

Appendix I- Survey Instrument for a WSP Household Survey

The following sample questionnaire was designed based upon the conditions and issues of potential concern that were revealed through pre-survey planning. It was used as a template for various household surveys for WSPs in resource-limited settings with an organized piped water supply system in the Caribbean and Latin America. Population size of the surveyed areas ranged from 30,000 to 120,000. Most households received water directly to their homes from a piped water supply system. Others had yard or shared taps, or they used water from rivers or rain. For each target area, there were areas that were not connected to the municipal water system or that had unauthorized connections. Storage in household storage tanks and secondary treatment within the home were common as a result of frequent interruptions in water service and pressure.

Some questions contained in this sample may not be relevant to a given setting, or there may be other pertinent information that is not included here. Questions that will not contribute to the report should not be included. Notes on survey questions are embedded in the questionnaire in blue print. Alternatives for some questions are also provided. If, for example, surveyors are typically invited into the home during the survey, some questions may be replaced by direct observation. These alternative questions are also embedded in the text in blue print.

Household Water Use and Health Survey for a Water Safety Plan

Administer informed consent. If subject agrees to participate, proceed to questionnaire.

HH#: _____ Date of interview: ____/____/____
 Visit# Survey day Interviewer#
DD MM YY

*THIS IS ONE SUGGESTION FOR CREATING A UNIQUE HOUSEHOLD IDENTIFICATION NUMBER.
ASSIGN EACH INTERVIEWER A NUMBER TO BE USED FOR THIS CODING SYSTEM.*

Community: _____

Water treatment plant service area: WTP A WTP B WTP C
*IF MORE THAN ONE WATER TREATMENT PLANT SERVES THE SURVEY AREA, IT IS IMPORTANT TO
NOTE THE WATER TREATMENT PLANT SERVICE AREA OF THE HOME.*

Location/Description of house if need to return:

*NOTE THAT THIS INFORMATION SHOULD NOT BE RETAINED IN THE DATABASE; IT IS ONLY FOR
USE BY THE SURVEYOR FOR LOCATION OF A HOUSE THAT NEEDS TO BE REVISITED.*

A. HOUSEHOLD CHARACTERISTICS

1. Age of respondent (yrs) a. 18-29 b. 30-39 c. 40-49 d. 50+
ADJUST AGE CATEGORIES AS DESIRED.
2. Gender of respondent a. Female b. Male
3. How many people, including you, live in this household? _____
4. This house is.....? (Tick one)
a. Owned b. Rented/Leased c. Rent-free
d. Informal settlement (squatter) e. Other _____
ADJUST HOUSING OPTIONS AS APPROPRIATE
5. What is the highest level of education completed by the female head of household?
a. None b. Primary c. Secondary d. Vocational
e. College /University f. Don't know g. N/A
ADJUST EDUCATION OPTIONS TO REFLECT LOCAL EDUCATION SYSTEM

B. WATER USE PRACTICES

6. Where do you get the water you use at home? (Include water for all purposes—
drinking, cooking, cleaning, garden, etc. Record all answers)

a. <input type="checkbox"/> Household tap	f. <input type="checkbox"/> Rain water collection
b. <input type="checkbox"/> Private tap in yard	g. <input type="checkbox"/> River/Stream/Creek
c. <input type="checkbox"/> Public/shared standpipe	h. <input type="checkbox"/> Spring
d. <input type="checkbox"/> Neighbor's tap	i. <input type="checkbox"/> Refilling Station
e. <input type="checkbox"/> Purchased bottled water	j. <input type="checkbox"/> Other (specify) _____

LIST APPLICABLE AND MOST ANTICIPATED RESPONSES ONLY

7. Does your tap provide water 24 hours a day? Y N No tap
(If No Tap, skip to #12)
8. *If no*, for how many hours a day on average are you *without* water? ____ hrs.
9. Are there times when the water pressure is low? Y N
10. Have there been periods in the past year with no tap water service for several days at a time? Y N
11. When there is no water or the pressure is low, where do you get your water? (*Tick all that apply*)
- | | |
|--|--|
| a. <input type="checkbox"/> Water stored in tank | f. <input type="checkbox"/> Purchase bottled water |
| b. <input type="checkbox"/> Water stored in drum or bucket | g. <input type="checkbox"/> Receive trucked water |
| c. <input type="checkbox"/> Rain water | h. <input type="checkbox"/> Do nothing/wait for |
| d. <input type="checkbox"/> Well | water to return |
| e. <input type="checkbox"/> Creek/river/spring | i. <input type="checkbox"/> Other (<i>specify</i>) _____ |

LIST APPLICABLE AND MOST ANTICIPATED RESPONSES ONLY

12. Do you consider your water shortages to be a ... ? (*Read options*)
- a. Big problem b. Somewhat of a problem c. No problem
13. Do you have a water storage tank? Y N (*If No, skip to #19*)
- ASK THE FOLLOWING QUESTIONS IF THERE IS HEAVY RELIANCE ON HOUSEHOLD STORAGE TANKS IN THE STUDY COMMUNITY.*
14. *If Yes*, is tank... a. Elevated b. Ground level c. Underground
15. Does your tap water pass through the tank?
Y N Sometimes (valve) Don't know No tap

THIS IS IMPORTANT IN ANALYSIS BECAUSE SOME TAP WATER SAMPLES WILL HAVE SPENT RESIDENCE TIME IN A STORAGE TANK; THEREFORE, WHEN COMPARING WATER QUALITY TEST RESULTS BETWEEN DIFFERENT SOURCES (WATER COMING FROM THE TAP VS. A TANK OR DRINKING WATER CONTAINER, E.G.), SAMPLES THAT HAVE PASSED THROUGH A TANK SHOULD BE CONSIDERED TANK SAMPLES (EVEN IF THEY HAVE BEEN TAKEN FROM THE TAP).

16. When was the last time your tank was cleaned (*read options*)?
- a. <3 mos b. 3-12 mos c. 1-5 yrs
d. >5 yrs/never e. Don't know
17. Do you add chlorine or bleach to your tank?
 Y N (*If No, skip to #19*) Don't know
18. When was the last time you added chlorine or bleach?
a. < 2 wks. ago b. 2-4 wks. ago c. > 1 month ago
19. How much do you pay per month for water service? _____ dollars/mo
ADJUST FOR LOCAL CURRENCY
20. How much do you pay per month for other water? _____ dollars/mo *ADJUST FOR LOCAL CURRENCY*
21. Do you think that the water from your tap is safe to drink?
- a. Yes (always/most of the time) (*If Yes, skip to #23*)
b. No
c. Not sure/sometimes
d. No tap
22. *If not Yes*, why not? (*Do not read responses. Tick all that are mentioned*)
- a. Water's appearance (dirty/cloudy/color/particles)

- b. Bugs/worms/bacteria
 - c. Chemical or pesticide contamination (do not include chlorine)
 - d. Too much chlorine
 - e. Tastes or smells bad (incl. chlorine)... of what? _____
 - f. Makes me ill/bothers stomach
 - g. Heard through media coverage or word of mouth
 - h. Other (*specify*) _____
23. Where do you get your water for **drinking** at home? (*Read options and tick all that apply*)
- a. Direct from tap (household, yard or standpipe)
 - b. Household storage tank or barrel
 - c. Well
 - d. Rain water collection
 - e. River/creek
 - f. Spring
 - g. Purchase bottled water
 - h. Other (*specify*) _____

LIST APPLICABLE AND MOST ANTICIPATED RESPONSES ONLY

24. Do you normally treat your drinking water at home? Y N (*If No, skip to #26*)
25. *If Yes*, How do you normally treat it? (*Tick all that apply*)
- a. Boil
 - b. Filter (e.g. Brita, Pur)
 - c. Add chlorine or bleach
 - d. Solar disinfection
 - e. Other (*specify*) _____
26. Do you normally keep drinking water in a drinking water container?
 Y N (*If No, skip to #28*)
27. In what sort of container do you normally store your drinking water?
- a. Closed container (e.g., bottle, narrow-neck jug)
 - b. Open container (e.g., pitcher, bucket, pan)
 - c. Other (*specify*) _____

ALTERNATIVE QUESTION (REPLACES #26 AND #27):

CAN YOU PLEASE GIVE ME A CUP OF DRINKING WATER? (OBSERVE WHERE WATER IS STORED)

A. IS THE DRINKING WATER CONTAINER KEPT COVERED?

B. HOW DOES RESPONDENT SERVE THE WATER?

i. USES A CUP FOR DIPPING (HANDS MAY TOUCH WATER)

ii. USES A LADEL (LONG HANDLE, HANDS DON'T TOUCH WATER)

iii. POURS IT OR TURNS SPIGOT ON CONTAINER

iv. OTHER (SPECIFY) _____

C. HYGIENE AND SANITATION

28. When you wash your hands, how often do you use soap? (*Read options*)

- a. Always/almost always b. Sometimes c. Never/almost never

ALTERNATIVE QUESTION (REPLACES #28):

- C. IS THERE A PLACE FOR HAND WASHING? Y N
 D. IF YES, IS SOAP OBSERVED AT HAND WASHING LOCATION?
 Y N

29. What kind of toilet facility do you use?
 a. Flush toilet to sewer system
 b. Flush toilet to septic tank
 c. Pit latrine
 d. Other (specify) _____

LIST APPLICABLE AND MOST ANTICIPATED RESPONSES ONLY

30. If pit latrine, how many people use the latrine on a regular basis? _____

31. How do you dispose of your solid waste? (Tick all that apply)

- a. Collected d. Dump
 b. Burn e. Compost
 c. Bury f. Other (specify) _____

LIST APPLICABLE AND MOST ANTICIPATED RESPONSES ONLY

D. HEALTH AND COMMUNITY CONCERNS

32. How many children under age 5 live here? _____ (If zero, skip to #40)

33. Has this child/have these children had diarrhea **in the past 2 weeks?**

(Diarrhea refers to ≥ 3 loose or watery stools in a 24-hour period)

- Y N (if No, skip to #36)

If yes, what was done about it?

CHILD 1 CHILD 2 CHILD 3

(33.) (34.) (35.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. Taken to hospital/ health center
 b. Taken to private clinic
 c. Purchased meds/ORS at pharmacy
 (no facility visit)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- d. Home remedy, specify _____
 e. No action/Went away on its own

36. Has this child had any other illness in the past 2 weeks?

- Y N (if No, skip to #40) If yes, specify:

CHILD 1 CHILD 2 CHILD 3

(37.) (38.) (39.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. Skin infection
 b. Respiratory infection
 c. Accident/Injury
 d. Other, specify: _____

40. Has any other household member (\geq age 5) had diarrhea **in the past 2 weeks?**

(Diarrhea refers to ≥ 3 loose or watery stools in a 24-hour period)

- Y N (if No, skip to #44)

If yes, what was done about it?

PERSON 1 PERSON 2 PERSON 3

(41.) (42.) (43.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a. Taken to hospital/ health center
 b. Taken to private clinic

c. Purchased meds/ORS at pharmacy
(no facility visit)

d. Home remedy, specify _____

e. No action/Went away on its own

44. Has any other household member (≥ age 5) had any other illness in the past 2 weeks?

Y N (If no, skip to #48) If yes, specify:

PERSON 1 PERSON 2 PERSON 3

(45.) (46.) (47.)

a. Skin infection
b. Respiratory infection
c. Accident/Injury
d. Other, specify: _____
e. Other, specify: _____

48. For the following questions, please indicate whether you consider these issues to be “a big problem”, “somewhat of a problem”, or “not a problem”:

- a. Water quality or quantity:
 A big problem Somewhat of a problem Not a problem
- b. Rubbish or pollution:
 A big problem Somewhat of a problem Not a problem
- c. Crime or violence:
 A big problem Somewhat of a problem Not a problem
- d. Diarrhea or stomach ailment:
 A big problem Somewhat of a problem Not a problem
- e. Mosquitoes or malaria:
 A big problem Somewhat of a problem Not a problem
- f. HIV/AIDS:
 A big problem Somewhat of a problem Not a problem
- g. Other chronic diseases (Diabetes/Cancer/Hypertension):
 A big problem Somewhat of a problem Not a problem
- h. Respiratory illnesses:
 A big problem Somewhat of a problem Not a problem
- i. Skin infections:
 A big problem Somewhat of a problem Not a problem

50. Are there any other major health problems or environmental concerns for (this community)? specify _____

IDENTIFY 6–10 COMMUNITY CONCERNS THROUGH DISCUSSION WITH LOCAL PERSONNEL, HEALTH DEPARTMENT, MEDIA SOURCES, ETC., AND LIST MOST ANTICIPATED RESPONSES

E. TEST RESULTS

Was sample collected?

51. Free CHLORINE **direct from tap**Result: _____

52. Free CHLORINE **from tank**.....Result: _____

53. Free CHLORINE **from drinking water container**.....Result: _____

(54.) *Ask about the source of this drinking water container sample
(may need to probe)*

- a. Untreated tap water
- d. Storage tank

- b. Boiled tap water e. Other (specify) _____
c. Tap water with chlorine or bleach

WHEN ANALYZING THIS DATA, IT IS OF INTEREST TO COMPARE WATER IN DRINKING WATER CONTAINERS FROM DIFFERENT SOURCES.

Collect the following samples in sterile plastic bottles and label it with household ID#, date, and "TAP" or "DWC". Sample must be kept cold. Call for immediate sample pick-up.

Y N

55. Sample collected from **tap** for MICROBIOLOGY TESTING
56. Sample collected from **drinking water container** for MICROBIOLOGY TESTING

QUESTIONS 55 AND 56 ASSUME THAT SAMPLES ARE BEING EVALUATED FOR COLIFORM BACTERIA USING A LOCAL LABORATORY OR DEL AGUA FIELD TEST KIT. SHOULD BE CHANGED ACCORDINGLY IF A DIFFERENT METHOD IS USED OR IF MICROBIOLOGICAL TESTING IS NOT DONE.

Thank you very much for taking part in this interview