

# Drinking Water Safety in Mid-Western Nepal: Insights from Project Scoping

Implementing effective and sustainable strategies for drinking water safety in rural communities is a global challenge. An essential prerequisite to establishing a viable approach is to assess and understand the country context and unmet needs regarding drinking water quality. Ariane Schertenleib<sup>1</sup>, Madan Raj Bhatta<sup>2</sup>, Bal Mukunda Kunwar<sup>2</sup>, Rubika Shrestha<sup>2</sup>, Sara Marks<sup>1</sup>

## Introduction

In the post-2015 development period, water sector professionals will be challenged by Sustainable Development Goal Target 6.1 (SDG 6.1) to deliver “universal and equitable access to safe and affordable drinking water for all”; free from faecal and priority chemical contamination. In Nepal, over 90 % of rural households have access to an improved drinking water source, such as boreholes or gravity-fed piped schemes [1]. Yet, improved water schemes do not ensure water free of faecal contamination, necessitating efficient water quality monitoring strategies [2].

In remote rural settings, the collection, management and analysis of water quality information is hampered by multiple barriers, including long traveling distances and times, unreliable supply chains for sampling materials, the high cost of laboratory equipment, and unreliable or non-existent access to electricity. Rural communities in alpine regions of Nepal exemplify many of these challenges.

Through a one-year study that began in January 2017, Eawag and HELVETAS-Nepal aim to establish a risk-based water safety strategy for piped water supplies in the Mid-Western Region. The goal of the study is to demonstrate a viable approach to achieving effective water safety planning for rural communities in alpine settings.

## Scoping activities

Before implementing the project the team conducted an in-depth scoping study to assess the current situation. The goal of scoping was to: understand the water sector’s current activities related to drinking water quality, define the unmet needs regarding water quality monitoring within a water safety framework, identify key stakeholders in this domain, and gain knowledge about the definitions of standards, roles and responsibilities in the country.

To gather this information, the scoping visit included several activities: face-to-face meetings with governmental representatives, NGOs and local stakeholders; field visits in rural areas; and organising a national

workshop. The national workshop gathered 21 attendees from government, NGO, and academia, a subset of whom contributed presentations. Emphasis was placed on group discussions and reflection to identify needs and possible ways forward. The overall goal of these discussions was to ensure that the proposed project would not repeat ongoing efforts and experiences in Nepal, meet the government’s needs, and effectively fill a gap in the domain of water safety.

## Results and work preparation

In Nepal, water quality surveillance is linked to many organisations and actors across public and private sectors. There are six governmental laboratories in the country (one per region and one central). Roles and responsibilities for water quality monitoring and surveillance are defined in the National Drinking Water Quality Standards, edited in 2005 by the government of Nepal [3]. Following the national workshop, the team visited the responsible branches mentioned in the Standards document for the Mid-Western region and learned that there was a lack of coordination among actors responsible for water quality surveillance.

The Government of Nepal and WHO provided WAGTECH field test kits to each regional laboratory for sampling across rural areas. Discussions and follow-up visits concluded that these kits are hardly used due to malfunction of the materials and lack of training on the operation of the kit. The WHO Water Safety Planning (WSP) approach is dominant in Nepal, but according to implementers, very few rural WSPs are audited or functioning as expected. It clearly appears that the biggest challenge for achieving water safety in the Mid-Western Region is not a lack of adequate material, but rather inadequate staff training and lack of a defined coordinated strategy.

## Conclusion

This scoping phase clarified many challenges and unmet needs for achieving universal access to safe drinking water in Nepal. Field visits, meetings, and a national workshop



Photo 1: Scoping activities in Mid-Western Nepal.

revealed that the “ground truth” of rural water quality management often diverges from official policy recommendations. This information shaped the project’s eventual implementation strategy to include targeted sanitary inspections, field laboratory units equipped with microbial and chemical testing capacity, scheme-level treatment upgrades, and centralised data management using Akvo FLOW. Scoping activities also increased awareness on the topic, with sector actors discussing together how to improve the situation and better fulfil their tasks.

- [1] WHO JMP (2015): Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment.
- [2] Bain, R., Cronk, R., Wright, J., Yang, H., Slaymaker, T., Bartram, J. (2014): Faecal contamination of drinking-water in low- and middle-income countries: a systematic review and meta-analysis. *PLOS Medicine* 11 (5), e1001644.
- [3] Nepal National Drinking Water Quality Standards (2015): Department of Water Supply and Sewerage and World Health Organization.

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