by Adeso/Durdur). Each borehole sample tested “failed” or did “not comply” to multiple World Health Organization’s (WHO) standards.

The lab results for the boreholes drilled by Adeso showed that the Total Dissolved Solids were above the maximum threshold according to World Health Organization’s (WHO) standards. Anything above 1,200 parts per million (PPM) of TDS is considered too high. The range of the boreholes tested were 2,220 to 11,021 PPM. Total Dissolved Solids (TDS) is an abbreviation for the total concentration of dissolved chemicals in drinking water. TDS is made up of inorganic salts and a trace of organic stuff. Positively charged cations (calcium, magnesium, potassium, and sodium) and negatively charged anions (carbonates, nitrates, bicarbonates, chlorides, and sulphates) make up inorganic salts. Typically in arid parts of Puntland, the borehole water is described as “hard” water, with high concentrations of calcium and magnesium. The boreholes tested with an analysis of calcium ranging from 570 mg/L to 739 mg/L with the recommendation being below 150 mg/L; and an analysis of magnesium being 126 mg/L to 1,090 mg/L; and with the recommendation being less than 100 mg/L.

Please see attached as an Annex the Water Tests.

Adeso plans to purchase a Reverse Osmosis Water Treatment Plant to clean the water, removing the high concentration of TDS and turning the water from hard to soft.

Do you treat your water to make it safe?

71% of households do not treat water to make it safe. Water treatment is important in improving the quality of water by removing or reducing substances that are considered harmful. It is also key in reducing the likelihood of water-borne diseases that might might come from unsafe water (WHO, 2023).

Current Water Treatment Options

The only option currently available for water treatment is Aquatabs effervescent tablets. These tablets can kill micro-organisms in water to prevent cholera, typhoid, dysentery and other water borne diseases. These are given out during humanitarian interventions and can be bought, but many choose to not buy them, as an extra household expense.
**Current Overview of Sanitation and Hygiene in Badhan**

Acute shortages of water, strategic water source breakdown, and poor water quality have all raised the price of access to water for rural populations. Increased water prices are a major cause of displacement for rural Somali people in hard-to-reach places. Water is neither regulated nor accessible to most areas, and its safety cannot be guaranteed. Some water berkeds can be contaminated and unsanitary, resulting in poor sanitation and disease transmission.

There are sewage lines, but they are unmanaged. Water is flushed down the toilets using buckets. There are only a few houses and a hotel that can flush their toilets. Focus group talks have addressed the importance of water and sanitation for hospitals, particularly the maternity ward, and students to guarantee that illnesses are not spread.

"A lack of water makes the hospital unhygienic and a place where no one can be received. Now the price is lower, and the delivery time is faster - water is available anytime now. This is so important for the work of our hospital."

– Dr. Mohamed, Shifo Hospital Manager

For the hospital to function, water is essential. The hospital conducts routine surgical treatments, has an emergency room, and a maternity wing. They can store 20 barrels (4,000 liters) of water at a time. After less than a month, these water reserves are gone. Mohamed shared that water is most critical on the maternity ward. Mothers need water to shower and wash their hair and feel clean. The newborn babies are bathed. The process uses a lot of water to clean, wash, and sterilize the room. It is also critical to follow surgery guidelines when washing hospital linens, towels, and equipment. Every day, the hospital is routinely cleaned. Now with more affordable, accessible water, they can make quicker decisions, and ensure the community receives the care they need, when they need it - without the worry of whether they have adequate water supplies.
Household Expenses

The Sphere Minimum Standards for Water Supply indicate that the average basic survival water needs are a minimum of 15 litres per day per person. This means that for an average household in Badhan, it would cost them approximately $110 dollars per month just to ensure that they have access to the minimum amount of water needed to survive. which many cannot afford. The table below shows the cost of household priorities (water, food, health) and the amount of debt on average a household has.

<table>
<thead>
<tr>
<th>Amount Spent on Water Monthly, in $USD</th>
<th>$92.45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average amount of cash savings your household has, in $USD</td>
<td>$81.53</td>
</tr>
<tr>
<td>Average amount of debt your household has, in $USD</td>
<td>$247.88</td>
</tr>
</tbody>
</table>

70% of households surveyed had savings of USD 0-$99. The ILO ranks Somalia as a low-income country and a survey done on Puntland in 2022 showed that 91% of respondents ages 15-49 had not done any work 12 months prior to them being surveyed. 52% of women aged 15-49 who mentioned they were employed at the time of the survey were self-employed.

However, the debt was higher with majority of Households having a debt of USD 0-$149 for 44% of participants surveyed. According to the World Bank (2021), the GDP per capita for Somalia is only USD $447. Additionally, a survey done by the CALP Network (2020), showed that each household had debt of USD $300-$1500 in Somalia. It is estimated that seven out of ten Somalis live in poverty.

The survey showed that households' main responsibilities and priorities were debt, food insecurity, and livelihoods. Debt in their context is usually related to water and education (children's school fees). With a lack of savings, the cost of living for many people is extremely high and difficult to maintain. The survey results showed that 67% of households have no savings and of the 33% that do have savings, they have an average of USD $81.05.
Household Expenses

Cost of Living Monthly Averages in Badhan

The majority of household spending went towards repaying debts followed by spending on food and water. Households rely heavily on their capacity to access credit (debt), with more than half of those surveyed (86.75%) reporting debt at the time of the survey and 66.75% reporting no savings. Households use credit (loans) to supplement their income (savings in this particular case). The poll asked respondents to share their monthly spending for common household items such as rent (75.25% of respondents own their home), food, water, medical, repairs, expenses, debt, and savings. According to the baseline survey, households spent $92.45 of their monthly expenses on water purchases, which is understandable given that water has become a scarce commodity during dry seasons, with considerable rises in water prices adding to significant levels of family debt.

Average monthly food expenses exceeded $100, with households paying an average of $137.38 on food, while medical, rent (room), and home repairs ranged from $25.69 to $56.28. The majority of households contacted for this poll reported having difficulty repaying their debts due to the necessity to pay for monthly expenses. Conversations with respondents reveal that households have reached their credit limit and cannot obtain additional credit until debts are at least partially repaid. With this bleak margin, households remain water and food insecure but with less water pricings families are able to pay for more water and pay off their debts.
Conclusions

The Adeso team hopes that this report is informative to paint a current (Q1 2023) picture of Badhan, Sanaag, Puntland, Somalia.

What we hope is that this baseline has captured the current state so that after Badhan received piping directly to households, schools, hospitals, health clinics and businesses, that we can demonstrative transformative change. Badhan will move from a place of water insecurity and scarcity to water secure.

After Badhan’s Water Account is up and fully running, we will hope to show in the Endline Assessment that:

1) Water is safer and cleaner, more accessible, more reliable and more affordable. We will treat the borehole water with Reverse Osmosis technology removing contaminants and making it a safer drinking source; it will be piped directly to households and trucks to others all in a more reliable and affordable manner.

2) The amount of water used has changed. With more affordable, continuous, safe, running water, we anticipate that each person will increase their use, for drinking and across all uses of water.

3) Usage of water changed. We can expect this to change significantly, from going from limited supply to running water, people will use water for more than basic necessities. Examples that we hope will ultimately happen (beyond the short-term captured in an Endline): Growing Household Gardens, Watering livestock better, Installation of showers and bathtubs, Installation of Flush Toilets, Building with bricks and other water-intensive materials, Greening the area.
Thank you

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