

DRINKING WATER QUALITY IN BANGLADESH 2021 UPDATES



KEY FINDINGS FROM THE BANGLADESH MULTIPLE INDICATOR CLUSTER SURVEY (MICS) 2019: WATER QUALITY THEMATIC REPORT



WHO HAS ACCESS TO SAFELY MANAGED

DRINKING WATER?

Safely managed drinking water¹ comes from an improved drinking water source, is located on premises, with sufficient drinking water available when needed, free of faecal and priority chemical (arsenic) contamination. It is a high service level that addresses the human rights of quality, availability and accessibility.



99%

have access to improved water sources.



77%

have access to water that is improved, sufficient, and on premises.



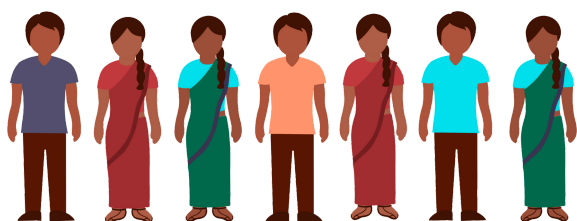
67%

have access to water that is improved, sufficient, on premises, and meets the Bangladesh standards for arsenic (As < 50 ppb).



43%

have access to water that is improved, sufficient, on premises, meets the Bangladesh standards for arsenic and is free of faecal contamination.



Each person represents 10 million people

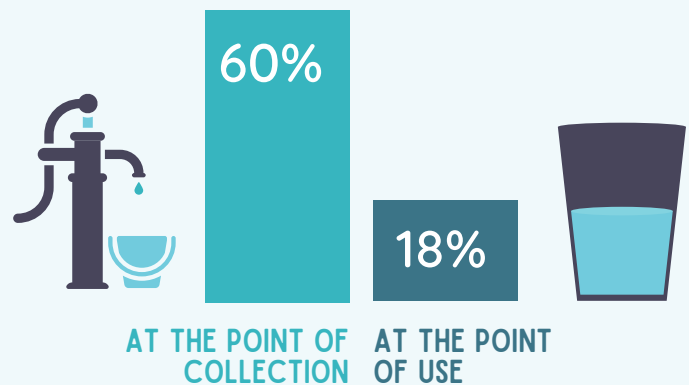
70 Million

People have access to **safely managed water** in Bangladesh.

¹ WHO/UNICEF. (2017). *Safely managed drinking water - thematic report on drinking water 2017*. Geneva, Switzerland.

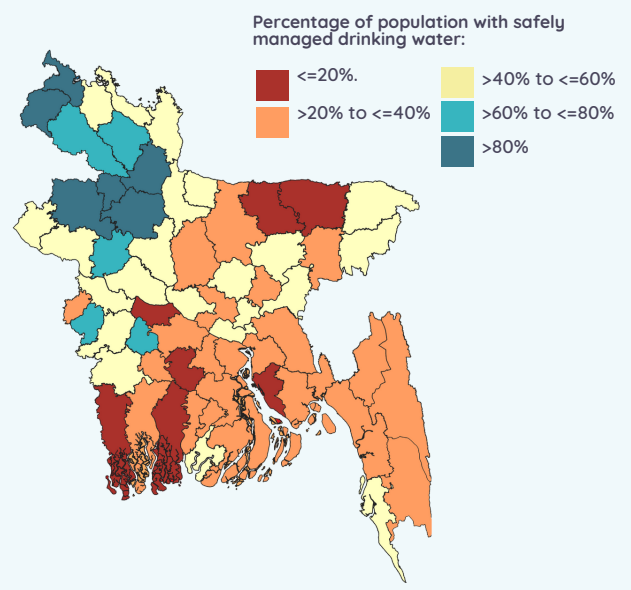
The biggest challenge to achieving safely managed drinking water quality remains faecal contamination.

Percentage of the population that has access to water free from faecal contamination (*E.coli*):



E.coli bacteria indicate possible faecal contamination and the presence of pathogens that cause diarrhoea, dysentery, cholera and typhoid.

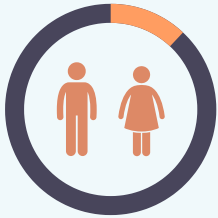
There are large inequalities in access to safely managed drinking water between districts.



Recommendation: water safety programmes need to target highly contaminated and unserved areas.

IS ACCESS TO ARSENIC SAFE WATER

IMPROVING?



11%

of the population is exposed to arsenic above the Bangladesh standard in drinking water (50 ppb).

The proportion of people exposed to:

<10 ppb

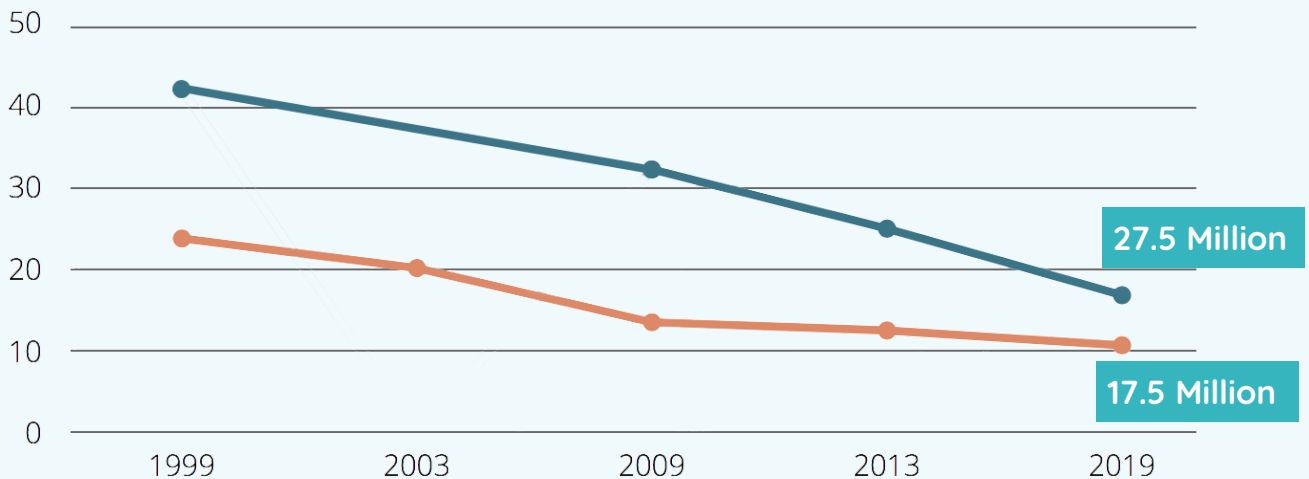
(WHO guideline) has continued to decrease.



<50 ppb

has only slightly reduced.

% OF THE POPULATION EXPOSED TO ARSENIC: >10 PPB AND >50 PPB.



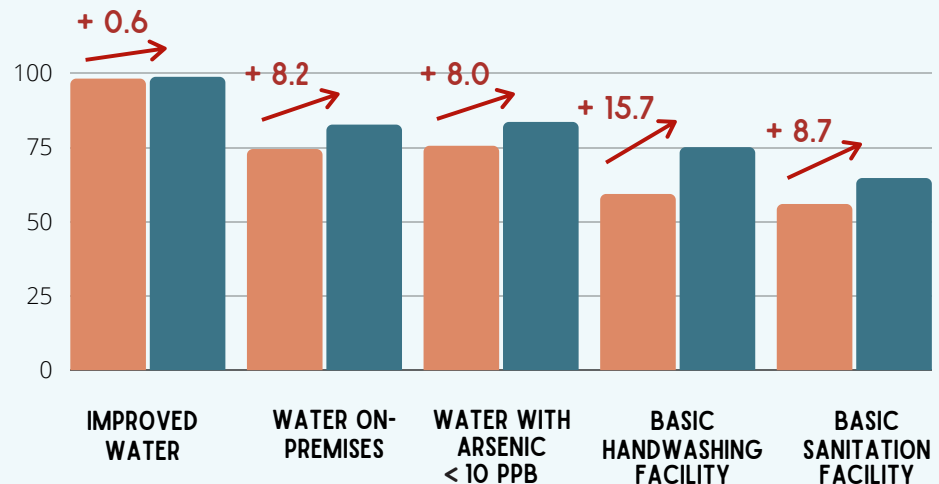
The proportion of the population exposed to high concentrations (>200 ppb) has increased in Sylhet, Chattogram, Khulna and Dhaka divisions.



The risks of arsenic vary with geological conditions.

HOW HAS ACCESS TO WASH CHANGED?

Access to water, sanitation and hygiene (WASH) has improved in Bangladesh between **MICS5 (2012-13)** and **MICS6 (2019)**

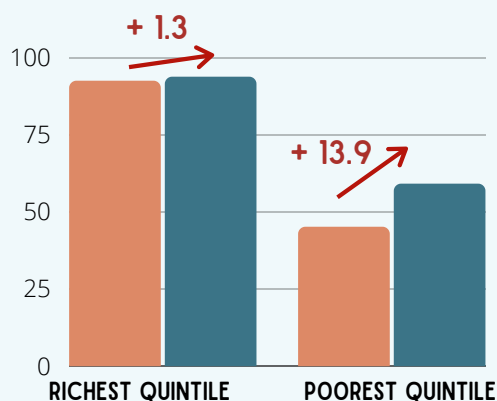


WASH access is unequal: the wealthiest households have the highest levels of access, and the poorest households have the lowest levels.

Good progress has been made within the poorest households, for some indicators.



Water on-premises has improved most for the poorest, as has access to basic sanitation.



ACCESS TO WATER ON PREMISES - **MICS5 (2012-13)** VS. **MICS6 (2019)**

But in other areas, improvements have **not benefitted the poorest:**

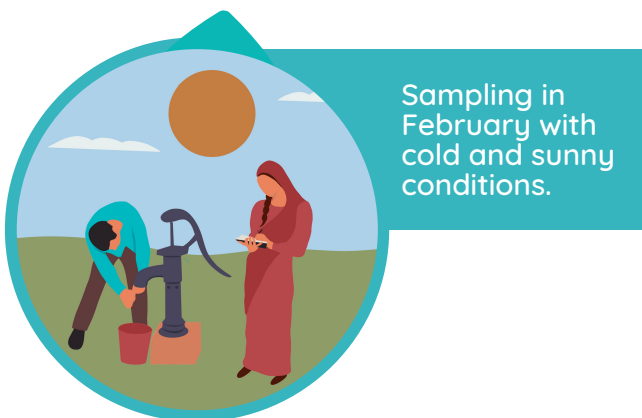
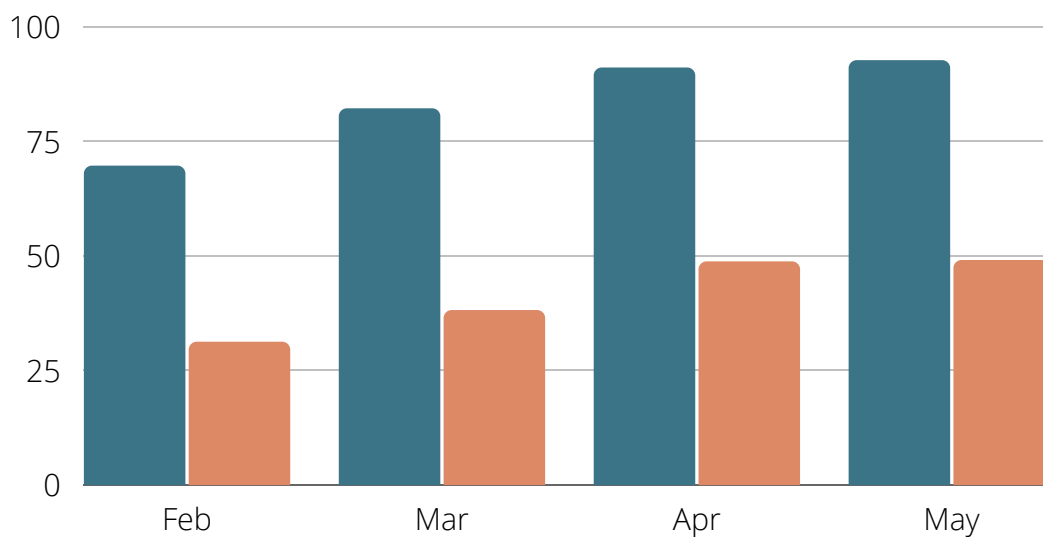
- Access to improved water has not improved for the poorest.
- Access to piped water has mostly increased for the urban population, and for the richest.
- Arsenic has improved most for the wealthiest (both in the <10 ppb category, and drops in the proportion in the 10-50 ppb category).
- Handwashing facilities have not improved much for the poorest.

CHALLENGES: WATER SUPPLIES HAVE POOR CLIMATE RESILIENCE



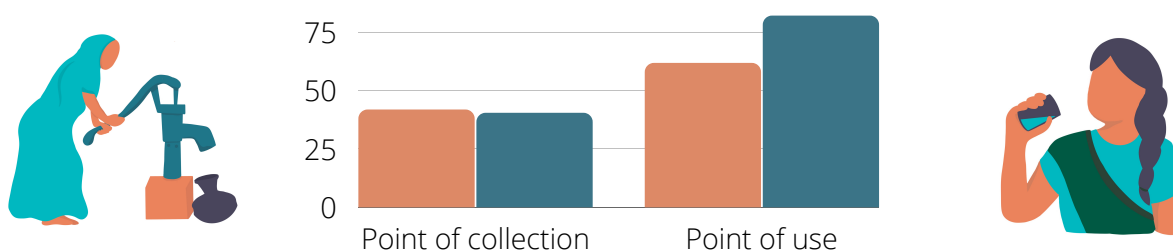
- Weather changes (seasonality) affect the quality of the water sampled. Faecal contamination increased at the point of water collection and point of use across the study from January to May, as rainfall and temperature increased.
- Drinking water systems that are vulnerable to changes in weather are not climate resilient.

PROPORTION OF SAMPLES THAT ARE UNSAFE AT THE POINT OF USE AND AT THE POINT OF COLLECTION



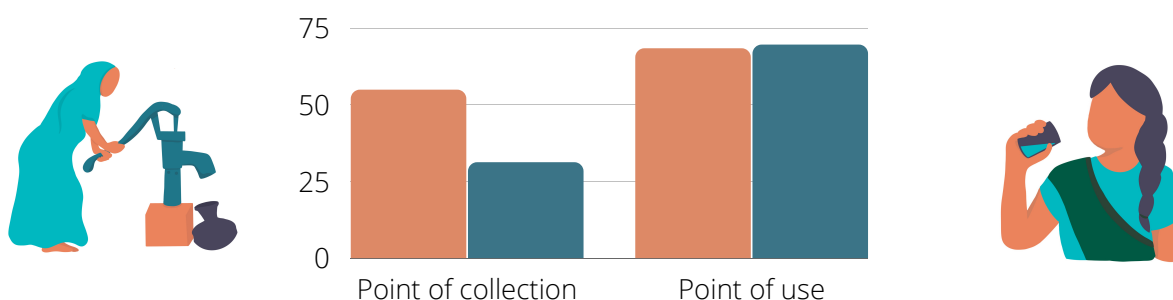
In MICS6, overall, the proportion of people with access to a water source without faecal contamination has remained about the same at the point of collection, and it has decreased at the point of use compared with MICS5.

PROPORTION OF THE POPULATION WITH FAECAL CONTAMINATION IN THEIR DRINKING WATER (ALL MONTHS) | MICS5 (2012-13) AND MICS6 (2019)



However, sampling for the two studies was completed at different times of the year, and hence under different weather conditions. Comparing samples that were collected in the same month suggests that water quality in MICS6 has improved at the point of collection, but not changed at the point of use, compared to MICS5.

PROPORTION OF THE POPULATION WITH FAECAL CONTAMINATION IN THEIR DRINKING WATER (FEBRUARY ONLY) | MICS5 (2012-13) AND MICS6 (2019)



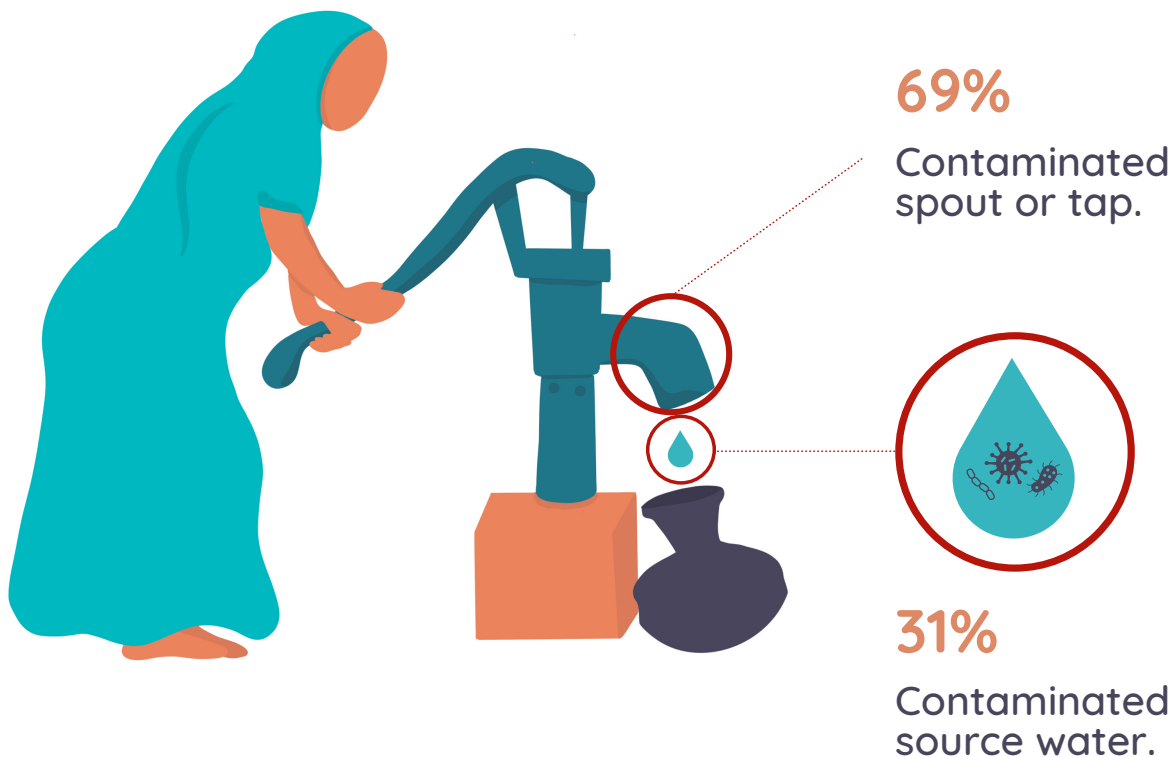
Recommendation: Strengthen climate resilience of water supplies through water safety planning, and monitor through routine (seasonal) testing.

CHALLENGES: POOR HYGIENE IS A MAJOR SOURCE OF CONTAMINATION

About
2/3

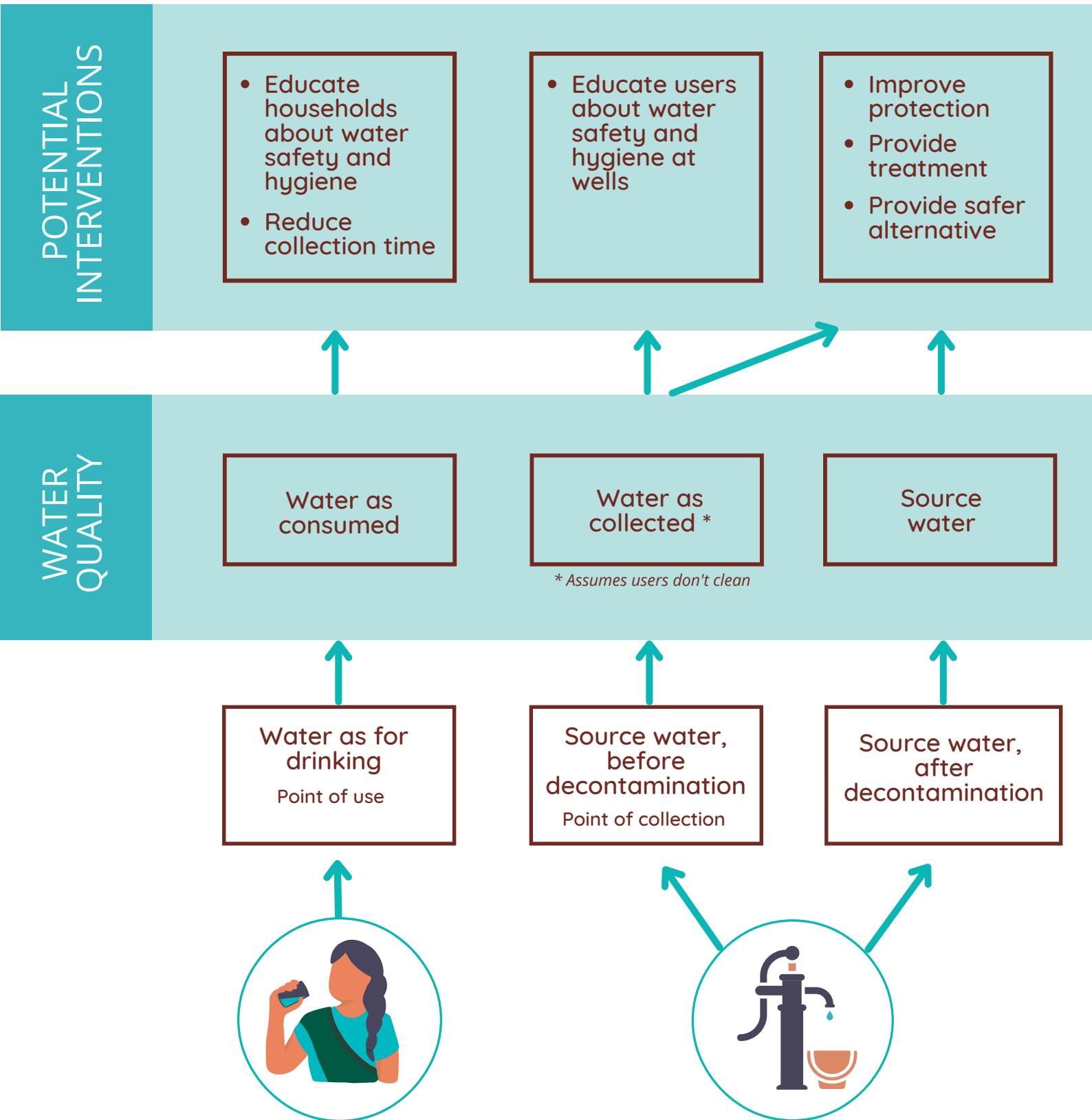
of faecal contamination of drinking water was related to poor hygiene at the point of collection.

CONTAMINATION AT POINT OF COLLECTION IS DUE TO:



Recommendation: Ensure water safety plans include regular cleaning of taps and spouts.

Water quality samples tell us about hygiene conditions as well as the water quality at the source. It is important to consider where and how we sample drinking water for faecal contamination to inform interventions.



CHALLENGES: MANY WATER SUPPLIES

FACE MULTIPLE, UNMEASURED WATER

QUALITY HAZARDS



In 2009, the MICS study included many more water quality parameters:



61%

of samples exceeded the Bangladesh standard for manganese (0.1 mg/L)



12%

of samples exceeded the Bangladesh standard for sodium, with higher concentrations in deep tube wells.

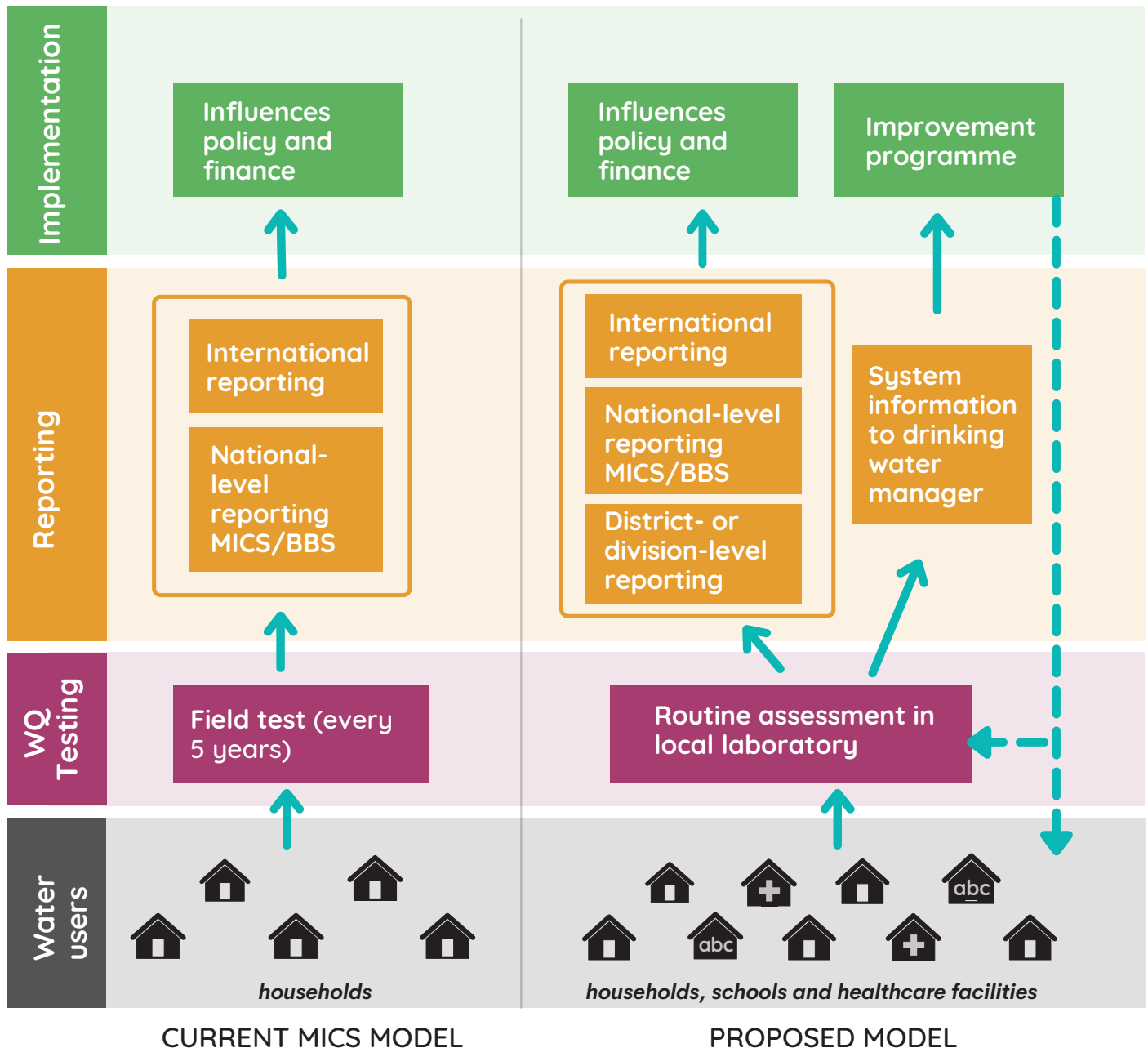
Arsenic and pathogens (as measured by the indicator *E.coli*) are important hazards, but salinity and manganese are also health threats.

Recommendations:

- Expand access to treated water;
- Incorporate salinity and manganese in water quality surveys.

ADVANCING WATER SAFETY

The MICS water quality module has provided a useful national snapshot of water quality issues, but is of limited use to inform improvements due to data not being available to local water managers and infrequent sampling.



Recommendation: Establish a routine water quality monitoring programme, building capacity for local laboratories, making data available to water managers and enabling assessment of climate impacts.

▶ Contact: Dr Katrina Charles, katrina.charles@ouce.ox.ac.uk

The findings presented are based on the report "Bangladesh MICS 2019: Water Quality Thematic Report", Government of Bangladesh, Bangladesh Bureau of Statistics, and UNICEF, 2021.

This booklet, and the illustrations within it, were prepared by the REACH Programme ©

REACH is funded by UK Aid from the UK Foreign, Commonwealth and Development Office (FCDO) for the benefit of developing countries (Programme Code 201880). However, the views expressed and information contained in it are not necessarily those of or endorsed by FCDO, which can accept no responsibility for such views or information or for any reliance placed on them.