
1. BACKGROUND

Constitution of Nepal has ensured fundamental responsibility for every citizen to live clean and healthy environment, basic sanitation, safe drinking water and health service. In recognition of the importance of safe drinking water to public health, Rural Municipality has initiated a water quality ensuring mechanism of RVWRMP working RMs/M (Thalara, Chhabispathivera, Talkot, Masta and Bungal) in Bajhang district of province no-7. Around 74% people are getting drinking water from pipeline water but sustainability is to be improved so that RMs started to ensure water quality test for access to safe drinking water.

Rural Village Water Resources Management Project (RVWRMP) has been working from 2006 A.D. in Far and mid-western development region (Currently Province No. 7 and 6) supporting to people access safe drinking water and improved sanitation hygiene service. During the first phase, the water quality test mechanism is applied in the survey period, after scheme completed and in Water Safety Plan implementation during the post construction phase. Now the RMs has started ensuring the water quality test in technical support from RVWRMP as piloting.

Regular monitoring and technical backup to water users committee for sustainability of water supply schemes. Strengthening of water users committee in preparation of O&M regulation, timely monitoring, and implementation of Water Safety plan (WSP) and water quality testing.

This article focuses on the ensuring of water quality test started to Rural Municipality in RVWRMP working area in Bajhang district, its challenges and opportunity.

Rural Village Water Resources Management Project (RVWRMP) is working here in Bajhang from first phase of project i.e. since 2008-2009, supporting people to assess safe water and sanitation service by constructing improved water supply systems. Now a days, the project is running with third phase with the same system construction is usually inbuilt with the software and hygiene promotion programs. Integration of the major hardware and software components into a single pack aimed for the sustainability of the water supply and sanitation program. The institutional strengthening of water user’s community for operation and maintenance is one major step in this context. Community after extensive discussion and vigorous interaction within itself, prepare the
water safety plan (WSP) in the form of post construction phase. RVWRMP's support staffs assist community in this context. RVWRMP will undertake water testing to ensure the systems they repair or construct provide safe water at tap stands during dry periods and the monsoon. The project will also monitor household water quality to identify unhygienic management of water.

2. CONCEPT AND REQUIREMENTS.

Stable, safe and clean water supply is the most essential factor for human survival. For Community Systems, World Health Organization (WHO) Drinking Water Guidelines (2011) recommended to visit the water supply schemes once in every 3-5 years using stratified or cluster sampling. They also promote the use of Water Safety Plans to maintain safe water through the community management of the system. RVWRMP has been facilitating WSPs for the small and medium water systems. The National Drinking Water Quality Standards (2005) require microbiological testing to be monitored three times a year (pre-monsoon, during monsoon and post-monsoon season). In addition, water quality monitoring is a target in the Global WASH Log Frame. Hence, Working Rural Municipalities of Rural Village Water Resources Management Project, Bajhang, have been decided to the establishment of water quality ensuring services to secure for providing safe, stable and clean drinking water supply system within the community of Rural Municipality/Municipality.

3. INSTITUTIONAL ARRANGEMENTS AND LINKAGES.

Since the local level have executing power, the RM will thus assess local needs, plan, implement, monitor and follow up the water quality ensuring mechanism creation in the RM/M level program with close coordination with RM-WASH-CC & Local level stakeholders so that Rural Executive Municipal Offices have decided to establish water quality ensuring mechanism in each RVWRMP's working areas. RVWRMP has provided the technical support for planning of water quality ensuring mechanism test to five Rural Municipality/Municipality (Thalara, Masta, Talkot, Chhavispathivera, and Bungal) of Bajhang District. It is the portable ENPHO kit water testing mechanism.

4. ROLE AND RESPONSIBILITY OF RURAL MUNICIPALITY/MUNICIPALITY & OTHER STAKEHOLDERS

Establish, use and operation and maintenance of water quality test ensuring mechanism facilities in Rural Municipality/Municipality requires support of policy and operational level stakeholders. Enabling policy, adequate budget, standard design and norms, proper operation and maintenance, capacitated human resources, application of effective awareness raising materials and rigorous monitoring and supervision are the major factors contributing to sustainability of the water quality ensuring mechanism facilities and behaviors. So, Standard Operating Procedure (SOP) will be made in each Rural Municipality for making the smooth O&M of water quality test facilities. So, the role of the following policy and operation level stakeholders seems inevitable for the effective outcome of the Water Quality Test ensuring mechanism in local level program.
### Table: Roles and Responsibilities of Stakeholders

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<tr>
<th>SN</th>
<th>Stakeholders</th>
<th>Roles and responsibilities</th>
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<tr>
<td></td>
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<td>- Enforcement of budgetary norms.</td>
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<td>- Adequate Annual Development Budget Distribution.</td>
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<td>- Collaboration with National Drinking Water Quality Standard (NDWQS)</td>
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<td>2.</td>
<td>Rural Municipality/Municipality Water Supply and Sanitation Hygiene Coordination Committee (RM/M WASH-CC)</td>
<td>- Conduct advocacy &amp; awareness campaign of water quality for water user’s stake holders.</td>
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<td>- Coordinate for dissemination of behavioral change related materials with messages on water purification and safe water Point of Use of House Hold level (PoU).</td>
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<td>- Validate for declaration of clean and healthy water supply and sanitation scheme.</td>
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<td>- Reward and recognize model schemes individual.</td>
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<td>3.</td>
<td>LocalLevel Stakeholders/ FEDWASUN/Support Organizations: I/NGOs etc.</td>
<td>- Formulation and enforcement of Water Users Committee as per water resources act.</td>
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<td>- Disseminate awareness raising and behavioral change related materials with messages on water quality test, water purification.</td>
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<td>- Monitoring and supervision.</td>
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<td>4.</td>
<td>Local Level Lab. Technician &amp; Focal Person of Lab In charge (Health Section Coordinator of RMS/M)</td>
<td>- Operation and Maintenance of ensuring of water quality of RMS/M.</td>
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<td>- Generate the water quality test report.</td>
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<td>- Analysis of water quality test result and awareness among the patient and community about the water quality issues and the problem related to water borne diseases.</td>
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<td>- Conduct Water Quality Test Fees by RMS/M Rules &amp; Regulations.</td>
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<td>5.</td>
<td>Water User's and Sanitation Committee (WUSC)</td>
<td>- Execution of water quality test of proposed sources of water supply scheme.</td>
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<td>- Adaptation/Motivation of proper hygiene behaviors.</td>
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<td>- Maintenance of cleanliness from sources to mouth level.</td>
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### 5. CAPACITY DEVELOPMENT OF HUMAN RESOURCES FOR WATER QUALITY ENSURING MECHANISM.

RVWRMP had provided two days of technical workshop for planning of water quality ensuring mechanism establishment to five Rural Municipality/Municipality (Thalara, Masta, Talkot, Chhavispathiverea, and Bungal) of Bajhang District. This is the piloting ensuring of water quality test in RVWRMP working districts. The main purpose of water quality test is for awareness.

The major contents of the capacity development orientation/workshop were suitability of water supply scheme, Participants to understand their roles and responsibilities.

The major contents discussed in the training were:
- Concept of National Drinking Water Quality Standards (2062)
- Knowledge sharing of RVWRMP implementation of water quality test
- Local government operational act (2074) responsibility of local level
- Making potential policy of local level for quality improvement
- Water safety plan implementation and challenges
- Water borne disease and Point of Use (PoU)
- Water quality test (Practical Session) by ENPHO KIT.

**Outcome of the Technical Orientation cum workshop**
- Participants were able to make policy of local level for water quality ensuring mechanism.
- Participants were able to collect sample, test and reporting method.
- After report, Technician and Health Post Unit generates awareness among the patient and community about the water quality issues and the problem related to water borne disease.
- Rural Municipality/Municipality chairpersons and stakeholders were positive response for water quality ensuring mechanism and O&M fund.
- Participants were convinced to water quality test ensuring for awareness purpose.
- Lab technicians were able to water quality test by ENPHO test kit.

6. COMMUNICATION OF RESULTS TO COMMUNITY

Results of water quality should always be shared with the community. A test report should be shared with the WUSC, RM-WASH-CC and other local level development partners. Water quality ensuring report should be reported quarterly to the RMs/M-WASH-CC and W-WASH-CC. Analysis of result are a form of risk assessment designed to evaluate the water supply to see if there is a contamination in water, then the sample would be sent to the reliable laboratory. Test report indicates the status of the water quality, help to identify the interventions of water supply schemes and allow the community to monitor their supply.

7. CHALLENGES

- Regular testing problem.
- Unavailability of re-agent in local and provincial level.
- Human Resources problem.
- Regular follow up and monitoring.
- Allocation of Budget.

8. OPPORTUNITY

- Awareness of water borne diseases and sustainable sanitation and behavior change.
- Identify existing problem.
- Ensure of water quality sustainability for the future.
- Ensure safe drinking water in local level.
- Determine the effectiveness of the structure design and estimation.
- Initiation and promotion of total sanitation indicator.

9. CONCLUSION

Sustainability of water quality ensuring mechanism in RMs/M requires the financial and managerial collaboration of sector wise public health section of rural municipal executive body. Apart from the support of RMs, mobilization local human resources is equally important to fulfill resource gaps and build ownership of local level stakeholders. In addition, ensuring of water quality test fund seems useful especially for the operation and maintenance of facilities. For effective implementation of the water quality ensuring mechanism in RMs/M, the following budgetary sources has been proposed but not limited to:

- Annual development budget of the RMs/M.
- Funds contributed by agencies and NGOs.
- Reward and recognition given by external agencies for further upgrading the laboratory facilities.
- Funds generated by RMs/M itself for water quality test fees, awareness generation campaign etc.
8. ANNEXES:
- This database Water Quality Test Report developed by RVWRMP for RMs /M.

<table>
<thead>
<tr>
<th>SN</th>
<th>Scheme Name</th>
<th>Water Quality Test Report</th>
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<th>Rural Municipality/ Municipality</th>
<th>NWP Implementation Year</th>
<th>Date of NWP Project</th>
<th>PH</th>
<th>Temperature</th>
<th>Ammonia</th>
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<th>Iron</th>
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Prepared by:
Date:

Note: This report is not subjected to deal for legal validation. It is used for public awareness purpose only.

- This database WQ Test Sample Frequency Sheet was developed by RVWRMP for RMs /M.

इन्स्ट्रूक्शन (ENPHO Kit)बाट परिचय गर्ने विधिहरू:
यामित्र फुलो खानेपानी प्रशासनमा परिचित वनोज्जिनको नमुना परिचय गर्ने

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मन्त्री तथा संचार गणिका संचरण पूर्ण निर्माण गरिएका योजनाको निस्कर्ष बोजनाको

योजना निर्माण परिचात | P/A Vial | मुल/खौसा, आर. मि. टि., धारी निरीक्षण | एक पटक |

मुल/खौसा, आर. मि. टि., धारा, पर | कृतिनिर्देशन गर्ने परिचात | P/A Vial. Chlorine | मुल/खौसा, आर. मि. टि., धारा र पर परिचय | एक पटक |

मुल/खौसा, आर. मि. टि., धारा, पर | पहिला सुरक्षा योजना तत्त्वको सम्पन्नता | P/A Vial. | मुल/खौसा, आर. मि. टि., धारा र पर परिचय | एक पटक |

मुल/खौसा, आर. मि. टि., धारा, पर | कृतिनिर्देशन परिचात | P/A Vial. | मुल/खौसा, आर. मि. टि., धारा र पर परिचय | प्रशिक्षेत्र वर्ष |

मुल/खौसा, आर. मि. टि., धारा, पर | उपसोसले आवश्यकता अनुसार परिचय गराउन दाने | P/A Vial. | मुल/खौसा, आर. मि. टि., धारा र पर परिचय | आवश्यकता अनुसार |

PH | Ammonia | Iron | Nitrate | Chloride | Total Hardness | PH Wa | Kept |

मूल/खौसा, आर. मि. टि., धारा, पर | समाप्त | P/A Vial. | मूल/खौसा, आर. मि. टि., धारा र पर परिचय | प्रशिक्षेत्र वर्ष |

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