Water supply: addressing safety and intermittency

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MDG target met

Between 1990 and 2012:
  2.3 billion gained access to an improved source
  1.6 billion to piped water on premises

Yet improved sources do not always deliver
safe and sustainable water services
Sector post-2015 proposals: targets

By 2030:

• to eliminate open defecation;

• to achieve universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities;

• to halve the proportion of the population without access at home to safely managed drinking water and sanitation services; and

• to progressively eliminate inequalities in access.
Basic
improved source
collection time ≤30 minutes

Safely-managed
on premises
accessible to all members of the household
sufficient water to meet domestic needs (non-functional ≤ 2 days in the last 2 weeks)
meets WHO guideline values (for *E. coli*, fluoride and arsenic)
subject to a verified risk management plan
WATER QUALITY
Faecal contamination

≈2 billion people use a source containing *E. coli*

WQ in HH surveys: approach

Quality assessed at both the household and water source

Field-based membrane filtration for *E. coli*

- Quantitative (risk levels)
- Electric/body belt incubation
- Blanks for QC

Arsenic and fluoride optional

MICS Nepal 2013
WQ in HH surveys: experience

Pilot surveys
  Bangladesh
  Ghana
  Nepal (ongoing)
  Congo, Brazzaville (ongoing)

Promotes action on water safety and risk management

Ghana LSMS 2013
Source water: ≈40% with *E. coli*
Household water: ≈70% with *E. coli*
INTERMITTENT ACCESS
Intermittent access

Piped supplies are often intermittent

Not continuous
(e.g. piped supplies)

Not functional
(e.g. broken handpumps)

Seasonally available
(e.g. rainwater)

Source: Shaheed et al. (2014) based on IBNET data
Many in Somalia have problems accessing water

- Not continuous (e.g. piped supplies)
- Not functional (e.g. broken handpumps)
- Seasonally available (e.g. rainwater)

*Have problems: daily, weekly, occasionally or seasonally

Source: Somalia MICS 2006
### Example HH survey questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
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| **WS6A. Does your main drinking water source give you a reliable supply?** | Yes, almost never problems .................................................. 1  
Occasional problems, but less than weekly .................................. 2  
Weekly problems ........................................................................... 3  
Daily problems .............................................................................. 4  
Seasonal supply ............................................................................ 5  
DK .................................................................................................. 8  |
| **WS4A. What is the availability of this source of water used for drinking?** | Seasonal .......................................................................................... 1  
Perennial ......................................................................................... 2  
DK .................................................................................................. 3  |
| **WS4C. Is there water available today from this source?**               | Yes ............................................................................................... 1  
No .................................................................................................. 2  
DK .................................................................................................. 8  |
| Do you have water continuously ?                                        |                                                                                   |
| YES                                                                     | 1 >> 5                                                                            |
| NO                                                                      | 2                                                                                 |
| How many hours in a day, on average, did dwelling receive water during last week? | HOURS                                                                              |
Potential question and indicator

In the last two weeks, how many days has your family been unable to access enough drinking water to meet its needs?

Indicator: % of households unable to access enough drinking water [for more than two days] during the last two weeks
Some next steps

Finalise water quality module (MICS) and encourage uptake by hh surveys programmes

Assess feasibility of monitoring risk management (e.g. WSPs, sanitary inspections)

Select and validate question(s) to address intermittency

Explore alternative measures (e.g. chlorine residual) and new data sources (e.g. regulators, utilities)