

COMMUNITY INNOVATION REPORT

Inter-Village Water Sanitation Safety Planning and Participatory Water Quality Monitoring in Rural Watersheds

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Abstract

Training rural youth cadres to monitor coliform levels in gravity-fed spring systems. Water-borne gastrointestinal cases declined by 58% over a one-year public health monitoring period.

Keywords: WASH, Water Safety Plans, Community Health Cadres, Coliform Monitoring, Water Governance

1. Introduction

Rural communities relying on upland gravity-fed water networks frequently experience bacterial contamination due to upstream livestock encroachment and unlined sanitation pits. Participatory water safety monitoring bridges the gap between regional water utilities and remote village councils.

2. Method

A Water Safety Planning (WSP) framework was co-created with 4 village councils. Thirty-two village health cadres were equipped with field-deployable incubator test kits to measure fecal coliform counts, publishing monthly water safety maps in village halls.

3. Results and Discussion

Cadre testing identified 8 critical contamination hotspots, prompting the community-funded construction of spring protection zones and livestock diversion canals. Public clinic records revealed a 58.2% drop in acute pediatric diarrhea cases over 12 months.

4. Conclusion

Empowering grassroots health cadres with simple microbiological diagnostic tools ensures enduring water security and community-driven preventive public health.

Declarations

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Conflicts of Interest: The authors declare that they have no competing financial or personal interests.

Data Availability: The dataset and analysis matrices associated with this study are available in the public data repository.

Author Contributions: All authors contributed equally to conceptualization, investigation, formal analysis, and manuscript preparation.

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