

Kenya Water Access Project Overview

Project Overview: The objective of this project is to improve access safe water for drinking and household uses in Kogwari, Karachuonyo, Kenya, a community that has historically had difficulty in acquiring and maintaining such access.

Partner Strategy: The proposal includes a partnering strategy among university-based professors and students, Rotarians, and individuals in Kenya and at the project site. These partners include:

- Howard University Rotaract Club
- Howard University Chapter of Engineers Without Borders, including:
 - Professor John Tharakan, mentor
 - Lydia Wosen, project manager
 - Monica Maya, member
 - [Others]
- Lavington Rotary Club of Kenya
- EClub of ~~WASH~~Washington, DC, District ~~D~~ 9980
- Rotary Club of Dupont Circle, District 7620

Funding Request Timeline: Our team was hoping that we could make a joint application for a District Grant toward the work the application a joint effort of our four clubs.

- May
 - Activity: Site assessment and hydrogeological study in Kenya by HU team.
 - Request: \$5,500 = \$4,000 hydro + \$1,500 environmental
- Summer (June)
 - Activity: Design work by HU team in USA
 - Request: Borehole drilling \$15,000
- December
 - Activity: Construction in Kenya with HU in attendance
 - Request: \$31,700 = (\$20,700 solar & pumps) + (\$3,000 tanks + tank stand) + (\$8,000 piping including a contingency)

Funding Strategy:

- WASH-RAG
 - Deadline
 - Amount Requested

- o Application Lead
- Rotary District 7620
 - o Deadline: May 31
 - o Amount Requested
 - o Application Lead
- Rotary District 9980
 - o Deadline
 - o Amount Requested
 - o Application Lead

Project Summary

Community Name: Kogwari Municipality: Karachuonyo

The objective of this project is for the community to easily access sufficient safe water for drinking and other household uses. The community is far away from the closest body of water and rainwater is not sufficient in this area. This community has dug water pans in the past to help harvest water, however the soil erosion has filled the pans and has reduced the capacity of the pans. The community has reached out to the local and national government in the past, but without helpful response.

Our engineering team plans to conduct a site assessment visit in May prior to which we would have a local Kenya professional firm perform a hydro geological assessment to determine the best location for a well. The project's deliverable is a water distribution and treatment system that would supply enough safe drinking water for the community.

Our current schedule is to perform all work this year. In terms of major tasks:

- May - Site assessment and hydrogeological study in Kenya by HU team.
 - \$5,500 = \$4,000 hydro + \$1,500 environmental
- Summer - Design work by HU team in USA
 - Borehole drilling \$15,000
- December - Construction in Kenya with HU in attendance
 - \$31,700 = (\$20,700 solar & pumps) + (\$3000 tanks + tank stand) + (\$8000 piping including a contingency)

Thank you for taking the time to learn more about our project and for your efforts in helping us work together with Dupont Rotary. Below are the answers to your questions. I asked Philip, our responsible engineer in charge (REIC), to help me answer them since his role makes him more knowledgeable with the technical aspects of our project.

1.1) Because the soil erosion has filled the community water pans, we want to construct a borehole to access safer groundwater. There have been many successful boreholes in this part of Kenya and throughout Africa. To ensure we have a high

possibility of a borehole with a good yield and to avoid wasted expenditure we will take a staged approach. 1. In May 2025, an evaluation of previous water projects in the area including collecting data on other wells. 2. In May 2025, a physical hydrogeology evaluation of at least three potential borehole sites using vertical and horizontal electrical profiling to find best borehole location. Three attendees from Howard University EWB will likely attend. 3. In summer 2025, under observation from our technical mentor Moses Sikuku, drilling a borehole at the recommended best location and measuring the water yield from that borehole. 4. Only then would we commit construction funding for solar panels, borehole pump, water tanks and distribution piping, with construction in December 2025.

1.2) In Kogwari's application to EWB they mentioned how they asked the local government for help, but they turned them away because of inadequate funding from the national government. I also recently asked Calvince, who lives in the community and is part of the non-governmental organization (NGO) called Maisha Innovation Center for Women and Youth, if we could ask the government or local government for help and he said that they wouldn't be of use. In regard to sustainability and maintenance of the water source we develop, I believe the community will be able to organize themselves to monitor and preserve the system we'll build there. In their application in the Operations and Maintenance section, they mentioned how the community-based organization (CBO), Kogwari Development Initiative, would enact a small fee required to use the water and those who can't pay can help with the water maintenance. They detailed more of their plans for maintenance as well as explained the major projects and the fundraising they've done in the past. With the CBO and NGO working together I believe they'll be able to organize themselves appropriately. We also plan on doing a monitoring trip sometime after we've constructed the system to check in. If you would like me to send over their application, I gladly will! I'm assuming that's what you mean by government involvement but in terms of getting the permit to drill, that'll be up to the contractor we hire.

2) Don't worry about not knowing the technical stuff, I'm learning a lot of new things too! The first major cost will be hiring a contractor to do the two studies. Hydrogeological study should be around \$4,000 and the environmental impact study no more than \$1,500. After we've gotten results from the studies and know which place is best to drill (assuming there is a suitable place to drill), we'll hire a contractor to do the drilling.

Our technical mentor Moses, who lives nearby and is an EWB volunteer with years of water project experience, said the borehole drilling might be around \$15,000. I've attached the example budget breakdown for the drilling which Moses made. The community insisted on a borehole and once we get on the ground we can assess if there are other alternatives. I also attached Moses' drafted budget breakdown for solarization and equipment which will happen after the borehole drilling. The total for that is around \$20,700. In addition, we'll need 3 plastic water tanks each with 10,000 liters capacity and a raised concrete platform. Moses said the price for 3 water tanks is KES 390,000 (\$3,000). Moses estimated the pipes and installation to be around \$8000.

To recap, the cost by phase is (not including team travel costs):

1. May studies \$5,500 = \$4,000 hydro + \$1,500 environmental
2. July Borehole drilling \$15,000
3. December construction \$31,700 = (\$20,700 solar & pumps) + (\$3000 tanks + tank stand) + (\$8000 piping including a contingency)

Grand total \$52,200

3) Philip said his club's next application cycle is in June, I'm not sure when Dupont's application cycle is but the idea is to apply for a grant as soon as possible with enough time to submit a well written proposal. Our biggest concern is fundraising, therefore helping us get a grant or two will be extremely valuable. We would love to have a continued partnership between Dupont Rotary and EWB-HU. This would mean that we would give you updates on this project, and we would continue to fundraise together. For this upcoming grant process, we would expect Dupont Rotary to spearhead and chaperone the district grant and if you have any technical members, they can help in reviewing our technical plans once we go into the implementation phase. In addition, if they're interested, they could also join us in our implementation trip in late 2025 or early 2026 when we start the bulk of the construction. We expect that Philip's E-Wash Rotary club and Howard University Rotaract club will also help with funding. Possibly other DC Rotary clubs might assist although we have not approached any. We've been working on fundraising for the past few months by cold emailing companies and doing small fundraisers. More recently, we're working with Howard leadership to get sponsorships for Howard related companies. We don't expect Dupont Rotary to cover most of the cost, however as much as we can fundraise together would be great!

V. April 2, 2025, Panzera

Attached are a photo of the community and of an existing water pan which should help the understanding. As well as the borehole budget and solarization and equipping budget.

I apologize for the lengthy email but I wanted to provide enough detail so you can have a better understanding. Please let us know when you hear back from leadership, and we can set up a virtual meeting to talk anything over. Please let me know if you can't access any of the attachments and thank you for your support!