MILLENNIUM WATER ALLIANCE

Assessing Causal Effects of Rural Water System Breakdowns in Northern Kenya

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01 BACKGROUND

Small-scale borehole water supply systems in the arid areas of Northern Kenya are prone to frequent breakdowns, especially during the drought season. These systems are overtaxed during this period due to the absence of alternative water sources.

Anecdotal evidence indicates that when these systems breakdown, it may take more than seven days to repair them unless they are strategic boreholes that serve several communities or livestock. These breakdowns, in turn, hinder the continuous functionality of the systems, leading to inadequate water access for communities in the region.

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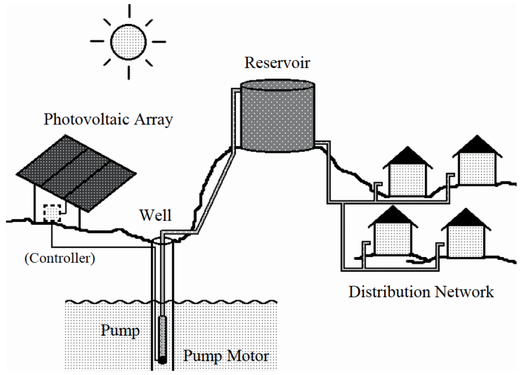
02 OBJECTIVE

The Millennium Water Alliance (MWA) assessed selected boreholes in Northern Kenya's arid areas to identify factors affecting their continuous functionality. The assessment aimed to pinpoint which components are most likely to break down and how these issues influence repair times.



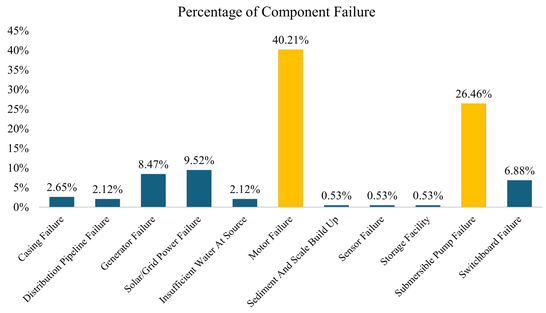
03 METHODOLOGY

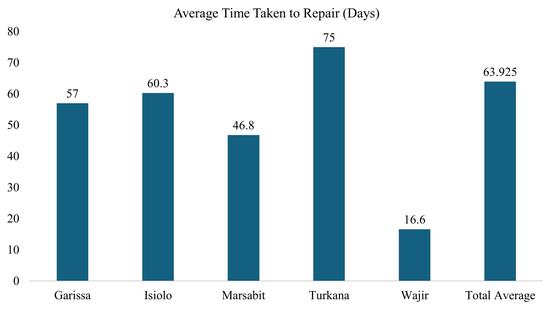
Data was primarily collected through:

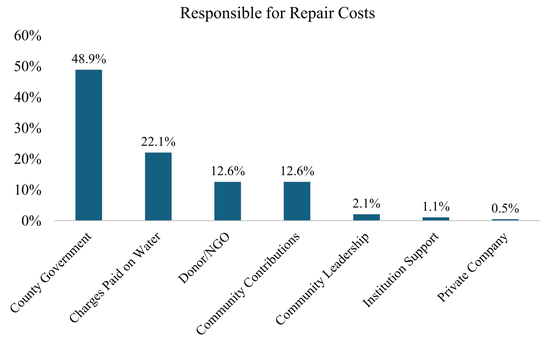
- Quantitative survey targeting operators at 264 boreholes.
- Key Informant Interviews (KIIs) with members of the Borehole Rapid Response Team (BRRT)
- KIIs with private sector spare part suppliers in different localities (counties) across the region.
- 15 focused group discussions

The primary questions were analyzed to determine the components most prone to breakdowns including how long it took to respond to the last borehole breakdown, the component that caused the last borehole failure, and who met the cost of the repair.

04 ANALYSIS







05 FINDINGS

- Motor and borehole submersible pumps are the most prone to breakdowns.
- These two components account for **40.21**% and **26.46%** of all borehole failures, respectively.
- When these two components broke down, repair times increased when compared to other borehole parts.
- Despite these boreholes being run by the community, repair or replacement of these parts was often financed by local governments or development entities due to their expense.

06 IMPLICATION

- Understanding critical components most affected by breakdowns enables spare part suppliers to stock the right equipment to facilitate faster repair of the borehole systems.
- Targeted training on the maintenance of these two components should be conducted with operators and borehole rapid response teams to minimize the number of breakdowns.
- Local governments should develop solutions for effective governance and management of these systems to ensure that revenues are readily available for the repair of these expensive components.

For more information, please follow the QR code: