

APPENDIX A
DATA COLLECTION

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A.1 METHODS OF DATA COLLECTION

A.1.1 Collection of Secondary Data

1. When preparing new projects, examination of secondary data will always have to take place, whereas gathering of primary data is only needed when secondary data are considered insufficient or unreliable. The sources of secondary data are given in the box below.

Box 1 Sources of Secondary Data

1. Water enterprises: Financial and Technical Reports, Customer Information, reports of utilities in similar areas;
2. Local government agencies: Urban and Regional Development Plans, Demographic Data, Socioeconomic Reports, Statistical Reports, etc.
3. Non-governmental organizations: Survey Reports, Publications, etc.
4. Universities: Research Publications, scientific work;
5. Public health authorities: Data on Public Health, Waterborne Diseases.

2. Data on population projections are often available from secondary sources. Information on current water consumption, income and current water sources can also be collected from secondary data in many cases. Estimating consumption through analysis of time series data can be applied when data are available on water consumption level and on explanatory variables such as income, service levels, alternative sources, water tariffs and weather conditions. A prerequisite for this type of analysis is that the data are applicable to the new project situation. Econometric analysis can be carried out for projects in larger urban areas where piped water has been available for a longer period of time, where alternative resources are limited and where existing water tariffs are close enough to the expected future tariffs in the with project scenario.

A.1.2 Reconnaissance Survey

3. During a reconnaissance survey, secondary and primary data are collected. Such surveys are useful to obtain a more detailed picture of the project area. During the survey, technical and non-technical data may be collected from local organizations, or data may be based on own observations.

4. To stimulate integrated formulation of the project scope, the composition of the survey team should include technical experts (water supply engineers) as well as economists. The viability of different service levels or technical options should be investigated at this early stage.

5. During the reconnaissance survey, it is also useful to consult with certain key actors in the project area such as government officials and community leaders, and to carry out a

small number of representative interviews with community members to obtain a good picture of the local situation and conditions (situational analysis).

A.1.3 Collection of Primary Data

6. Primary data can be collected through field observations or, more importantly, by conducting surveys among selected households and/or industries and institutions. These surveys should be undertaken if insufficient secondary data are available on one or more of the following items: existing water use patterns; present expenditures for water (financial and non-financial); preferred service levels; willingness to pay for water and connection fees; and income.

7. It would be carrying it too far to include in this Handbook an extensive guide on how to conduct these surveys. A sample questionnaire is given in Appendix A.3. Lessons learned in carrying out the four case studies under RETA 5608 are as follows:

- (i) **Local Research Organizations.** During the field studies it was found that in all countries, there exists sufficient capability and capacity to carry out surveys for primary data collection and processing. These sources may include universities, research institutes, consultancy firms, community organizations, etc. It was also found that it is of the utmost importance that the surveyor be closely involved in the preparation and implementation of customer surveys.
- (ii) **In-depth surveys versus larger surveys.** The researcher should consider the usefulness of obtaining data by means of either a larger household survey or a smaller in-depth survey. In the case of Rawalpindi, e.g., where the persons interviewed were mostly the (male) heads of the household and where no water meters were installed, it appeared impossible to obtain reliable data about existing water consumption from the larger household survey. Instead, it was necessary to carry out a smaller in-depth survey involving the women in the households to obtain more reliable estimates.
- (iii) **Timeframe and preparation.** It is often thought that the implementation of household surveys requires extensive resources and a long period of time. In the case studies carried out under RETA 5608, the experience has been that when working with an experienced domestic team, surveys can be carried out rather swiftly. The cost of carrying out the household survey in the four case studies in Bangladesh, Indonesia, Pakistan and Viet Nam was between \$5,000 to \$8,500 per survey among, on average, 300 households. The survey included preparation of questionnaire and field survey, implementation of the survey, processing, and analysis of data and report writing. A typical timeframe for carrying out a household survey is shown in Box 3.7.

Box 2. Timeframe for Conducting Household Survey

Before start of the survey

- Preparation of questionnaire
- Preparation of survey team
- Analysis of secondary data
- Inform relevant authorities
- Preliminary stratification

day 1: Discussions with survey team
Field testing of questionnaire
Visit relevant authorities and obtain introductory letter

day 2: Adapt and finalize questionnaire
Training of surveyors including further field tests

day 3: Finalize training of surveyors
Start of the survey

day 4-5: Monitoring of first results
Adapt/change questions where needed

The actual survey may need between five to ten days, depending on the number of surveyors and the number of interviews to be conducted. Normally, one surveyor is able to conduct between five and ten interviews per day and therefore, a survey team consisting of five persons would be able to conduct between 125 and 250 interviews per week.

Source: RETA 5608: Economic Evaluation of WSPs

- (iv) **Length of the questionnaire.** In this context, it is useful to note that most questionnaires contain questions which are later not used in the analysis. An important reason is that different actors are involved in the design of the questionnaires and that each of these actors has his/her own wishes. It is recommended to carefully assess the usefulness of each question and to keep the questionnaire (which should be in local language) as short as possible. An example of a household questionnaire is attached as Appendix A.3.
- (v) **Defining the new water service level.** In many cases, it may be difficult to clearly and realistically define the new product (improved water supply) to be used as a basis for the willingness-to-pay questions. In the case of the Rawalpindi water supply project (WSP) for example, it was not considered feasible to achieve 24 hours water supply at good pressure within a foreseeable period of time. Instead, project engineers expected that they would be able to achieve ten hours per day of clean water supply at good pressures.

8. It is also important to present alternative options, where these exist. In urban areas, these may include public taps. In the case of rural water supply, potential customers may not always have a clear idea of different technical options, and it may be necessary to bring pictures or drawings of the new facilities required for each option.

A.2 CONTINGENT VALUATION METHOD (CVM)

A.2.1 Introduction

9. This section draws on the 1988 WASH *Guidelines for Conducting Willingness-to-Pay Studies for Improved Water Services in Developing Countries*. This very useful *Guidelines* contains detailed examples on how to design and conduct a willingness-to-pay (WSP) survey.

A.2.2 Concept of CVM and Advantages

10. The CVM is a direct means of estimating the economic benefits of an improved water supply. One simply asks how much the consumer is willing to pay for a given level of service. The method is called “contingent valuation” because the respondent is asked about what he or she would do in a hypothetical (or contingent) situation in which the level of service is expected to be improved.

11. This approach has the following advantages:

- (i) one can observe the current water situation of the households, inquire about the level of service people want and how much they are willing to pay for it;
- (ii) the consumer can value services for which indirect approaches would be imperfect (e.g., what are the benefits of increased reliability, higher water quality, etc.);
- (iii) the analyst can estimate the reactions of households to prices or technologies beyond the range of past experience;
- (iv) the answers of respondents to WTP questions are easily understood by non-economists and decision-makers;
- (v) CVM can be used to easily derive estimates of economic benefits without the use of econometric techniques;
- (vi) the CVM could also be used to assess the benefits of improved water services to industries and commercial establishments.

12. One possible drawback of the CVM approach is that the full economic benefits (e.g. health improvements) of an improved level of water service may not be well perceived by the beneficiaries and that answers may be unreliable and give biased estimates of WTPs for a number of reasons discussed further below.

A.2.3 Use of WTP data

13. Both policy makers and water resource planners in developing countries are becoming increasingly interested in conducting WTP studies to learn more about households' preferences for improved water supplies and their willingness and ability to contribute to the costs of operation, maintenance and construction. Water sector professionals now consider it necessary to incorporate communities' preferences regarding proposed water supply systems in the design of the project. WTP studies can provide useful information to assist policy makers, planners and project analysts in making four types of decisions:

- **Setting Priorities.** If a water agency or donor has a limited budget and must choose between villages or towns to receive a piped water supply, WTP surveys can assist in prioritizing investments or site selection. For example, villages which show high WTP for improved water supplies are likely to benefit considerably from a new piped water system, and the potential for cost recovery of the operation and maintenance costs is likely to be high. Similarly, if a village has many high-quality traditional water sources nearby, WTP for a piped water supply system is likely to be low.
- **Choice of service level.** Planners in developing countries have often assumed that a community should be provided with the highest level of service possible, as long as the cost for households to obtain the water does not exceed 5 percent of the household income. It has also been assumed that as long as this 5 percent is not exceeded, households would abandon their existing water supply in favor of the improved system. These assumptions have proven to be incorrect in many cases. WTP surveys can assist in defining the appropriate technology and service level;
- **Tariff design.** Water utilities are under increasing pressure to be financially viable and to raise the prices they charge for water to reflect better the cost of the service. However, few water utilities in developing countries have adequate information on which to base decisions regarding tariff design. If prices are set too low, revenues will not be sufficient to cover the costs of supplying water. If prices are set too high, households may not be able to afford connecting to a piped water supply, and again revenues will be low. With WTP information, the relationship between the price of water, the number of households connected and revenues can be estimated;

- **Project design and benefit-cost analysis.** Provided that households understand all the changes and perceive all the benefits which will result from an improved water supply, the WTP bids can serve as a measure of the economic benefits of the project.

A.2.4 Design of WTP Questions

14. In general, WTP surveys are based on either of two types of questions:

- respondents may be asked a direct, open-ended question such as: “*What is the maximum amount of money you would be willing to pay (for a specified good or service)?*” or,
- respondents are presented with a specific choice which requires a yes/no answer, like “*Suppose a water distribution line were installed in front of your house, and assuming the connection fee was x (in local currency), and that the monthly tariff was y (flat charge or per m^3) would you choose to connect to the new water distribution system?*”

Different questions can be combined and bidding games can be developed.

Box 1 Bidding Game
(Tariff per month)

When the new project starts, and assuming (i) if piped water quantity is increased to 12 hours supply per day at adequate pressure so that you can get the additional supply of water of good quality and (ii) the tariffs are re-fixed at Tk per month, would you want a connection and pay for the bill? [go to the bidding game]

- (a) No, I do not want a connection.
(b) Yes, I want a connection; if 1(b), then go to 2.
- Tk400 If “Yes”, then stop; if “No”, go to 3
- Tk350 If “Yes”, then stop; if “No”, go to 4
- Tk300 If “Yes”, then stop; if “No”, go to 5
- Tk250 If “Yes”, then stop; if “No”, go to 6
- Tk200 If “Yes”, then stop; if “No”, go to 7
- Tk150 If “Yes”, then stop; if “No”, go to 8
- Tk100 If “Yes”, then stop; if “No”, go to 9
- Tk75 If “Yes”, then stop; if “No”, go to 10
- Tk50 If “Yes”, then stop; if “No”, go to 11
- Tk25 If “Yes”, then stop; if “No”, explain.

15. In Box 6.7, the bidding game starts at the higher amount of Tk400. The selection of the initial amount is important and should reflect realism; e.g., the initial amount should generally not be higher than two times the unit cost of the enhanced level of service.

A.2.5 Reliability of WTP Data

16. Professionals are often concerned about the validity and reliability of respondents' answers to hypothetical WTP questions. Two main concerns are at issue here. The first is whether respondents will answer WTP questions honestly and accurately. The second is whether WTP responses are reliable measures of economic benefits.

17. Systematic (non-random) differences between respondents' answers to WTP questions and their true WTP can arise for many reasons:

Strategic bias

18. Strategic biases may occur when the respondent believes he or she can influence a decision or plan by not answering the enumerator's question honestly.

Box 2 Strategic Bias

A research team from the University of Karachi was conducting a WTP study for the World Bank and went into a poor peri-urban area of Karachi to pre-test an early version of their WTP questionnaire. A neighborhood was selected and a community leader was informed about the purpose of the research team's visit.

The team went to the first house on the block to conduct the first interview and within five minutes after starting the interview, a truck rolled by. The driver leaned out his window and shouted that the water situation in the neighborhood was terrible and that the research team should arrange for the **government** to provide a water distribution line immediately.

In such an environment, there is clearly a risk that misinformation and rumors about a WTP study will affect the answers respondents give and possibly encourage them to attempt to influence the results of the study by giving biased responses to the WTP questions. In this example, WTP would probably be an underestimate of the economic benefits because the respondent might believe that not he but the government should pay for the water service.

Source: Wash, 1988

19. Strategic biases occur when respondents **understate** their true willingness to pay for an improved level of water service while others pay for the provision of the good or service. On the other hand, if the price to be charged for the improved water service is not tied to an individual's WTP and the respondent is aware of this, he may **overstate** his true WTP to ensure its provision.

20. The problem of strategic biases can be reduced by carefully stressing the importance of a truthful answer. The questionnaire used in Phan Thiet (Viet Nam) started with the following opening statement, which the enumerator was asked to read exactly as it was given and not paraphrase it.

Box 3 Opening Statement

As you are aware, the present water supply system in Phan Thiet town has been unreliable and it has not been possible to improve the service level due to lack of financial funds. Now, the Water Supply and Drainage Company of Binh Thuan Province intends to improve and extend the water supply system in the town. The intended improvements of the system will be better water quality and higher pressure 24 hours a day. To do this, the company has planned to borrow the money from the Asian Development Bank. Repayments of the loan and operation and maintenance expenditures will have to be covered by the revenues from all water users.

Now, I'm going to ask you some questions to learn whether your household is interested in having a connection and would be willing to pay to make use of the water supply system (non-connected households) or improve the reliability of the water supply scheme serving this town (already connected households). It is important that you answer the questions as truthfully as you can so that we can really know whether you wish to have a better quality of service or not, and which amount you can afford and are willing to pay for it. If you and the other people we interview say that you cannot pay anything or anything more than you are currently paying, even if these statements are not true, then perhaps it is not possible to improve and extend the water supply system. If what you say is that what you can pay is actually too much, then you might not be able to pay your monthly water bill. It is therefore important to answer the questions honestly.

Source: RETA 5608 Case Study on the Provincial Towns Water Supply and Sanitation Project, Phan Thiet, Viet Nam

21. According to Hanley and Spash (1993), the available empirical evidence suggests that contingent valuation studies are less prone to strategic bias than was once believed. If strategic biases do occur, the use of WTP bids to measure the economic benefits of a water supply, becomes a doubtful operation.

Design Bias

22. The design of a WTP study includes the way information is presented to individuals, the order in which it is presented, the question format and the amount and type of information presented. The following items can affect the response:

- *Choice of the bid question.* Open-ended questions or bidding games may influence the average WTP;

- *Starting point bias.* In bidding games, the starting point given to respondents can influence the final bid offered. This can be caused by impatience of the respondent or can happen because a starting point may suggest what size of a bid is appropriate;
- *Nature of information provided.* The amount of effort enumerators spent on describing the positive features (pressure, availability, quality) of a (improved) piped water supply might influence the WTP of respondents.

23. Empirical research indicates that a bidding game with a higher starting point is less prone to biases than that with a low starting point; it is recommended to start the bidding game with the highest bid and come down until the respondent indicates that he/she is willing to pay the indicated amount. An appropriate starting point might be two to three times the estimated cost of the service. If field testing of the questionnaire indicates that large proportions of the sample have chosen the highest bid, then the top bid should be increased.

Hypothetical Bias

24. A respondent who does not know his willingness to pay and does not wish to exert the mental energy to think about his preferences may simply guess at an answer to a WTP question. The enumerator should pay particular attention if this situation occurs and endeavor to reduce the bias through careful explanation about the benefits of the project.

Compliance Bias

25. Respondents in a particular cultural context may feel it appropriate to answer some kinds of questions in specific ways or may attempt to give answers that they think will please the enumerator. This compliance bias can result in substantial differences between reported and true WTP values.

26. WASH (1988) experience indicates the importance of using enumerators with close ties to the community in which the surveys are to be conducted. The enumerators may be local school teachers, secondary school graduates or government employees; but, whatever their occupation, they should be respected within the community and have a good understanding of the local economy, social traditions, the design and benefits of the proposed project.

Existing tariffs

27. In situations where a piped water supply exists, individuals with and without a piped water supply may feel that the existing (subsidized) tariff constitutes a fair WTP bid. An improved level of water service should normally result in an expressed WTP which is higher than the existing tariff, assuming there are no biases in the answer and the respondent is fully aware about the full economic benefits.

Gender bias

28. The point of concern here is that in many cultures, fetching water is a job for women and often children. Thus, the provision of improved water supplies may have important implications for traditional social roles of men and women. If a woman whose time would be saved is married, her husband might consider the change in his wife's traditional role improper. He might disapprove not merely because of the potential change of power relations in the family, but also because the new "modern" roles and lifestyles may seem to him to depart from a right and customary way of life. The husband's valuation of the consequences of the improved water supply might thus be negative, or diminished. Consequently, WTP by male respondents might be less than WTP by female respondents.

29. Therefore, the survey should attempt to cover an equal number of men and women. This might implicate that a part of the survey is conducted during the day, and another part during the evening. In some cultures, especially Islamic, female surveyors might have a better access to the women in the household.

Health

30. Willingness to pay measures the economic benefits correctly only to the extent that all health and non-health related benefits are fully perceived by the beneficiaries. This may not always be the case at the time of the survey, especially when respondents have low educational status. Health education campaigns may enhance the people's WTP over time.

A.3 SAMPLE SOCIOECONOMIC SURVEY QUESTIONNAIRE**Part 1
General Information
ALL HOUSEHOLDS ¹**

Identification:

Location : _____

Serial No.: _____

Household Head

- A.1 Interviewee is head of the household _____
(1) Yes (2) No
- A.2 Head of the household _____
(1) Male (2) Female
- A.3 Education of the head of the household _____
(1) No Schooling
(2) Primary Education (1-5 years)
(3) Secondary Education (6-12 years)
(4) Higher Education (> 12 years)
- A.4 Occupation of the head of the household _____
(1) Agriculture or fishing
(2) Own business
(3) (Semi-)Government employee/Retired
(4) Private employee
(5) Housewife
(6) Others
- A.5 Number of persons living in the household
No. of adults (> 16 years) _____
No. of minors (< 16 years) _____
- A.6 Mode of Transport: _____
(1) Bicycle
(2) Motorbike
(3) Own Car
(4) Public Transport
(5) By foot
(6) Others

Housing Characteristics

A.7 Tenurial status of the house _____
(1) Owned (2) Rented (3) Others

A.8 Type of Dwelling _____
(1) Concrete
(2) Wood
(3) Tin-shed
(4) Others

A.9 Rental value of the dwelling per month _____

Source of Water

A.10 Primary Source of Water _____
(1) House connection
(2) Public street hydrant
(3) Neighbor
(4) Private tubewell
(5) Dugwell
(6) Pond
(7) River
(8) Others

Note: If source is 1, go to Schedule B
If source is 2, go to Schedule C
If source is 3 through 8, go to Schedule D

Part 2
FOR HOUSEHOLDS WITH IN-HOUSE CONNECTIONS

- B.1 Two most important reasons
for having a connection _____ & _____ (1)
- Convenience
- (2) Health
 - (3) Reliability
 - (4) Modernization
 - (5) Alternative source is not sufficient
 - (6) Cheaper
 - (7) Others
- B.2 Last monthly bill _____
Consumption per month (m³) _____
- B.3 Do you sell piped water to others, e.g. neighbors? _____
(1) Yes (2) No
If yes, how many cubic meters per month? _____
- B.4 How many persons outside your household use
water delivered through your connection? _____
- B.5 Water availability _____
(1) Sufficient all year
(2) Insufficient during dry season
(3) Sometimes insufficient
(4) Insufficient mostly
- B.6 How many hours per day do you receive water
from the piped system? _____
- How many days per week do you receive water
from piped system? _____
- In summer/dry season, how many days do you
receive water from piped system? _____
- In winter/rainy season, how many days do you
receive water from piped system? _____
- B.7 What do you think of the quality of the water
delivered?
- a. Taste _____
 - (1) Good (2) Average (3) Bad
 - b. Smell _____
 - (1) Good (2) Average (3) Bad

- c. Color
 (1) Good (2) Average (3) Bad _____
- B.8 Is there any relation between the quality of water and the illnesses in your household?
 (1) Yes (2) No _____
- B.9 How many persons in your household were ill during the last year due to the consumption of unsafe water? _____
- How many days of sickness per person? _____
- If the sick person got treatment, how much was the medical cost? _____
- B.10 Which of the following diseases occurred in your household during the last year in your area? (insert a list of waterborne diseases) _____
- B.11 Water pressure:
 (1) Strong (3) Generally strong
 (2) Weak (4) Sometimes weak _____
- B.12 How do you treat water? _____
 (1) Boil and filter
 (2) Boil
 (3) Filter
 (4) Others
 (5) None
- B.13 What type of storage do you have; what is the total volume of your storage and how much was the installation cost?

| Type | Liters or Gallons | Installation Cost |
|----------------------|-------------------|-------------------|
| (1) Overhead tank | | |
| (2) Underground tank | | |
| (3) Drum | | |
| (4) Bucket/vessel | | |
| (5) Others | | |
| (6) None | | |

B.14 Water from secondary source, if any:

| Secondary Sources | Distance from Source (meter) | If source is used | | Use of source | | Monthly Exps. ^a | Inst Cost ^b |
|-----------------------|---------------------------------|-------------------------|----------------------------|---------------|---------|----------------------------|------------------------|
| | | Consumption (litre/day) | Collecting Time (min./day) | Days/Mo. | Mos./yr | LC/month | LC |
| Neighbor | | | | | | | |
| Public Street Hydrant | | | | | | | |
| Private Tubewell | | | | | | | |
| Dugwell | | | | | | | |
| Pond | | | | | | | |
| River | | | | | | | |
| Water Vendors | | | | | | | |
| Others | | | | | | | |
| | | | | | | | |

a/ Include Operations and Maintenance costs, payments made to the delivery person or the tanker, cost of electricity, etc.
 b/ Include construction cost of well, cost of pump and its installation etc.

B.15 How many additional hours per day of water supply will be required to meet all your needs? _____

B.16 Do you prefer a: _____
 (1) Fixed Charge (2) Metered Bill

Bidding Game
 (Tariff per month)

B.17 When the new project will start, and if piped water quantity is sufficiently increased to 24 hours supply per day at adequate pressure so that you can get the additional supply of water needed with a good quality, and if the tariff rates are re-fixed at _____ (local currency) per month, would you pay for the bill? (Go to the Bidding Game.)

- | | |
|--------------------|------------------------------------|
| (1) > 400 LC/month | (6) 150 LC/month |
| (2) 350 LC/month | (7) 100 LC/month |
| (3) 300 LC/month | (8) 75 LC/month |
| (4) 250 LC/month | (9) 50 LC/month |
| (5) 200 LC/month | (10) 25 LC/month (existing tariff) |

Part 3
FOR HOUSEHOLDS WITH PRIMARY SOURCE OF
PUBLIC STREET HYDRANT

- C.1 Distance from the public street hydrant: _____
- C.2 Consumption (liter/day) _____
- C.3 Collecting time (min/day) _____
- C.4 Monthly charges, if any. _____
- C.5 Water availability _____
 (1) Sufficient all year
 (2) Insufficient during dry season
 (3) Sometimes insufficient
 (4) Insufficient mostly
- C.6 How many hours per day do you receive water from the public street hydrant? _____
- How many days per week do you receive water from the public street hydrant? _____
- In summer/dry season, how many days do you receive water from the public street hydrant? _____
- In winter/rainy season, how many days do you receive water from the public street hydrant? _____
- C.7 What do you think of the quality of the water delivered? _____
 a. Taste
 (1) Good (2) Average (3) Bad
 b. Smell
 (1) Good (2) Average (3) Bad
 c. Color
 (1) Good (2) Average (3) Bad
- C.8 Is there any relation between the quality of water and illnesses in your household? _____
 (1) Yes (2) No
- C.9 How many persons in your household were ill during the last year due to the consumption of unsafe water? _____

- How many days of sickness per person? _____
- If the sick person got treatment, how much was the medical cost? _____
- C.10 Which of the following diseases occurred in your household during the last year? (insert a list of waterborne diseases) _____
- C.11 Water flow:
 (1) Strong (3) Generally strong
 (2) Weak (4) Sometimes weak _____
- C.12 How do you treat water? _____
 (1) Boil and filter
 (2) Boil
 (3) Filter
 (4) Others
 (5) None
- C.13 What type of storage do you have, what is the total volume of your storage and how much was the installation cost?

| Type | Liters or Gallons | Installation Cost |
|----------------------|-------------------|-------------------|
| (1) Overhead tank | | |
| (2) Underground tank | | |
| (3) Drum | | |
| (4) Bucket/vessel | | |
| (5) Others | | |
| (6) None | | |

C.14 Water from secondary source, if any:

| Secondary Sources | Distance from Source (meter) | If source is used | | Use of source | | Monthly Exps. ^a | Inst Cost ^b |
|-------------------|---------------------------------|----------------------------|-------------------------------|---------------|-------------|----------------------------|------------------------|
| | | Consumption (litre/day) | Collecting Time (min./day) | Days/ Mo. | Mos./ yr | LC/ month | LC |
| House Connection | | | | | | | |
| Neighbor | | | | | | | |
| Private Tubewell | | | | | | | |
| Dugwell | | | | | | | |
| Pond | | | | | | | |
| River | | | | | | | |
| Water Vendors | | | | | | | |
| Others | | | | | | | |
| | | | | | | | |

a/ Include Operations and Maintenance costs, payments made to the delivery person or the tanker, cost of electricity, etc.

b/ Include construction cost of well, cost of pump and its installation etc.

C.15 Reasons for not having in-house connection: _____

- (1) Connection fee too high
- (2) Monthly charges too high
- (3) Connection is not available
- (4) Present arrangement satisfactory
- (5) Rented house
- (6) Waiting list
- (7) Others, specify: _____

Bidding Game
(Tariff per month)

- C.16 If piped water quantity is sufficiently supplied 24 hours per day at adequate pressure so that you can get sufficient piped water with a good quality, and the tariff rates are re-fixed at LC .. per month, would you want a connection and pay for the bill? [Go to the Bidding Game.]
 (1) Yes (2) No _____
- C.17 If yes, how much you are willing to spend for the connection fee and material and labor?
 (1) > 400 LC/month
 (2) 350 LC/month
 (3) 300 LC/month
 (4) 250 LC/month
 (5) 200 LC/month
 (6) 150 LC/month
 (7) 100 LC/month
 (8) 75 LC/month
 (9) 50 LC/month
 (10) 25 LC/month
 (11) < 25 LC/month; Explain
- C.18 Do you prefer a: _____
 (1) Fixed Charge (2) Metered Bill

Part 4
FOR HOUSEHOLDS WHOSE PRIMARY WATER SOURCE
IS NON-PIPED WATER

D.1 Sources of Water

| Secondary Sources | Distance from Source (meter) | If source is used | | Use of source | | Monthly Exps. ^a | Inst Cost ^b |
|-------------------|------------------------------|-------------------------|----------------------------|---------------|---------|----------------------------|------------------------|
| | | Consumption (litre/day) | Collecting Time (min./day) | Days/Mo. | Mos./yr | LC/month | LC |
| House Connection | | | | | | | |
| Neighbor | | | | | | | |
| Private Tubewell | | | | | | | |
| Dugwell | | | | | | | |
| Pond | | | | | | | |
| River | | | | | | | |
| Water Vendors | | | | | | | |
| Others | | | | | | | |
| | | | | | | | |

a/ Include Operations and Maintenance costs, payments made to the delivery person or the tanker, cost of electricity, etc.

b/ Include construction cost of well, cost of pump and its installation etc.

D.2 Water availability

- (1) Sufficient all year
(2) Insufficient during dry season
(3) Sometimes insufficient
(4) Insufficient mostly

D.3 What do you think of the quality of the water delivered?

a. Taste

- (1) Good (2) Average (3) Bad

b. Smell

- (1) Good (2) Average (3) Bad

c. Color

- (1) Good (2) Average (3) Bad

D.4 Is there any relation between the quality of water and illnesses in your household?

- (1) Yes (2) No

D.5 How many persons in your household were ill during the last year due to the consumption of unsafe water? _____

How many days of sickness per person? _____

If the sick person got treatment, how much was the medical cost? _____

D.6 Which of the following diseases occurred in your household during the last year? (insert a list of waterborne diseases) _____

D.7 How do you treat water? _____

(1) Boil and filter
 (2) Boil
 (3) Filter
 (4) Others
 (5) None

D.8 What type of storage do you have, what is the total volume of your storage and how much was the installation cost?

| Type | Liters or Gallons | Installation Cost |
|----------------------|-------------------|-------------------|
| (1) Overhead tank | | |
| (2) Underground tank | | |
| (3) Drum | | |
| (4) Bucket/vessel | | |
| (5) Others | | |
| (6) None | | |

D.9 Reasons for not having in-house connection: _____

(1) Connection fee too high
 (2) Monthly charges too high
 (3) Connection is not available
 (4) Present arrangement satisfactory
 (5) Rented house
 (6) Waiting list
 (7) Others, specify: _____

- D.10 Reasons for not having a public street hydrant _____
 as main source:
 (1) Charges too high
 (2) Not available
 (3) Too far away
 (4) Present arrangement satisfactory
 (5) Others, specify

Bidding Game
 (Tariff per month)

- D.11 When the new project starts, and if piped water quantity is supplied 24 hours per day at adequate pressure so that you can get sufficient water with a good quality, and the tariff rates are re-fixed at LC .. per month, would you want a connection and pay for the bill?
 (1) Yes (2) No

If yes, go to the Bidding Game.

- (1) > 400 LC/month
 (2) 350 LC/month
 (3) 3400 LC/month
 (4) 250 LC/month
 (5) 200 LC/month
 (6) 150 LC/month
 (7) 100 LC/month
 (8) 75 LC/month
 (9) 50 LC/month
 (10) 25 LC/month; Explain

- D.12 Do you prefer a: _____
 (1) Fixed Charge (2) Metered Bill

- D.13 If you want an in-house connection, how much you are willing to spend to have it (for the connection fee and material and labor)? _____

- D.14 If you do not want to have a house connection, would you like to use a public street hydrant?
 (1) Yes (2) No

If Yes, what is the maximum distance the hydrant should be located from your house?
 _____ (meters)

If Yes, how much LC per bucket of 20 liters are you prepared to pay? [Go to a bidding game]

- | | |
|----------------|-------------------|
| 1. 5 LC/bucket | 5. 1 LC/bucket |
| 2. 4 LC/bucket | 6. 0.75 LC/bucket |
| 3. 3 LC/bucket | 7. 0.50 LC/bucket |
| 4. 2 LC/bucket | 8. 0.25LC/bucket |

Part 5
Sanitation Services
ALL HOUSEHOLDS

How do you dispose off your wastewater?

- E.1 Human waste water (Excreta/Urina) _____
 (1) Sewerage system (2) Septic tank
 (3) Open drainage canals (4) Into the street/road
 (5) Into the open field/river (6) In the garden/compound
 (7) Other, specify.....
- E.2 Grey waste water (washing/bathing/kitchen) _____
 (1) Sewerage system (2) Septic tank
 (3) Open drainage canals (4) Into the street/road
 (5) Into the open field/river (6) In the garden/compound
 (7) Others, specify.....
- E.3 Are you satisfied with the current disposal _____
 of your wastewater?
 (1) Yes
 (2) Moderately
 (3) Not at all
- E.4 Would you prefer to have an improved wastewater _____
 disposal system?
 (1) Yes (2) No

ONLY CONTINUE IF ANSWER TO E.4 IS YES

- E.5 Which improved wastewater disposal system _____
 do you prefer?
 (1) Septic tank/soak pit in compound
 (2) Open drains
 (3) Others, specify
- E.6 The project plans to provide a credit scheme to provide funds for low cost sanitation by _____
 means of a revolving fund. Are you interested to obtain a loan from this fund to
 improve your sanitation facilities and if yes, how much are you willing to pay back per
 month?
 (1) > 200 LC per month (5) 50 LC per month
 (2) 150 LC per month (6) 25 LC per month
 (3) 100 LC per month (7) 0 LC per month
 (4) 75 LC per month

Part 6
EXPENSES AND INCOME
ALL HOUSEHOLDS

Monthly Expenses on:

- F.1 Food _____
- F.2 Clothing _____
- F.2 Housing(rent, repair etc. _____
- F.3 Transport _____
- F.4 Utilities _____
- F.5 Education _____
- F.6 Health _____
- F.7 Others _____
- F.8 How many persons contribute to household income? _____
- F.9 How much income savings per year, if any, can you make? _____
- F.9 Total household income per month (Direct estimate, do not calculate from above) _____

Interviewer's Name: _____
Signature: _____
Date: _____