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RURAL EVIDENCE AND LEARNING FOR WATER (REAL-Water)

Water quality knowledge of water system operators and local government officials in rural Ghana

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Mole Conference, November, 2023



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BACKGROUND

- ❑ Sustainable Development 6.1 calls for universal access to safe and affordable drinking water.
 - ❑ Specifically requiring that safely managed drinking water is free from contamination.
- ❑ Many water systems in rural areas do not practice drinking water treatment, and water system operators and local government officials may have incomplete knowledge related to water quality
- ❑ Knowledge gaps among these individuals are not well understood.
 - ❑ Greater knowledge related to water quality could lead to improvements in water treatment, system management, and source protection

WATER QUALITY KNOWLEDGE

- ❑ Water quality knowledge provides the tools for water quality assessment, prediction, and management of impacts.
- ❑ Understanding and monitoring water quality is vital for a variety of reasons:
 - ❑ **Human:** understanding of water quality ensures that water treatment processes are effective in removing these contaminants
 - ❑ **Agriculture:** Poor water quality can reduce crop yields and lead to health issues in animals
 - ❑ **Industry:** Poor water quality can damage equipment and affect the quality of products
 - ❑ **Source Water Protection:** Protecting the sources of drinking water is essential for providing clean and safe water to communities.

THE ASSURANCE FUND EVALUATION TRAIL

- ❑ This is baseline data from the evaluation trial. The baseline data were collected from December 2022 to February 2023. We interviewed:
 - ❑ Operators of 34 water systems in 11 selected districts of the Ahafo and Bono regions
 - ❑ Interviewed District Assemblies Planning Officers and Water Engineer/Environmental Health Officers

ELIGIBILITY CRITERIA

We targeted systems that would be financially capable of water quality testing and treatment but were not currently practicing it adequately.

To be eligible, water systems needed to:

(a) Not conduct regular water quality monitoring

(b) Be located within two hours of a professional laboratory

(c) Have an average net monthly revenue exceeding the monthly water quality testing fees

RESEARCH METHOD



METHODS

- We developed a water quality knowledge assessment instrument for administration to water system operators and local government officials
- Included 15 questions to assess knowledge related to:
 - Types of contamination
 - What contaminants might be found in source water?
 - Treatment
 - How can you be sure that the water you are supplying is safe to drink?
 - Water quality regulations/standards
 - Based on Ghana standards, how often should microbial water quality be tested?



DELIVERY OF THE KNOWLEDGE QUIZ

- Interviewed 32 water system operators and 22 local government officials in rural areas of the Ahafo and Bono regions
- Adopted a rigorous scoring process
 - Responses were scored based on review of transcripts by two independent reviewers

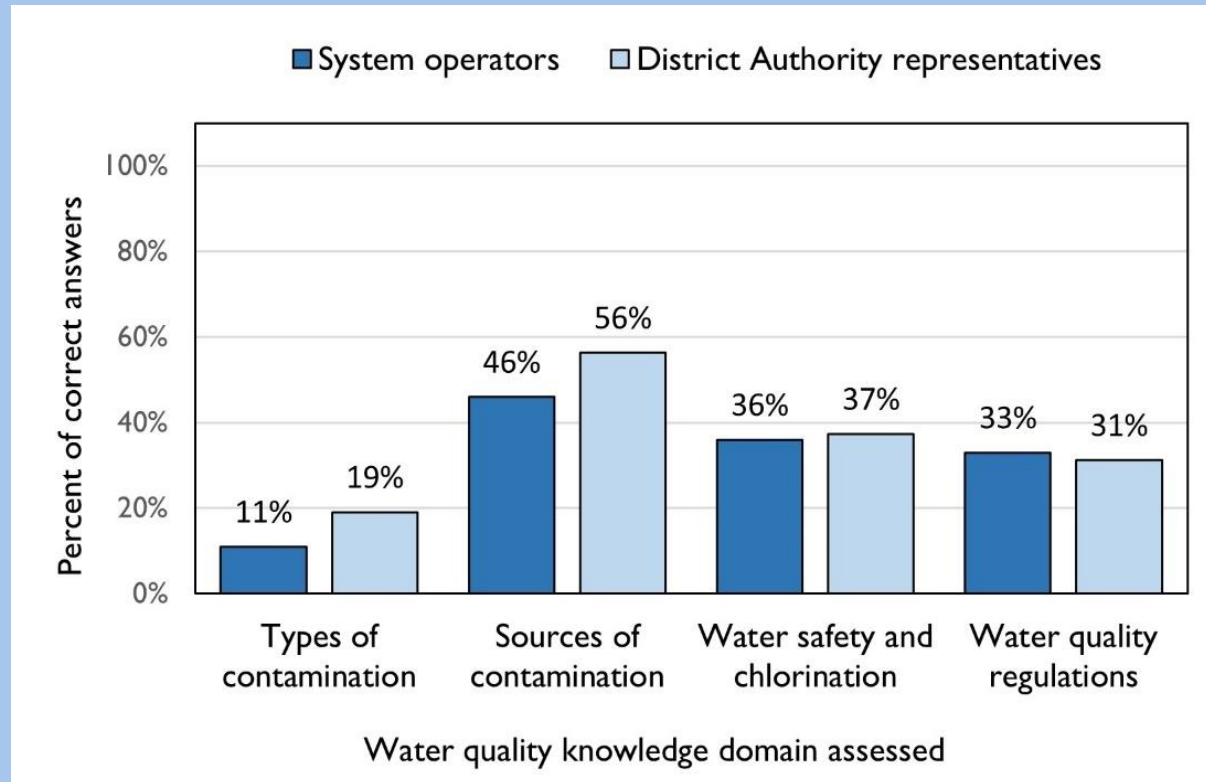


BASELINE RESULTS



FINDINGS

Key finding I: Water operators and local government officials generally had low water quality knowledge



- ❑ Most knowledge of risks related to certain point sources of water contamination (e.g., latrines,
- ❑ Some knowledge of chlorination and what makes water safe as well as regulations and standards related to water quality
- ❑ little knowledge about types of contaminant

FINDINGS Cont...

Key finding 2: District authorities thought water quality was important, but faced challenges improving it

- ❑ Majority of the local government officials mention water quality as among the top 5 priorities of their district assemblies
- ❑ 18% of the District Assemblies planned and budgeted for water quality-related activities
- ❑ Insufficient funding was typically identified as a key barrier to addressing water quality and testing
- ❑ Lack of technical expertise regarding water treatment and water system improvements

KEY SUMMARIES

- ❑ Few water systems practiced any form of water treatment beyond quarterly or biannual chlorination and water tank cleanings
- ❑ Water quality knowledge among all respondents was generally low and similar among water station operators and local government officials

WHAT DOES THE DATA MEAN?

These water quality knowledge assessments confirm that:

1. There is a knowledge gap in improving water treatment, system management, and source protection.
2. The stepped wedge trial will assess the extent to which the Assurance Fund program, which includes capacity building and technical guidance for water operators, may lead to such improvements

THE ASSURANCE FUND EVALUATION TRAIL

- ❑ The Water Quality Assurance Fund is a mechanism that incentivizes professional, urban laboratories to provide testing services to dispersed, rural water systems.
- ❑ An initial pilot of the Assurance Fund in Ghana has led to water supplier improvements in monitoring frequency and water treatment (Press-Williams, 2021).
- ❑ The intervention has been expanded to an additional 10 districts in the Ahafo and Bono regions involving 28 water systems with the goal of improving sustainable water safety management.

MONTHLY DEBRIEFING MEETING WITH WATER SYSTEMS



****Debrief test results and discuss water treatment**

**** Brainstorm strategies to communicate water safety management measures with customers**

Thank
You