

Pipeline Worldwide – Impact Report

Project Overview

Project Name: Rehabilitation Of Moyo General Hospital Water Transmission System

Chart of Account Number:

District Served: Moyo

Project Location (Village/Sub- County): Medical Quarters Village, Elenderea Parish, Moyo Town Council

Project Timeframe:

- Start Date:

- End Date (or Ongoing):

Financial Summary

Approved Budget: UGX 35,695,000 (\$10,000)

Total Project Cost (to date):

Funding Sources: WIHA

- Pipeline Worldwide Campaign / Strategy
 - Partners
 - Grants
 - Community Contribution
 - In Kind Contribution
 - **Budget Status:**
 - On Track
 - Under Budget
 - Over Budget
-
-

Program Goals & Key Targets

Overall Goal:

1. The primary goal and objectives of this project are to:

- a) **Enhance water supply:** Increase the availability of clean, potable water for hospital operations, patients, and staff.
- b) **Promote infection prevention and control (IPC):** Improve hygiene practices and sanitation measures to reduce the risk of healthcare-associated infections.
- c) **Enhance general sanitation:** Improve sanitation facilities and waste management practices to create a healthier environment for patients, staff, and visitors.
- d) **Reduce operational costs:** Free up financial resources that were previously allocated for water bills, allowing for the reallocation of funds to other critical areas of the hospital.

Key Targets (Planned):

- I. **Borehole Rehabilitation:**
 - Repair or replace pumps in Borehole 1 and Borehole 2 to restore their functionality.
 - Conduct a thorough inspection of all boreholes to identify any other issues that may be affecting their performance.
 - Implement preventive maintenance measures to ensure the long-term sustainability of boreholes.
- II. **Transmission Line Upgrade:**
 - Replace the existing 40mm diameter transmission line with a larger diameter pipe, such as 60mm or 75mm, to improve water flow and reduce head losses.
 - Consider using high-density polyethylene (HDPE) pipe for its durability and corrosion resistance.
 - Optimize the layout of the transmission network to minimize bends and curves, which can cause water pressure losses.
- III. **Secondary Reservoir Expansion:**
 - Evaluate the existing secondary reservoirs to determine if their capacity is sufficient to meet the hospital's peak water demand.
 - If necessary, construct additional secondary reservoirs or expand existing ones to provide a more reliable and efficient water supply to different hospital units.
- IV. **Water Quality Monitoring:**
 - Implement a regular water quality monitoring program to ensure that the treated water meets potable water standards.
 - Conduct water quality tests at various points within the distribution network to identify any potential contamination or degradation.
- V. **Hygiene Promotion:**
 - Develop and implement a comprehensive hygiene promotion program to educate hospital staff and patients on proper handwashing practices, safe water storage, and sanitation.
 - Provide handwashing facilities in strategic locations throughout the hospital.
- VI. **Water Conservation:**

- Promote water conservation measures, such as repairing leaks, reducing water wastage, and using water-efficient fixtures.
- Educate hospital staff and patients on the importance of water conservation and provide training on water-saving techniques.

Key Outputs (Delivered):

1. Replacement of BH4 Transmission line to 75mm to 63mm, including fittings and excavation plus protection at road crossings through using sleeves made of galvanized iron pipes
2. Independent Transmission line for BH2 - HDPE Pipe 40mm including fittings
3. Riser Pipe-GI BH4 63mm including its fittings
4. Riser Pipe-GI BH2 40mm including its fittings
5. Supply and install BH1 Pump Complete
6. Restore connection of BH 2 including deeper excavation, protection of cables through galvanized iron pipe sleeves, water proof joints and marker for future safety
7. Restore connection of BH 1 including deeper excavation, protection of cables through galvanized iron pipe sleeves, water proof joints and marker for future safety

Additional outputs during the implementation out of goodwill of the service provider and contribution from the hospital

1. Replacement of non-functional water meters, especially for BH 3 and BH 4 with appropriate sizes. Initially, only 2 water meters were functional (BH 1 and BH 2), but we replaced water meters for BH 3 and BH 4). This is to ensure that the daily outputs of each pump into the storage tank can be estimated.
2. Supplied and installation of air release valve for BH 4 to avoid air blocks in the system.
3. Replacement of defective non-return valve for BH 4 as well as changing the entire pipe connections to the pump house with galvanized iron.
4. Replacement of hinges of heavy duty covers for the manhole to BH 1. An access patch was also created to allow easy reading of the water meter without opening the heavy cover, which requires at least 2 people to lift it open.
5. Construction of Manhole for washout at the storage tank for proper protection.
6. Supplied and installation of markers at road crossing for pipe network.
7. Rectified defects identified during project execution on BH 2
8. Rectified defective water level indicator on the storage tank

9. Worked closely with the technician responsible with hospital water supply and provided on site skill support.

Population Reached

Primary Beneficiaries:

Out-patients, In-patients, staff on duty and staff and their families in quarters

Secondary Beneficiaries:

Attendants of patients, neighbors of the hospital Christians who pray in the Hospital Chapel, Boda-boda riders staged at the hospital gate, customers of small business at the hospital gate and other visitors at the hospital.

Number of People Served (Direct):

35,449 (Patients and staff served between March 2025 to Feb 2026)

Number of People Served (Indirect):

112,750 (District population)

Monitoring, Evaluation & Learning

Evaluation Tools Used:

- Baseline Survey
- Endline Survey
- Focus Group Discussions
- Key Informant Interviews
- Site Visits / Observational Checklists
- Routine Program Data
- Partner or Government Records

Frequency of Data Collection:

Quarterly

Responsible Staff/Partners:

Hospital plumber, Pipeline Project Manager

Key Statistics & Results

(Include measurable outcomes and indicators)

Comparison to Baseline (if available):

Statistics yet to be updated and analyzed

Alignment & Contribution

Pipeline Worldwide Program Areas Addressed:

- Economic Empowerment
- Education
- Emergency Relief
- Equipment & Supplies
- Renewable Energy
- Transport
- WASH (Water, Sanitation & Hygiene)
- Infrastructure
- Workforce Development

SDG Alignment (if applicable):

Testimonial (Qualitative Impact)

“As an Administrator of the hospital, one of the most stressful phone calls to receive is that to inform me that there is no water in the labour suit or theater. I would straightaway know that work there is almost impossible without running water and that this could lead to someone losing life. Moreover, I am also aware that usually, I cannot fix the problem in a matter of minutes. So I am subjected to a lot anxiety throughout the period of trying to fix the problem. This could be hours, days or even weeks. To that end, the support by WIHA/Pipeline Worldwide to find lasting solutions to the challenges of water supply is extremely important for healthcare service delivery. After completion of phase one of the project, water is generally available. For me in particular, it is a very big relief”.

Impact Story

Story Title: Moyo Hospital Refers a patient due to lack of water in the theater

Background:

Before the project, generally, water was insufficient and inconsistent. Key units like the theater’s activities would sometimes be halted due to absence of running water. At some

point, the hospital was compelled to ask attendants/patients to get water from any source and bring to the theater for operations to go on. This turned out to be a big mistake. Sepsis set in mainly because the water being brought in by patients was from unclean source and or using unclean containers. As a result, this had to stop. But this meant that referrals to other facilities became order of the day. This was expensive both for the hospital and the patients. One fateful night, a patient was brought in with intestinal obstruction which required emergency surgery. Unfortunately, water had been unavailable for two days. As a result, theater clothes for both staff and patients were not washed and there was not even a cup of water hand scrubbing. The only option was referral. An ambulance was prepared and they left for Arua Hospital, about 150 kms away. For clarity, our ambulances are vehicles chosen mainly due to their off-road capabilities and therefore they are only strong not very comfortable. The roads were very bad too. As if that was not bad enough, it rained heavily that night so the ambulance got stuck severally. A journey of ideally 2 or 3 hours took 6 hours. By time they arrived at the gate of the hospital, the patient breathed his last. To date, some of us are still being haunted by this unfortunate occurrence.

Challenge:

The hospital is served by four (4) motorized boreholes (BH) that pump water to a 144m³ reservoir tank to supply the main hospital service area and staff quarters. However, despite this, the hospital has been grappling with water challenges for years characterized by:

a) **Insufficient water supply:**

This was due to two (2) of the four (4) boreholes being nonfunctional, structural/technical challenges/gaps with transmission lines and general plumping challenge

b) **Secondary reservoir issues**

The 12 secondary reservoirs serving various hospital units have inadequate storage capacity and some are damaged, affecting water distribution.

c) **Infrastructure deterioration:**

Ball valves in secondary reservoirs are non-functional, hindering water flow and potentially leading to water wastage. The tower structures for the secondary tanks that serve the Theater, Maternity Wards, Laboratory and the Out Patient Department blocks, have become weak, threatening collapse.

Pipeline Worldwide Intervention:

The above challenge was huge and required substantial amounts of funds to comprehensively address at once. As a result, the intervention was structured in a phased manner.

With the funding from WIHA, Phase 1 of the project focused on improving the volume of water pumped by restoring functionality of the boreholes and improvement of the transmission lines. The summary of the scope of work successfully implemented is below:

1. Replacement of BH4 Transmission line to 75mm to 63mm, including fittings and excavation plus protection at road crossings through using sleeves made of galvanized iron pipes.
2. Independent Transmission line for BH2 - HDPE Pipe 40mm including fittings
3. Riser Pipe-GI BH4 63mm including its fittings.
4. Riser Pipe-GI BH2 40mm including its fittings.
5. Supply and installation BH1 Pump Complete.
6. Restore connection of BH 2 including deeper excavation, protection of cables through galvanized iron pipe sleeves, water proof joints and marker for future safety.
7. Restore connection of BH 1 including deeper excavation, protection of cables through galvanized iron pipe sleeves, water proof joints and marker for future safety.

Outcome & Change Observed:

- **Improved water supply:** Increased availability of clean, potable water for hospital operations, patients, and staff.
- **Enhanced sanitation:** Improved sanitation facilities and practices, reducing the risk of disease transmission.
- **Reduced disease prevalence:** Decreased incidence of waterborne diseases among patients and staff.
- **Enhanced operational efficiency:** Reduced operational costs associated with water supply and sanitation.
- **Improved community health:** Improved overall health and well-being of the community served by Moyo General Hospital.
- **Improved healthcare service delivery.** Availability of sufficient water allows daily cleaning to be done timely. This also means health workers can begin work early and easy hand washing in between patient's management means reduced turnaround time.





Photos 8: Riser pipes before and after connections to the tank

Lessons Learned & Next Steps

What Worked Well:

- A competent Service provider was identified
- Project was executed within the stipulated time
- Out of good will, more than the initial scope was accomplished

Challenges Encountered:

The following are some of the challenges faced during execution:

- a) Electricity main grid had been fluctuating greatly during pump output monitoring.
- b) The open hole design of the boreholes contributes to high content of suspended solids. This affects functionality of water meters.

- c) Lack of markers make tracing pipeline difficult. As a result, several pipe lines were damaged during excavation.
- d) Being dry season here, the ground is quite hard and affects excavation progress.

Planned Improvements / Scale Opportunities:

Based on the pump monitoring data analysis, we recommend the following for the next phase of the project:

- a) Periodic flushing of BH 4 recommended as the main borehole, capable of producing about 57,600 litres per day. Otherwise, the high suspended solid discharge from this borehole may affect the performance of the pump and the water meters.
- b) Installation of additional screens and sleeves on the pumps to mitigate effects of high suspended rock particles on the pump and the water meters.
- c) Limit pumps operation regimes to about 18 hours to avoid over exploitation of groundwater in the area; especially, borehole BH 1 and BH 2 that share the same aquifer
- d) Water meter on the distribution network is not functional, but recommended repair or replacement in order to monitor outflow of water from the storage tank.
- e) Repair water level monitoring system on the storage tank so that the technicians can easily take records and compare with water meter reading results.
- f) The Hospital Administration should development a comprehensive operational and maintenance plan for the water supply management, which includes undertaking water use audit and establishing both normal and emergency water supply plan.
- g) Power protection and regulation for BH 4 is highly recommended as the main pump station for the Hospital.
- h) Review performance of BH 3 and recommend boosting the pump output.
- i) Recommend installation of markers for both transmission lines from the pumps and water distribution network.
- j) To avoid power and water wastage, there is need to automate pump switching on and off, especially when reservoir tank get full/low. This will equally prolong the lifespan of the pumps and enhance optimum performance
- k) The orientation of the PV panel-set doesn't conform to expected Azimuth and Zenith anglerequirements subject to solar window. Hence, affecting the harvest and performance.
- l) DC cable link between PV panels and pump controller is under rated.
- m) Lightening arrester installation for the PV panel-set protection doesn't conform to standardsincluding lack earth test-link.

n) The Solar pump controller reconfiguration is required as dual input function unit.

Prepared By: Bessi Bernard Eberu

Date: 12/03/2026

Pipeline Worldwide | Strengthening communities living in extreme poverty in Northern Uganda