



Sustainable Engineering Solutions to Alleviate Water Scarcity in Saviefe-Deme, Ghana

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Presentation Overview



- The Ghana Project
- Partnering Community
- Issues Facing Community
- Our Goal
- Past Work
- Current Approach
- Long-Term Goal



The Ghana Project



Professional Mentors

- Dr. Wayne E. Bates
- Dr. Matthew Lackner
- Rebecca Ducharme

NGO Partners

- Ghana ACT
- HCDP Ghana



Ghana ACT

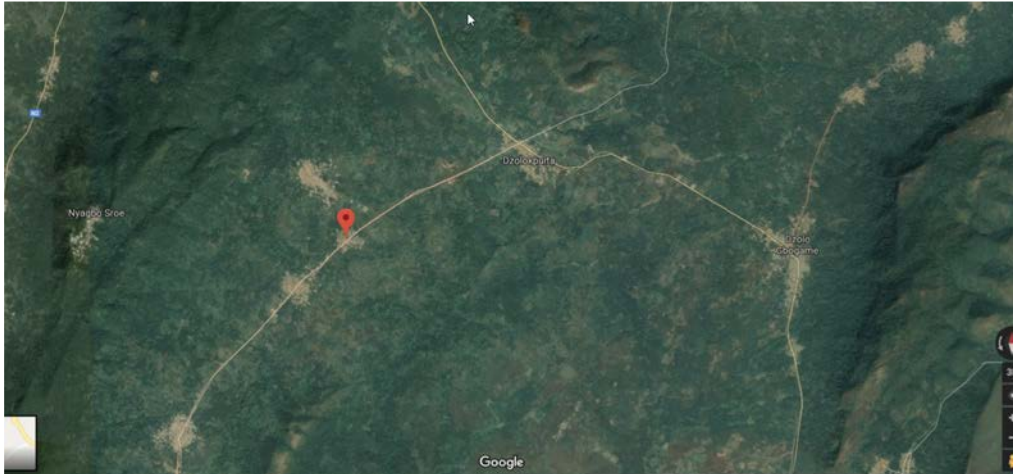
Alliance for Community Transformations

Partnering Community

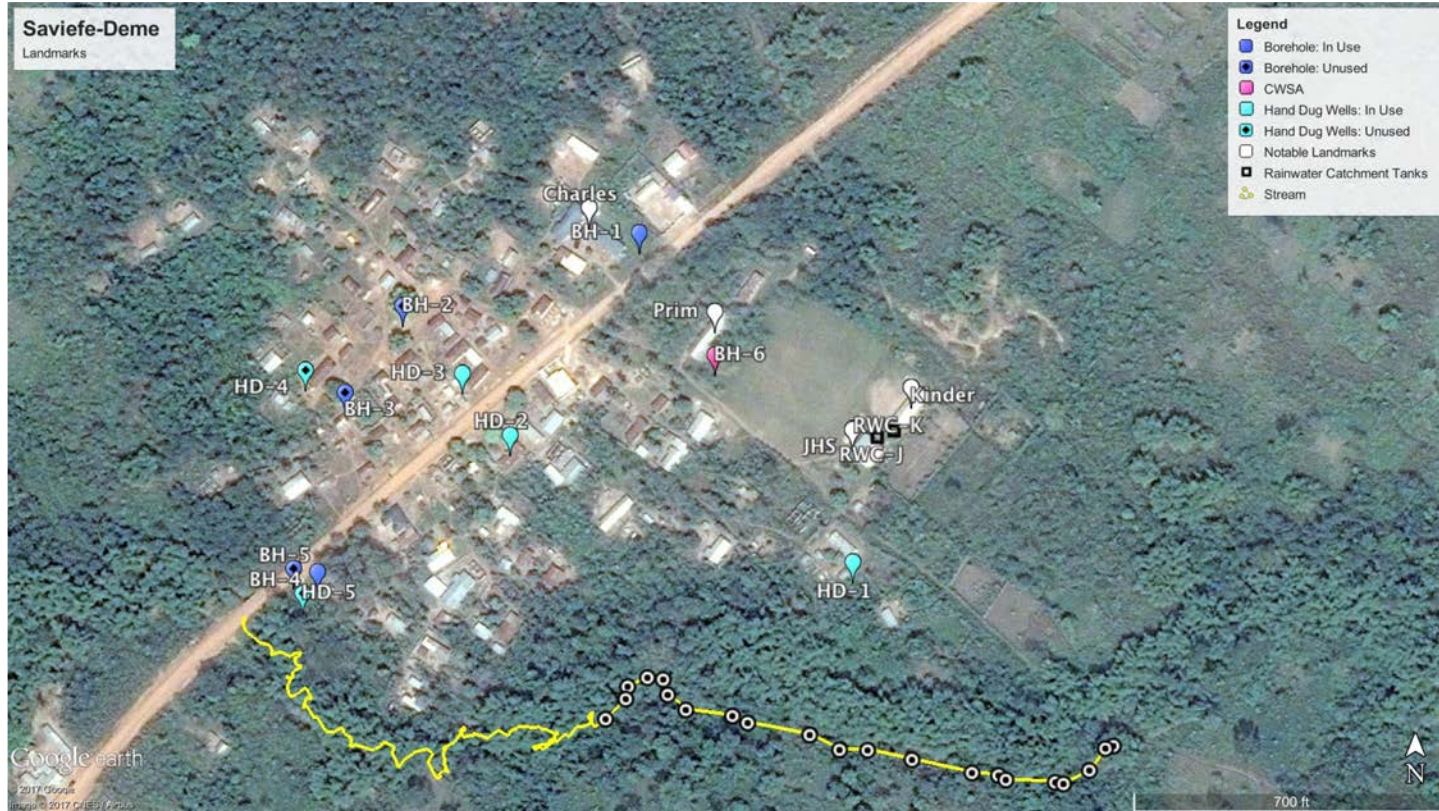


Saviefe-Deme

- Rural & Agricultural
- 500 People
- Established partnership in 2013



Partnering Community



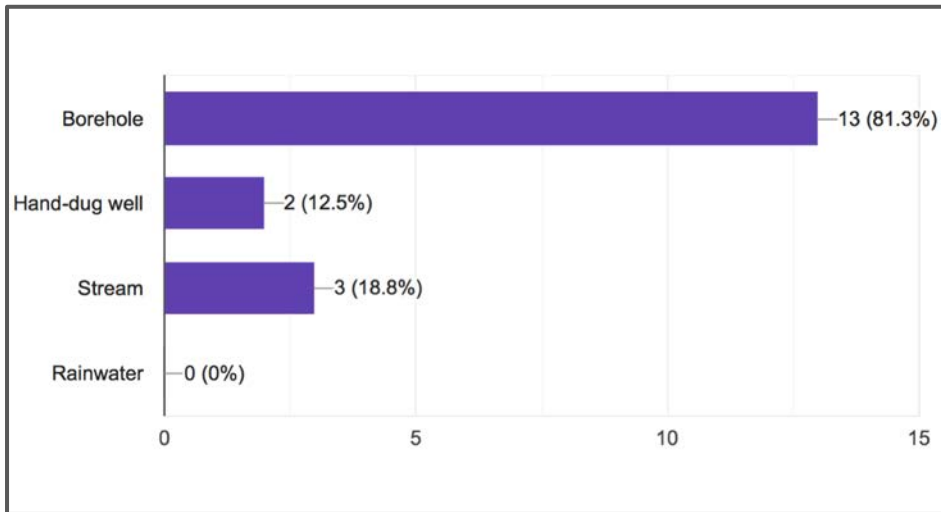
Partnering Community



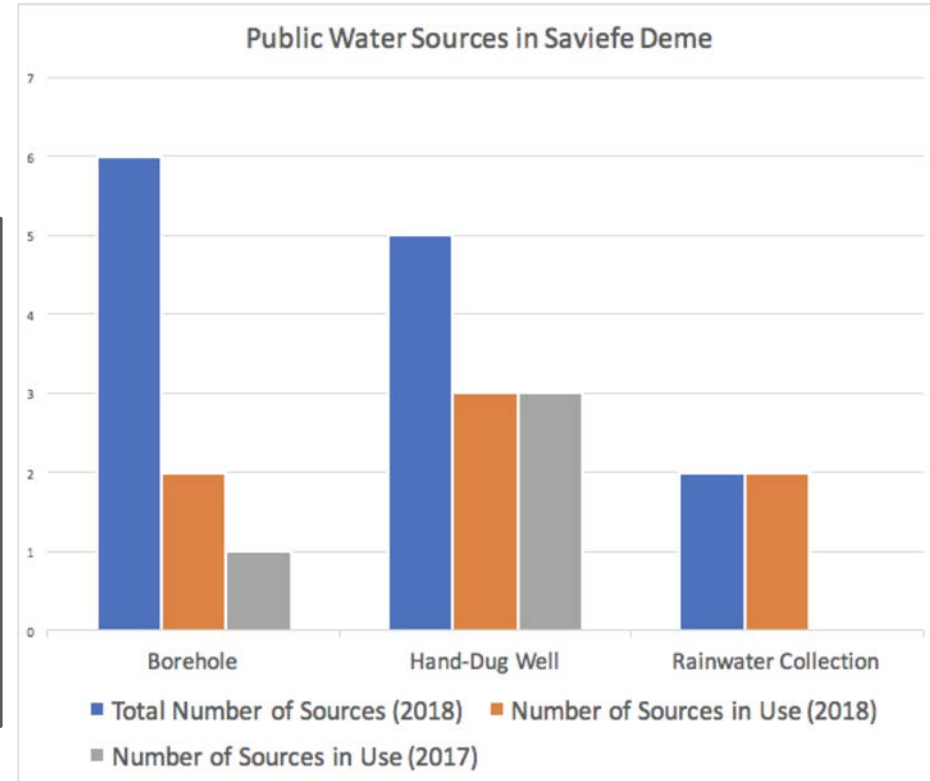
Issues Facing Community



- Water supply & water quality
- Average demand: 25-50 L/person/day



What is your primary source of drinking water?



Issues Facing Community



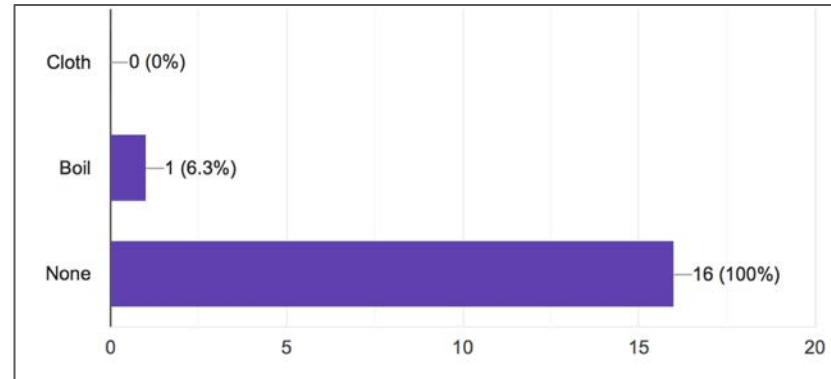
Control sample



Hand-dug well sample



Stream sample



How do you treat your water?

Our Goal



Sustainably increase the volume of reliable, clean water sources to last the entire year



Our Goal



3 critical steps to achieve sustainability:

1. Assess, Implement, Monitor
2. Community Input & Contribution
3. Local Labor & Materials



Past Work



Assessment Trips



Past Work



ENGINEERS
WITHOUT
BORDERS
USA



Rainwater Catchment Systems



Current Approach



Household Biosand Filters

- Treatment for hand-dug well, stream and rainwater sources
- Pilot project - 10 filters
- Sustainable construction
- Will follow up on 2019 trip

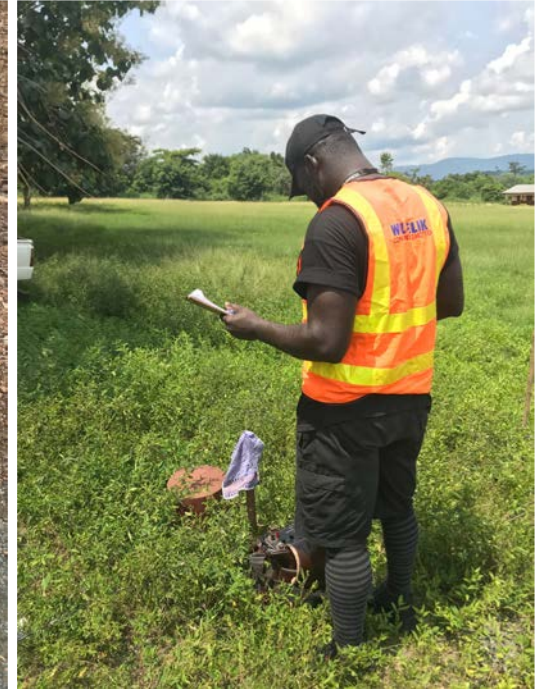


Current Approach

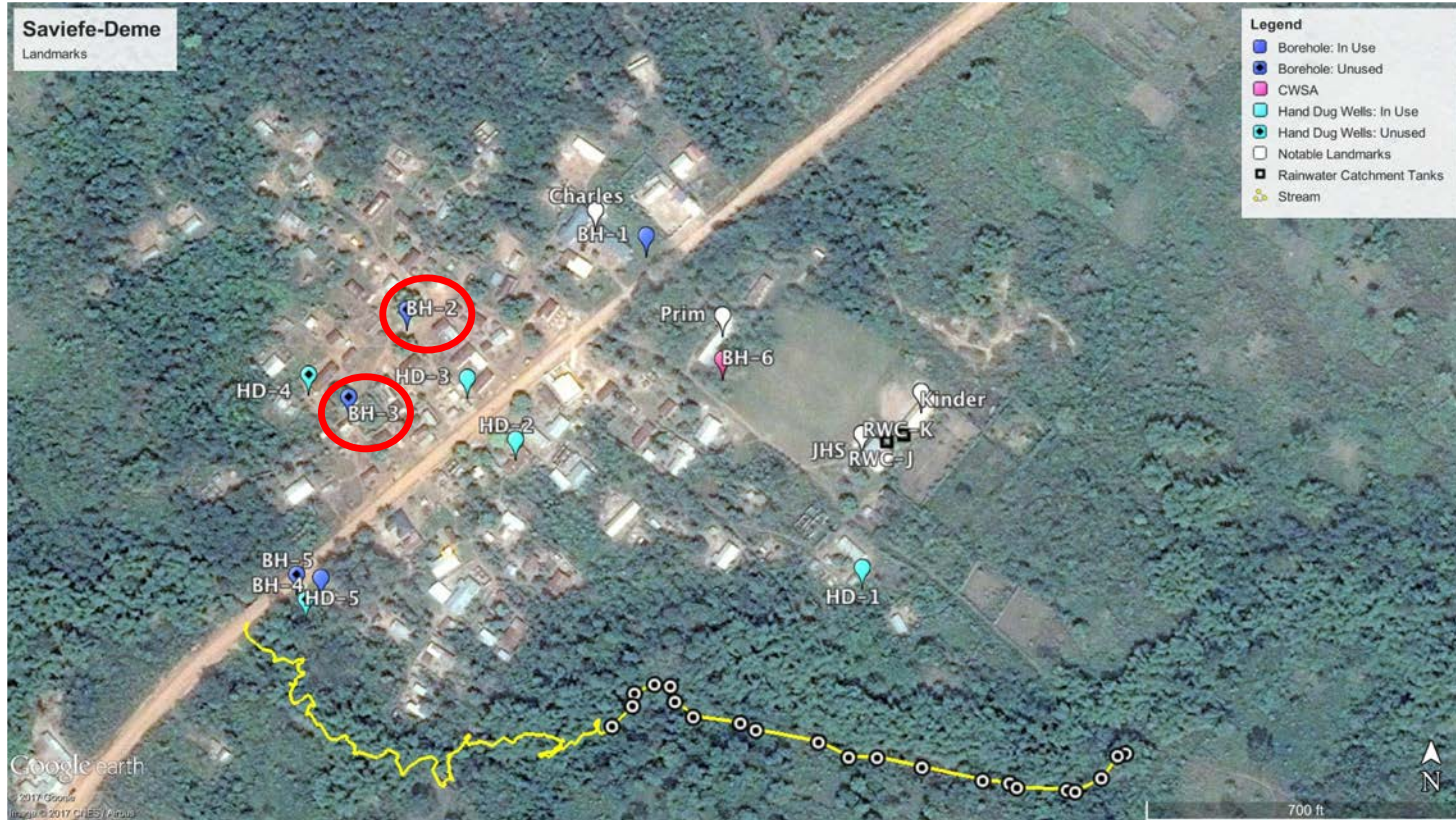


Borehole Rehabilitation

- Many boreholes exist but have low yield
- Not feasible to drill new boreholes
- 4 existing boreholes examined - 2 show promising results



Current Approach



Long-Term Goal



Water Distribution System

- After supply is increased, access is priority
- Taps in locations around community, sourced from boreholes
- Large-scale





Thank You!

Contact: ewb.umass@gmail.com

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Donate: ewbumass.org/donate



2018 Travel Team