

China – UK, WRDMAP Integrated Water Resources Management Document Series

Advisory Note 5.5: Willingness to Pay Surveys (Urban Water Supply)

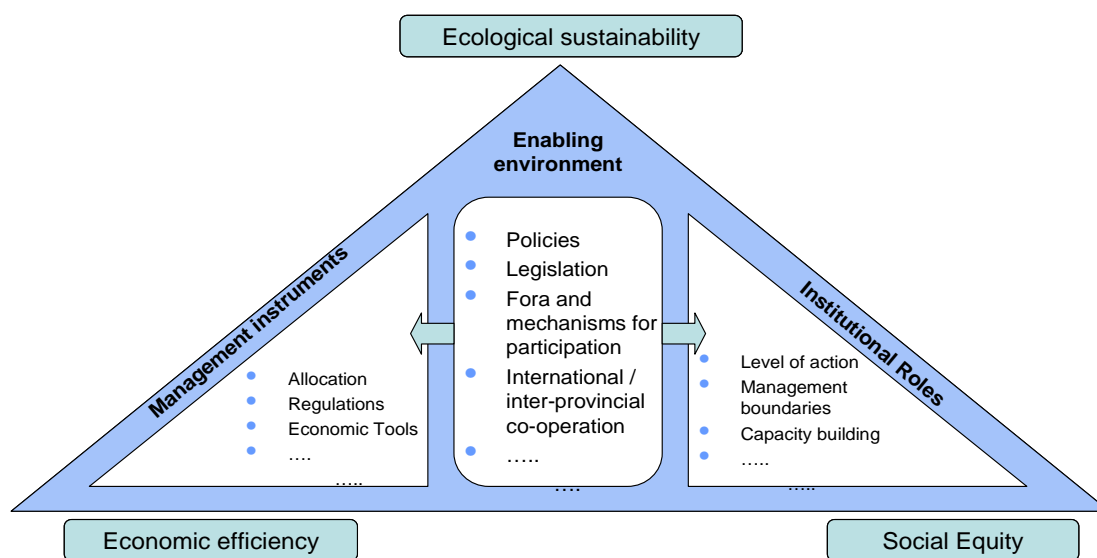
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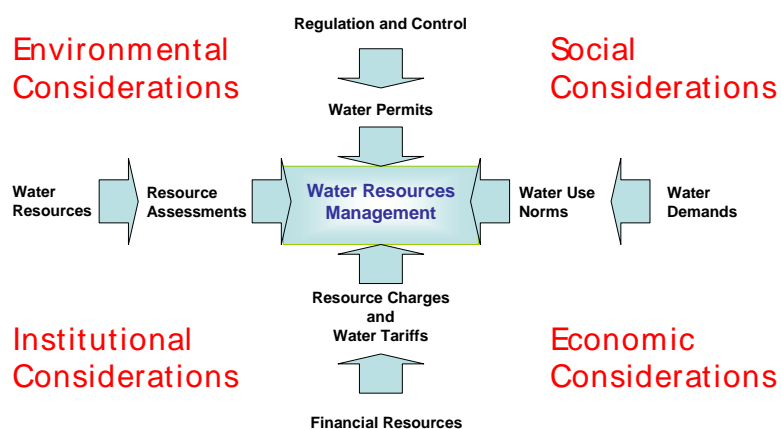


Integrated Water Resources Management (IWRM)

(Basics after Global Water Partnership)



Driving Elements of Integrated Water Resources Management



(Second figure after WRDMAP)

Summary: 'Willingness to Pay' is commonly defined as the maximum amount that an individual states he or she is willing to pay for a commodity or service. In this case for potable water supplied to their residence or place of business.

Assessing domestic and non-domestic customers' 'willingness to pay' assists a water company to structure the water tariff and set acceptable tariff rates and therefore to set targets for financial management, financial sustainability and future investment.

This Advisory Note, and an accompanying Example document, describes how a 'Willingness to Pay' survey may be designed and implemented and how data from the survey may be used to contribute to the design of a water tariff and the establishment of tariff rates.

The Note covers the following topics:

- Introduction
- Survey questionnaire
- Choosing a survey sample
- Implementation
- Willingness to pay and tariff rates
- Appendices with sample questions

This document is one of a series covering topics on sustainable water resources planning, allocation and management. Details are given in the bibliography.

The Ministry of Water Resources have supported the Water Resources Demand Management Assistance Project (WRDMAP) to develop this series to support WRD/WAB at provincial, municipal and county levels in their efforts to achieve sustainable water use.

1 Introduction

1.1 What is willingness to pay?

Willingness to Pay (WTP) is commonly defined as the maximum amount that an individual states he or she is willing to pay for a good or service – in this case for water supplied to their residence or place of business. WTP may be different from what a consumer says he or she wants to pay.

WTP can be used in an urban setting to provide an indication of the amount individual households are willing to pay for the provision of water supply and sanitation services for example.

The results of a WTP survey and its associated analysis provide some guidance as to what tariff levels might be acceptable.

WTP may be expressed as the amount a customer is prepared to pay per unit of water (e.g. per m³) or per period (e.g. month, quarter, etc.). For an existing customer, it might also be expressed as an increase (or decrease) compared with the current price.

1.2 Ability to pay

WTP is different from Ability to Pay (ATP). The ATP for water supply services is the capacity of a household or business to pay for these services. If someone has the "ability to pay" they can afford to pay the proposed price.

The standard approach to determining the affordability of water services is to set a limit on the acceptable share of water bills as a proportion of total household income and to structure the tariff to target households which are likely to spend more than the limit. For

the purpose of this Advisory Note, the indicator used is that no more than 3-5% of household income should be spent on water supply and sanitation services, although other measures can also be used. (This is a value which is typically adopted internationally).

The main factors affecting ability to pay for water are:

1. The unit cost of the water,
2. Household income and income distribution across the population; and
3. Average consumption of water per person.

The WTP survey should include questions that provide information on household income and water consumption per person. In cases where some households do not have metered connections, the survey will also provide information on the effective unit cost of water.

1.3 Why is willingness to pay important?

Assessing customers' WTP assists a water company to structure the water tariff and set acceptable tariff rates and therefore to set targets for financial management, financial sustainability and future investment.

WTP may be more or less than ATP, but ability to pay will most likely only be a constraint for low income households.

If WTP is less than the current price of water, then it may be necessary either to reduce the price of water or to educate customers about what the costs of water production and distribution really are. If WTP is greater than the present price of water, there

may be scope to increase the price. This may be important if the water company needs to increase water prices in order to achieve financial sustainability or to generate resources for appropriate system upgrading or expansion.

When customers have both ATP and WTP at a given price – i.e. when they have both the ability to pay for water at the given price and they would do so given the opportunity – then this is described as Ability and Willingness to Pay (AWTP) and is the effective demand for those customers.

Clear estimates of AWTP are necessary to set tariff ceilings and to devise tariff structures and subsidies which:

- Protect the poor and other vulnerable groups; and also
- Allow well-conceived and managed water sector investments to be financially viable and sustainable.

A transparent and robust method of estimating AWTP is also likely to help build stakeholder support for increased tariffs as it can be used to ensure that the impact on poor and other vulnerable groups is limited.

1.4 When should a willingness to pay survey be used?

The following criteria can be used to determine whether a WTP survey should be implemented:

- If expansion or upgrading is planned of an existing water supply system that will improve the domestic water supply in a town or city and that will lead to new capital and operating costs

that must be recovered at least in part from the users, or

- If a water supply utility needs to revise and re-structure its tariff in order to achieve and maintain long term financial sustainability and these adjustments will be associated with positive changes in service level, or
- If the tariff for a water supply utility needs to be revised in order to include rational and fair demand management elements, and
- If results from the pre-testing of the survey questionnaire design demonstrate that respondents have a reasonable understanding of the WTP questions.

A WTP survey should **only be implemented when significant changes in the service provided by the water supply utility are planned**. In some cases, a WTP survey may be appropriate for some parts of a water supply company (WSC) service area where service changes are planned, but not for other areas where no change in service levels is anticipated.

The fourth criterion concerns the validity of the analysis and a WTP survey should only be implemented in communities that generally satisfy this criterion. If potential respondents have difficulty understanding the WTP questions then either:

- The questions need to be revised to be more easily understandable,
- A simpler approach to the question design needs to be adopted, or
- Alternative approaches to WTP analysis, such as using a group discussion format, should be considered.

2 The Survey Questionnaire

A survey of consumers is intended to provide information on customers WTP for water, but in order to interpret this data and facilitate the setting of tariffs some additional background information is also required. Unless it has been decided to combine the WTP survey within a broader survey of the water company customer base, background data in the WTP survey should be kept to what is essential so that the survey is not unnecessarily long.

Survey data should assist in setting prices that balance the needs of consumers and the needs of the water company to meet its financial and investment objectives.

Because of the different characteristics of domestic and non-domestic customers, separate questionnaires must be prepared for each group (although the questionnaires will be similar and will cover the same general topics).

The questionnaires are structured around four basic sections:

- **Identification:** includes the address and name of the respondent and administrative information for management of the survey.
- **Basic information:** Background information on domestic and non-domestic customers. The questions to be included will vary, depending upon local circumstances and the extent of background information required and the extent and quality of data available from other sources.

- **Water services:** Information on current consumption and water services received from the water utility.
- **Willingness to pay for water:** Questions to assess the willingness of respondents to pay for water.

2.1 What topics should be included in the survey?

This section outlines the general subjects that should be included in the WTP survey. Further details are given in Appendix A at the back of this booklet. However, the subjects and questions actually included in a survey must be decided on a case by case basis, depending on the local circumstances of each WSC and its customer base.

Domestic customers

The questionnaire should include questions on:

- Households - number of people in each household, employment of adult members of the household, the type of house and other indicators of financial status
- Household income and/or other data that will give indirect information on incomes and expenditures
- Present water consumption and water payments, sources of supply for water other than the WSC, if any, and their costs; water related equipment in the household
- Metered or non-metered supply (if relevant)
- Perceptions of water quality and the water supply service

- Perceptions of current cost of water
- The willingness to pay for water in future.

Non-domestic customers

This questionnaire should include questions on:

- The type of activity engaged in by the business or organisation, its location and the type of building occupied, water related equipment and infrastructure
- The number of people using the premises each day
- The level of, and changes in, business (or institutional) activity in recent years
- Present water consumption and all water payments, sources of supply for water other than the WSC and the cost of water from these sources
- Whether supply is metered or non-metered
- Perception of the present water quality and service
- Perceptions of the current cost of water
- Willingness to pay for water in future.

2.2 Preparing the questionnaire

Questions should be formulated in as simple and straightforward a manner as possible. It is important that the questions are easy to understand so that respondents are not confused or led to give incorrect answers because they do not understand a question.

Administering survey questionnaires is a time consuming process, both for the interviewer and for the respondent. Therefore, the WTP survey should be kept as short as is consistent with obtaining the data needed for tariff design and planning.

Examples of WTP questionnaires for domestic and non-domestic customers may be found in Appendix B at the back of this booklet. While these questionnaires include most of the questions that need to be included in a WTP survey, the specific questions to be included must depend upon a consideration of the actual situation in the WSC's service area and data already available to the WSC.

Consideration should also be given to the topics in Appendix A. For example, the questionnaire for domestic customers in Appendix B includes a direct question on household income but since respondents will often underestimate income in surveys of this type, this question may need to be modified or supplemented with questions that assess household income indirectly. This can be done by collecting information on household assets that are clearly income linked – ownership of a car is an example, and the type of car provides a further refinement. The same is true for other consumer durables such as TV, videos, refrigerators, washing machines, etc.

2.3 Willingness to pay questions

Approaches to willingness to pay

There are two methods for assessing WTP - "revealed preference" and "stated preference".

"Revealed preference" – This involves estimating the current

price that the population pays for the commodity in question or similar commodity in the current market and adjusting for differences between them. This approach is **not** suited to assessing WTP for water services from an existing WSC because alternatives to the existing services are not available for comparison.

"Stated preference" - These are survey based methods which involve describing the proposed water service and asking respondents to state how much they would be willing to pay for it. Key features of the water service can be varied to gain an understanding of the value placed by the population on different features (for example, the hours of supply, water pressure or water quality proposed could be varied).

The best approach for WTP of water services is usually to use **"stated preference" techniques.**

Contingent valuation questions

The most common stated preference technique used to estimate WTP for water supply and other infrastructure or environmental services is **"contingent valuation methodology" (CVM).** CVM is a survey based method which places monetary values on commodities and services which are described to respondents. The stated preference approach requires detailed descriptions or scenarios which tell respondents how future services will differ from the current situation. There are a number of different ways in which responses can be elicited in CVM, all of which have different advantages and disadvantages. The options most relevant for WTP surveys for WSCs are outlined below.

(i) Direct open-ended questions

There are several ways in which WTP questions can be asked using CVM. The simplest method is to describe the service to be provided by the WSC and then ask respondents “How much are you willing to pay for the improvement in service described above?” This format is simple and easy to use but it can be difficult for respondents to answer, especially for households not yet connected to the water system. It is also subject to strategic bias, either positive or negative, which may be significant. That is, respondents may report a WTP that they think will produce the best outcome for themselves. For example, a respondent may report a very high WTP because he or she thinks improvements in the existing system are then more likely to proceed, or he or she may report a very low WTP in the hope that this will result in greater subsidies from Government.

(ii) Dichotomous choice

The second method is to describe the improvements to be made by the WSC and then ask the respondent “Which of the following two options would you choose:

- Existing water supply situation at a monthly cost of _____.
- Improved water supply service (as described above) at a monthly cost of _____.”

The amounts included in the questions are varied randomly across respondents by the interviewer. To obtain results sophisticated statistical analysis is required, making this type of questioning rather difficult and complicated to use. Thus this method should only be used when an

experienced statistician is available to carry out the analysis.

(iii) Bidding games

The third method is to use a bidding game to find the maximum WTP of each respondent. In a bidding game, each respondent is asked whether or not they would be willing to pay the starting price. If the answer is “yes” the game moves to a higher price, if the answer is “no”, then it moves to a lower price. The game proceeds in this manner through several stages until a final answer is arrived at. (An example is shown in the questionnaires in Appendix B.) This method may be difficult for respondents to understand but is often preferred since it produces more reliable results if properly administered. It is also essential that interviewers are well trained and understand fully the objectives and process involved.

Bidding games can be subject to starting point bias – i.e. the starting point selected may indicate the required answer to respondents and a high proportion of answers may be clustered around the starting point. To check whether bias has entered, the starting point can be varied, with high, medium and low starting points. Interviewers can easily apply this approach by rotating through the starting points in successive interviews. If the results show maximum WTPs clustered around the starting points this suggests that responses have been influenced by the starting points. However, if the final WTPs and starting points appear to be random and the WTPs are correlated with other factors such as income or education then respondents have clearly considered the real value of the service to be provided. The issue of

bias is usually addressed by pre-testing the bidding game, however, if bias is identified after a full survey it will be necessary to record this and to provide professional judgement as to a realistic response.

Because there can be difficulties with respondents understanding the WTP bidding game, it needs special attention during the pre-testing of the questionnaire. In the examples in Appendix B the starting points in the bidding game are based on a multiple of the current average cost per m³ of water plus or minus stated percentages. High, medium and low starting points can be obtained by using multiples of 1.5, 1 and 0.5, respectively. Alternatively, the bidding game can be based on the total water bill per billing period, with the starting point set as a multiple of the current average household bill plus or minus a defined percentage. Both approaches should be tried during the pre-testing and then one chosen for use in the survey itself. For the survey, the same method should be used for all respondents.

2.4 Format for WTP questions

Whichever approach and questions are used for the WTP section of the questionnaire, it is recommended that the following format is followed. This has three parts:

- A preamble which provides a brief explanation to the respondent and requests him or her to answer these questions accurately
- A statement that describes the improved conditions of supply on which the respondent's valuation is contingent
- A question about whether the respondent would be willing to

pay a stated amount (or a stated increase on the current water price per m³) for this service per billing period. The bidding game then follows.

3 Choosing a Survey Sample

3.1 Domestic customers

The steps in selecting the survey sample are:

- Defining the population
- Setting the sampling frame
- Deciding the sample size
- Selecting the sample

In conducting surveys of this type there is usually a trade off between sample size and the budget available for the study. If budget is a constraint it will be necessary to estimate the maximum sample size that can be included with the funds available, taking into account the cost of questionnaire preparation, implementation and data entry and processing.

Defining the population

The population for a WTP survey for a WSC will be all the households, businesses, institutions and industries that are connected to the water distribution system. (Selecting a sample of the non-domestic customers is discussed below.) The relevant population for a WTP survey will also include any households that are to be connected to the water supply system as a result of expansions to the system.

Setting the sampling frame

For households, the sampling frame will be a list of all households connected to the WSC supply network and, if relevant, a list of all households that will be connected to the system after system expansion or upgrading.

Deciding the sample size

For smaller towns and cities in China (with up to 500,000 households) if a strictly random sample of the whole population of households were chosen a sample size of 400 would be sufficient to provide statistically reliable data at the 95% confidence level and with a confidence interval of 5%.

Selecting the sample

In WTP surveys it is important to ensure that particular segments of the population are adequately covered by the survey. Household income is an important determinant of WTP and different income groups need to be represented in the sample. In particular, it is important that poorer sections of the population are sufficiently covered since these are the groups most likely to have difficulty paying for water.

Therefore, a **multi-stage cluster sampling method** is preferred for sample selection. Clusters of households are selected from which the sample is chosen. One of the advantages of this method is that it reduces travel time for the interviewers and helps to reduce survey costs.

In the first stage, a selection is made of the administrative districts within the town or city. These are selected to represent high, middle and low income areas. If appropriate, four or five income categories could be defined. Administrative districts can be

classified by income status according to their general characteristics (for example housing type, housing values, housing maintenance levels, numbers of households owning cars, etc). The number of districts selected depends partly on their size, but it is assumed that in most towns and cities, 4 to 6 districts would be satisfactory. The income categories should be represented approximately in the same proportion as their proportion in the whole population (i.e. if the high income groups is judged to be 20% of the population and 5 districts are included for the survey, then only one of them would be categorised as a high income area).

Within each selected administrative district, a number of communities should be selected at random (this can be done by drawing lots). The number will depend on the final sample size required.

Within each selected community, a 5% sample can be selected systematically from a list of all households in the community. It is assumed that most communities will have 700 – 1000 households so that in each community between 35 and 50 households will be sampled.

If the survey is being carried out for the whole city a total sample size of about 1,000 households would be preferable, provided the budget for this is available. If only a part of a city is being surveyed (for example, if the survey is only covering the part of the supply system is being upgraded), then a smaller sample size may be appropriate. However, a sample size of less than 400 is unlikely to provide reliable results.

Selecting a sample for WTP survey in Beipiao City

For a WTP survey for the Water Supply Company in Beipiao city in Liaoning Province, stratified sampling was used to ensure that different income groups and poorer and richer parts of the city were adequately included in the sample. From the city's administrative districts 4 were selected based on considerations of general income level – 1 higher income area, 1 middle income area and 1 poor area plus the city's poorest district. Within each district, 3 communities were selected and within each of these 12 communities 50 households were selected by taking every 15th household on a list of households for each community.

Details of the WTP Survey carried out in Beipiao are given in Example 5.5 of this document series.

3.2 Non-domestic customers

Non-domestic customers need to be sampled for the survey by category (industry, commerce, etc.). Implementing the survey for a statistically valid random sample from each group is likely to be expensive and time consuming. Furthermore, if some of these categories are small (less than 500), as they may be in some cities, then the proportion that need to be included in a statistically valid sample is very large. For non-domestic customers, it is suggested that a small sample from each category, selected randomly, be included. A total non-domestic sample of 100 could be used, divided among the categories according to their proportion in the total non-domestic category. If budget permits, this sample can be increased, particularly in larger cities with a relatively large non-domestic sector. This survey

would give indicative results for WTP among non-domestic customers.

4 Implementing the Survey

The number of personnel required to implement the survey depends on sample size and the time available in which to carry out the interviews. For a sample size of 600 with interviewing over a 10 to 12 day period, one or two supervisors (survey managers) are required to direct and monitor the work and about 10 interviewers (i.e. each interviewer completes 5 or 6 interviews per day). The number of interviewers can be adjusted for larger or smaller samples and longer or shorter periods available for implementation.

The supervisors are responsible for training interviewers, organising implementation of the survey and checking completed interview forms each day to ensure that they are being properly completed so that errors or misunderstandings, if there are any, can be rectified as soon as possible.

The supervisors may be those who have prepared the survey for implementation, but should be experienced in the implementation of social surveys. It would be useful for at least one of the supervisors to be a staff member from a local university or research institute with appropriate social survey experience. University students, or similar, can be employed as interviewers. It is preferable that interviewers be independent and not associated with the water company. However, in the training and familiarisation process, it may be very useful for interviewers to discuss the local situation and background with, for example, water company bill collectors or other WSC staff.

It is recommended that staff enter the responses on each completed form into the computer program being used for data analysis. This can be done once all interviews are completed. The timing for this activity is not usually critical and is probably best done by only one or two people who can quickly become familiar with the particular requirements of the survey and program.

4.1 Training interviewers

The interviewers must be trained prior to survey implementation. The interviewers must thoroughly understand the purpose and objectives of the survey and must also have a clear understanding of the purpose of the willingness to pay questions and how they are to be put to respondents. Interviewers will especially have to practice working with the willingness to pay questions, which can be done through role playing among themselves or with staff from the WSC. The WTP questions are relatively complex and it is most important that interviewers understand the questions and can implement them correctly.

Supervisors are responsible for ensuring that the interviewers fully understand the questionnaire and how it should be implemented.

4.2 Pre-testing the questionnaire

The questionnaire should be pre-tested prior to implementation of the survey. The pre-testing may be undertaken by the supervisors themselves prior to the training of interviewers, or it could be carried out as part of the training of the interviewers. The purpose of pre-testing is to check that the questions in the survey can be readily understood

by the respondents. It also provides a check on the time that will be needed to complete each questionnaire.

Both the domestic and non-domestic questionnaires must be pre-tested. For the pre-testing, each questionnaire should be administered to 10 – 15 respondents (or more if necessary) selected at random from an area that will **not** be included in the main survey. For the non-domestic questionnaire, a selection should be made that includes all non-domestic customer categories.

The pre-testing trial should include testing for any potential bias introduced by the 'starting point' in the bidding game.

After the pre-testing interviews, the survey questionnaires should be reviewed and adjustments made in the questions or wording of questions, if necessary, to make them more easily understood by respondents. Any other issues that appear as a result of the pre-testing must also be addressed and mitigated as far as possible.

4.3 Points to watch for in implementing the survey

Experiences in use of the WTP Survey in the Water Resources Demand Management Project (WRDMAP) highlight the importance of ensuring a good understanding by respondents of both survey aims and content. Where the interviewers took sufficient time to do this at the outset, the form was completed much more successfully than when interviewers gave only a brief introduction and did not address adequately respondent's concerns about the overall rationale and objectives of the survey.

Since there is only a recent history of use of WTP surveys in China, respondents inevitably are wary,

considering that their opinions may not be being taken seriously in determining tariff levels. Interviewers need to address such concerns carefully and diplomatically, clarifying exactly what the survey hopes to achieve.



Domestic survey in progress

Similarly, in many Chinese towns and cities, respondents are concerned primarily about hours and quality of water supply. This often affects their answers, leading them to over-estimate the increase they are willing to pay, given their desperation over existing levels of quality and supply.

From experiences in designing and implementing WTP surveys in WRDMAP (see Example 5.5 for details), it is also clear that in the contingent valuation, respondents understand increases more readily if they are expressed in tariff rates (for example price per m³ of water) rather than in billed amounts.

At the conclusion of the survey, it is important for each interviewer to check, and for supervisors to re-check that the data from each questionnaire conforms to the required format, before any processing of data takes place.

4.4 Analysing the data

Survey data from the questionnaires can be analysed using Microsoft Access or an Excel spreadsheet. (A proprietary statistical package such as SPSS could also be used, if available.) A spreadsheet for analysing the data can be set up with one column for each question and one row for each completed questionnaire. All the data needs to be coded so that it is in numerical form. Obvious errors, either in recording by the interviewer or in the information given by respondents, should be cleaned from the data.

Unless a statistician is available to undertake more complex data analysis, cross tabulation of the data and the estimation of simple statistics will be satisfactory (there are many statistical analysis features within Excel including statistical functions, pivot tables and graphics with trend analysis tools). Typical categories for the classification of data from the domestic surveys are: occupation, age of respondent, gender of respondent, household type and area (wealthy, middle income, poor), household size, household income and income indicators, metered or non-metered supply, daily hours of supply, quality of supply, quantity of water used per month, payment per billing period, level of satisfaction, reasons for satisfaction or dissatisfaction. These will then be compared with WTP categories.

For non-domestic categories, average WTP should be estimated for each category and possible correlations with other data from the survey should be investigated.

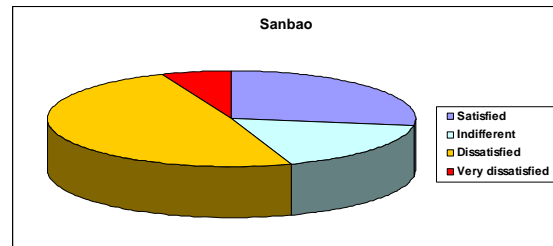
The principal results required from the survey are:

- Average WTP for domestic and each category of non-domestic customers
- WTP by selected characteristics of domestic respondents (e.g. income, gender of respondent, location of household, satisfaction with the WSC, etc.)
- General characteristics of the customer base.

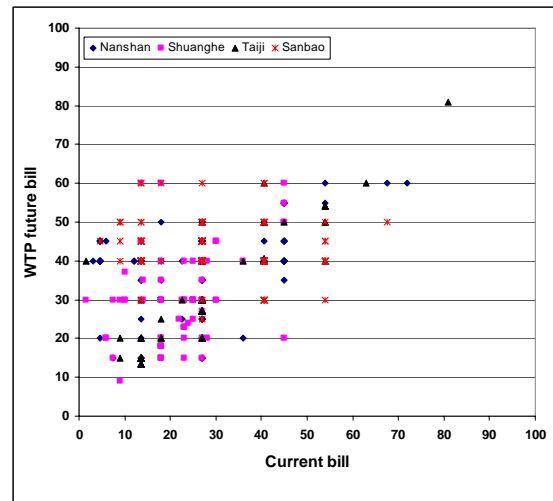
Examples of WTP survey analysis

The following examples of WTP survey analysis are taken from two sources: Example 5.5 'Willingness to Pay Survey for Beipiao Water Supply Company' in this MWR series and from a study of western Chongqing funded by the World Bank (see bibliography). Both documents contain large numbers of tables detailing characteristics of the surveyed WSC customers (domestic and non-domestic) and full analysis of their responses to questions about quality of water services and WTP given future improvements. The reader is referred to these documents for a good appreciation of how to record survey findings in tabular format. The focus here is on pictorial representations of the results in part because these can be very useful in getting the survey results widely understood by WSC staff who have no background in this type of survey.

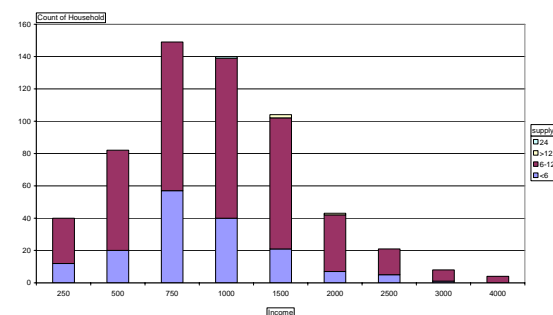
The examples given here are selected to illustrate styles of presentation of survey results and represent only a few of the many potential outputs from a WTP survey.



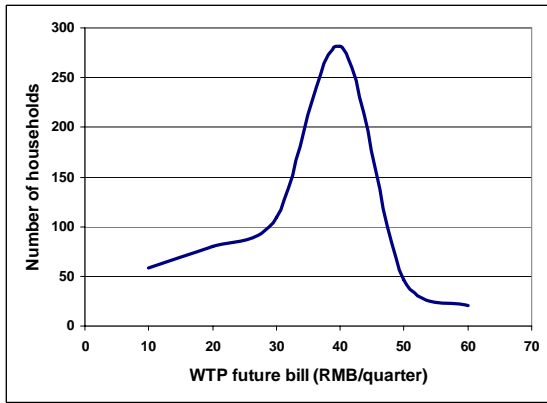
Use of pie charts, here customer satisfaction levels are less than 50%



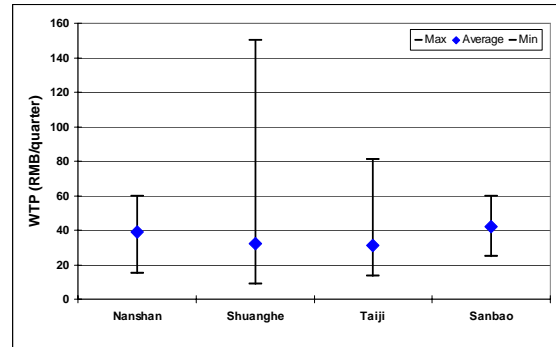
Use of scatter diagrams to investigate relationships, social survey data often shows wide scatter and this uncertainty can be hidden when the results are tabulated



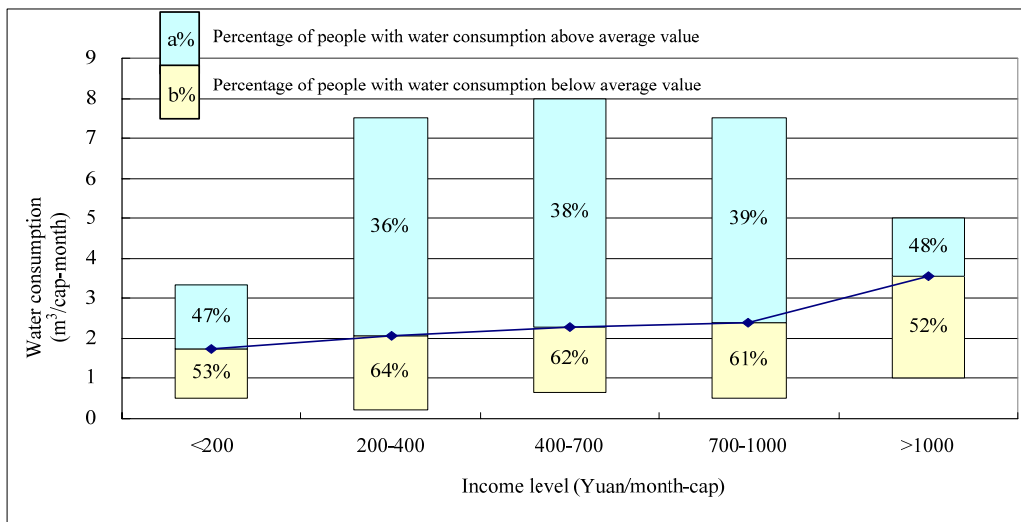
Use of bar charts, here an Excel pivot table output relating household income and number of households with particular number of hours of supply



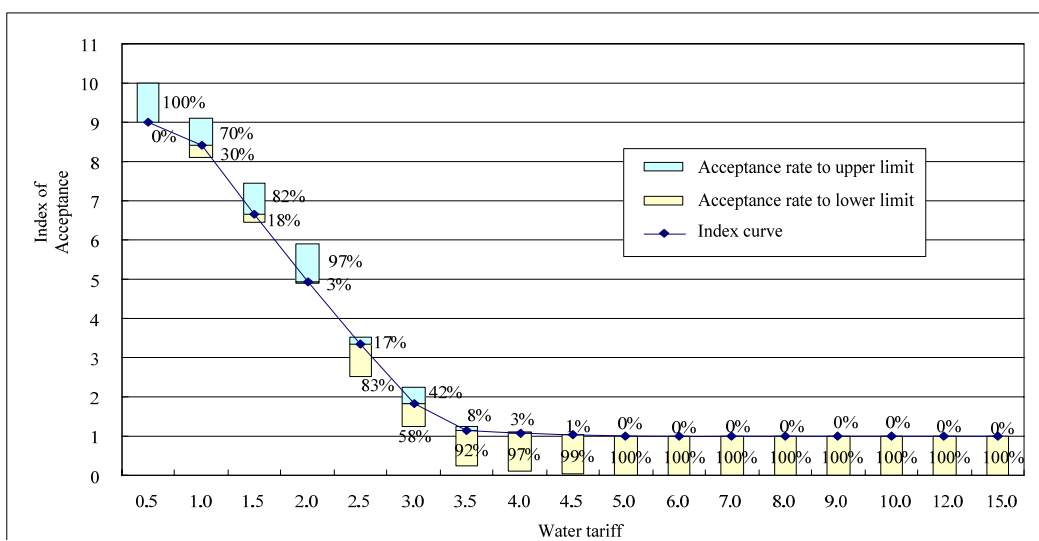
To show the **range** of responses to the key WTP question



WTP stated quarterly amount by district, also showing range of responses



Relationship between per capita average income and water consumption, Dianjiang (World Bank, 2006, Chongqing Study)



WTP curve of the respondents, Dianjiang (World Bank, 2006, Chongqing Study)

5 Willingness to Pay and Tariff Rates

Willingness to pay is only one factor to be considered in the design and setting of tariffs for a water company. Other information about the customer base is also required, as well as the production, financial and other technical data about the operations of the water company itself. Overall availability of water may be an important consideration in areas of water scarcity. The setting of tariffs for a water company is discussed in detail in Advisory Note 5.4 'Tariff Setting for a Small to Medium Size Water Supply Company'.

Specific information about the WTP of various customer groups assists with the setting of tariff rates in the following ways:

- It provides important guidance on whether tariff rates will be acceptable to customers
- Where WTP is greater than current rates, it can assist with planning tariff increases over a period of years, especially where there is a need for increased tariffs to ensure long term financial sustainability of the water supply company
- If WTP is less than current charges for water, it may indicate a need for greater transparency and an education effort on the part of the water company – for example, explaining to customers the actual costs of supplying water and the long term prospects

for water supply if financial sustainability of the company is not assured

The Ability to Pay (ATP) for water places a constraint on the price which low income households are charged for water. Usually this means that it determines an upper limit on price that can be charged to low income households and the level of the first block of a tariff if a blocked/tiered tariff structure is used or to be adopted. ATP is not, usually, a constraint on the water tariff for middle and higher income households (which usually means those charging higher amounts of water) nor on the tariff for non-domestic customers.



It is important to gain sufficient information about the customer base

Appendix A: Topics and Questions that may be included in the Questionnaires

Appendix A1: Domestic Customers

Appendix A2: Non-domestic Customers

Appendix A2: Domestic Customers

Topic	Types of Question	Comments
The people	Number living in the household Number of adults and children Household gender composition Age profile of head of household Any disabled household members	Child can be "<15 years and below", or some other suitable age. It is important to know about gender composition prior to enquiring about income and occupation. Also because in most cases, women are responsible for payment of household water bills.
Employment	Number of income earners in the household Number of income earners at home; number away from home (short or longer-term migration?) type of employment of each income earner	Use general categories: government employee, employee of SOE, own business, unemployed, etc.
Household assets	Type of dwelling Any other major assets	Apartment, stand alone house, etc These can be an indicator of household income – choose a few key items – e.g. car, size of apartment, key appliances or furnishings etc. that are most likely to be found in middle and higher income households
Household income & expenditures	Household income (by income bands: 0-500, 501-1000, 1001-2000 RMB/month. etc.) Has income increased or decreased in last 5 years ? Are you better off or worse off than 5 years ago ? What are the main items of regular expenditure in this household ?	Respondents commonly understate their household monthly income These questions assist an assessment of overall income status of households and whether or not an increase in the cost of water could be afforded.

Topic	Types of Question	Comments
Water consumption	How much water do you use each month ? Is your connection to the water supply utility metered or not ?	How many m ³ / month Well water, rain water, bottled water, etc
Payments for water	Do you use water from other sources ? How much do you pay the WSC for water each month ? How much is the cost per m ³ of this water ? How much to you pay for water from all other sources ?	RMB/month RMB/m ³ RMB/month
Perceptions about water quality and service	How would you rate the quality of the water from the water supply utility ? How would you rate the water you receive for the following aspects: taste, odour, clarity, water pressure ? How many hours of service do you receive each day ? Do you ever experience interruptions to water supply ?	Rank from 1-5; 1= excellent, 5 = very poor Also rank from 1 – 5 0-6, 6-12, 12-18, 18-24 or other time blocks eg.: never, rarely, occasionally, sometimes, often
Perceptions of the water supply utility	Overall, how would you rate the service provided by the water supply utility ?	Rank from 1-5; 1= excellent, 5 = very poor
Perceptions about cost of water	Would you say that the cost of water for your household is affordable or not affordable ? Does the price of water affect how much you use ? If the price of water increased, what would happen to the amount of water you use in this household ?	Use less, use about the same amount, use more
Water equipment in the household	Do you have any water equipment in the household ? What would the cost of all this equipment be if you bought it today ?	This includes storage tanks, water filters, water pumps, and maybe other things – just make a list. total cost in RMB – such equipment usually implies deficiencies in the water and water service received from the WSC; if water quality and service improve, this equipment does not need to be maintained and these costs can be saved.
Willingness to pay	Contingent valuation questions	see main text

Appendix A2: Non-domestic Customers

Topic	Questions	Comments
Organisation	Type of activity undertaken by the organisation or entity	e.g. school, hospital, small business, industry, shop; for businesses, shops, industries, etc – identify the specific activity undertaken (coal mining, machine manufacture, restaurant, etc.) Prepare a list of key activities in your area so a box only needs to be ticked
Employees and clients	How many employees does the entity have ? How many people use or visit the premises each day ?	The objective is find out how many potential water users use the premises of the organisation each day.
Building characteristics	Location and type of building	Stand alone building, apartment or office building, shop-house, purpose built for organisation, etc.
Water consumption	How much water do you use each month ? Is your connection to the water supply utility metered or not metered ? Do you use water from other sources ?	How many m ³ / month tube well or other ground water source, rain water, bottled water, etc
Level of activity	<u>For businesses:</u> Would you say that your business activity has increased or decreased in last 5 years ? Is your business, overall, in a better or worse condition compared with 5 years ago ? How would you rate the cost of water compared with your other costs in this business? <u>For institutions and others:</u> Same questions as above, re-worded for institutions	These questions assist in making a simple assessment of overall situation of the business or organisation and how an increase in the cost of water might affect the business or organisation Rank from 1 – 5: 1 = very significant, 5 = insignificant (or maybe rank 1 – 3)

Topic	Questions	Comments
Payments for water	<p>On average, how much do you pay the WSC for water each month ?</p> <p>Are there any charges for water from the WSC apart from the water tariff ?</p> <p>How much is the cost per m³ of this water ?</p> <p>How much to you pay for water from all other sources ?</p>	<p>RMB/month</p> <p>RMB/m³</p> <p>RMB/month</p>
Perceptions about water quality and service.	<p>How would you rate the quality of the water from the water supply company ?</p> <p>How would you rate the water you receive for the following aspects: taste, odour, clarity, water pressure ?</p> <p>How many hours of service do you receive each day ?</p> <p>Do you ever experience interruptions to water supply ?</p> <p>Do hours of service or service interruptions ever have a negative impact on your business ?</p> <p>If yes, would you rate this as a significant impact or not ?</p>	<p>Rank from 1-5; 1= excellent, 5 = very poor</p> <p>Also rank from 1 – 5 (taste and odour may not be relevant for some non-domestic customers)</p> <p>0-6, 6-12, 12-18, 18-24 or other time blocks eg.: never, rarely, occasionally, sometimes, often</p>
Perceptions of the water supply utility	<p>Overall, how would you rate the service provided by the water supply utility ?</p>	<p>Rank from 1-5; 1= excellent, 5 = very poor</p>
Perceptions about cost of water	<p>Would you say that the cost of water for your business or organisation is affordable or not affordable ?</p> <p>Does the price of water affect how much you use ?</p> <p>If the price of water increased, what would happen to the amount of water that is used in this business or organisation?</p>	<p>Use less, use about the same amount, use more</p>
Water equipment	<p>Do you have any water related equipment ?</p> <p>What would the cost of all this equipment be if you bought it today ?</p> <p>If water quality and service from the WSC improved, would you still need to maintain this equipment ?</p>	<p>This includes storage tanks, water filters, water pumps, on-site treatment – just make a list.</p> <p>Total cost in RMB – such equipment may imply deficiencies in the water and water service received from the WSC, or it may imply special water requirements (e.g. in industrial processes); if water quality and service improve, this equipment may not be needed and these costs could be saved.</p>
Willingness to pay	contingent valuation questions	see main text

Appendix B: Example Questionnaires

Appendix B1: Domestic Customers

Appendix B2: Non-domestic Customers

Appendix B3: Alternative Format for Contingent Valuation Questions

Appendix B1: Domestic Customers

IDENTIFICATION INFORMATION

Household

1. Community:

House No.:

2. Survey Date:

3. Interview Serial No.

4. Result of contact with household:

- 1 Completed interview
- 2 Deferred
- 3 No competent interviewee at home
- 4 Refused
- 5 Household is temporarily closed or vacant
- 9 Other (specify)
.....

5. Name of the Head of this household:

.....

6. Interviewer

Name.....

Signature:.....

Date:.....

Completed Form Checked by:

7 Supervisor

Name.....

Signature:.....

Date:.....

Household details:

H1. Are you the person responsible for paying the water bill?

1. Yes
 2. No
 3. No, but able to answer questions

H2. Within which category do you fall?

1. Head of household
 2. Spouse/partner
 3. Other household adult aged 16+

H3. What is your occupation?

1. Employee of State owned enterprise
 2. Employee of private sector company
 3. Government employee
 4. Self-employed/small business
 5. Part time or temporary worker
 6. On lay-off with support payments
 7. Unemployed - without benefits
 8. Unemployed - with benefits
 9. Retired
 10. Other

Enumerator's Instructions

Try to interview the person who is responsible for paying the utility bill

If no, a) if this person does not know about water fees and payments in the household, ask when you can return to interview the person responsible for paying the water bill

b) if this person is over 16 and able to answer questions about water fees and payments, proceed with the questionnaire

Read the pre-selected responses

H4. What is the occupation of the head of household?

- 1. Employee of State owned enterprise
- 2. Employee of private sector company
- 3. Government employee
- 4. Self-employed/small business
- 5. Part time or temporary worker
- 6. On lay-off with support payments
- 7. Unemployed - without benefits
- 8. Unemployed - with benefits
- 9. Retired
- 10. Other

H5. What is the gender of the interviewee?

- 1. Male
- 2. Female

H6. To which age group do you belong?

- 1. 16- 20 years
- 2. 20-29 years
- 3. 30-39 years
- 4. 40-49 years
- 5. 50-59 years
- 6. 60 years and over

H7. How many persons are living in the household?

No. of adults (16 years and over)

No. of minors (under 16 years)

Enumerator's Instructions

Read the pre-selected responses

(if respondent is head of household, H3 and H4 are the same – mark H4 accordingly)

Do not ask this question but select a response based on observation.

Read the pre-selected responses

Let interviewee provide the response

Enumerator's Instructions

Do not ask this question but enter a selection based on observation

H8. Which type of house do you live in ?

- 1. Low rise apartment (up to 2 storeys)
- 2. High rise apartment building
- 3. Stand alone house
- 4. Other (specify)

H9. How many persons contribute to the household income?

Let interviewee provide the response

- 1. One
- 2. Two
- 3. Three
- 4. Four or more
- 9 Don't know

H10. What is the total household income per month?

Let interviewee provide the response

- 1. 0 – 250 RMB
- 2. 251 – 500 RMB
- 3. 501 – 750 RMB
- 4. 751 – 1,000 RMB
- 5. 1,001 – 1,500 RMB
- 6. 1,501 – 2,000 RMB
- 7. 2,001 – 2,500 RMB
- 8. 2,501 – 3,000 RMB
- 9. More than 3,000 RMB
- 10. Don't know / refused

H11. How much do you save per month, on average?

Let interviewee provide the response

- 1. Do not make any savings
- 2. Under 100 RMB
- 3. 101 – 200 RMB
- 4. 201 – 500 RMB
- 5. More than 500 RMB
- 9. Don't know / refused

WATER SERVICES:

Enumerator's Instructions

WS1. In this household, do you have a connection to the Water Supply Company for your water supply?

If no, terminate the interview

- 1. Yes
- 2. No

WS2. Do you have any other sources of water (in addition to the Water Supply Company) ?

- 1. Yes
- 2. No

If yes, please describe

WS3. How much water do you use each month, on average ? (Count all the water you use from all sources)

Let interviewee provide the response

- 1. m³
- 2. Don't know

WS4. Is your water supply from the Water Supply Company metered ?

(if yes, use Schedule A)

- 1. Yes
- 2. No

(if no, use Schedule B)

WS5. How much do you normally pay now for water each quarter ?

Let interviewee provide the response

- 1. RMB.....
- 2. Don't know

WS6. Do you know how much you pay per m³ for water now ?

Let interviewee provide the response

- 1. RMB...../m³.....
- 2. Don't know

WS7. Beside the water bill, does your household incur any other charges for water delivery?

- 1. Yes – give details
- 2. No
- 9. Don't know

Enumerator’s Instructions

WS8. What level of water supply service do you receive in general ?

Read the pre-selected responses

- 1. 24 hours per day
- 2. more than 12 hours per day
- 3. between 6 and 12 hours per day
- 4. less than 6 hours per day

WS9. Overall, how satisfied are you with the current water service

Read the pre-selected responses

- 1. Very satisfied
- 2. Satisfied
- 3. Indifferent
- 4. Dissatisfied
- 5. Very dissatisfied

If 3,4 or 5 selected, ask question WS9

WS10. If dissatisfied, what are your reasons?

Read the pre-selected responses, tick each that applies

- 1. Irregular supply
- 2. Not enough pressure
- 3. Water doesn’t taste good
- 4. Not enough hours of service
- 5. Water is cloudy
- 6. Other (specify)

SCHEDULE A - Households with METERED water supply

CONTINGENT VALUATION – WATER SERVICES

Preamble: In the previous questions you have been able to comment on the present water supply system. Now we would like you to consider some improvements to the service provided and answer questions about how much you would be willing to pay for water if these improvements are implemented. It is important that you answer the questions honestly. If you and others say that you are willing to pay less than you are really able, it may be difficult for the Water Supply Company to improve the service provided in the future. If you and others suggest that you would be willing to pay more than you are really able to, you may not be able to afford the improvements in service, when they happen. Please, therefore be truthful in stating your maximum willingness to pay.

Statement: Suppose that WSC were to provide 24 hour water supply to all households with adequate pressure in the pipes at all times. The water would be of potable quality – i.e. you could drink it safely without first boiling it.

The WSC would bill you for water every quarter just as at present.

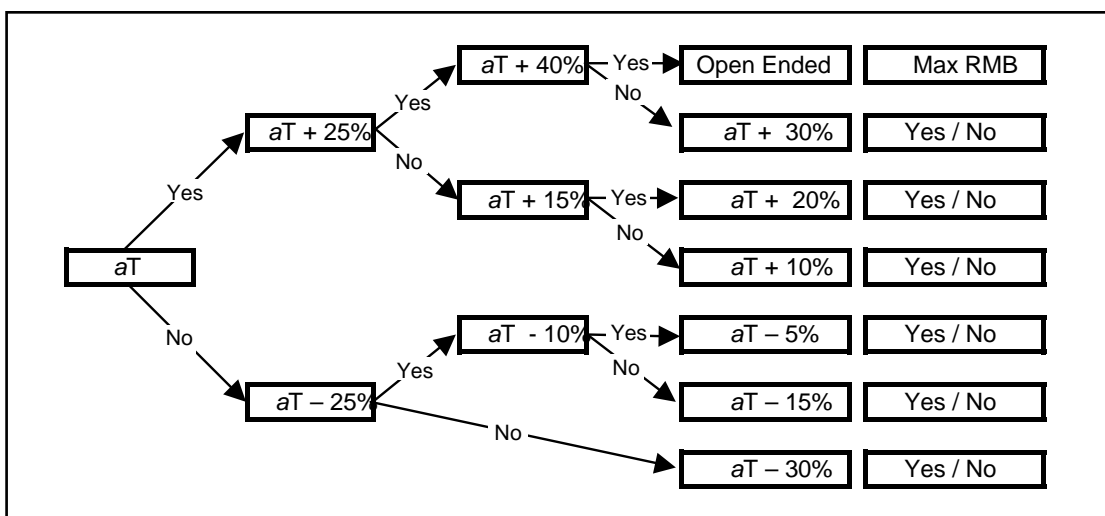
Question: At present you are paying RMB T per m^3 for water. With the improvements stated above, would you be willing normally to pay RMB $T + 10\%$ per m^3 for this water service?

Follow the arrow depending on the response given – for “yes” move up, for “no” move down. Circle the interviewee’s response Yes or No as you go along and also circle the highest ‘Yes’ response. If the Open Ended box is chosen, circle it and ask the interviewee what is the Maximum amount he/she is willing to pay each month. Fill in this response in the line below.

NB: the bidding process should be verbal – the table below is for guiding the interview and recording the result; do not show it to the respondents.

The percentages in the bidding table are for calculating bid amounts- **bid amounts must be put to respondents in RMB**, not percentages

RMB.....



Note: T = current cost of water per m^3 (average tariff)
 a = is a multiple for calculating high, medium and low starting points
 Starting point for respondents rotated for succeeding respondents.

SCHEDULE B - Households with NON-METERED water supply

CONTINGENT VALUATION – WATER SERVICES

Preamble: In the previous questions you have been able to comment on the present water supply system. Now we would like you to consider some improvements to the service provided and answer questions about how much you would be willing to pay for water if these improvements are implemented. It is important that you answer the question honestly. If you and others say that you are willing to pay less than you are really able, it may be difficult for the Water Supply Company to

improve the service provided in the future. If you and others suggest that you would be willing to pay more than you are really able to, you may not be able to afford the improvements in service, when they happen. Please, therefore be truthful in stating your maximum willingness to pay.

Statement: Suppose that WSC were to provide 24 hour water supply to all households with adequate pressure in the pipes at all times. The water would be of potable quality – i.e. you could drink it safely without first boiling it.

The WSC would install a water meter for your connection and would bill you for water every quarter as at present.

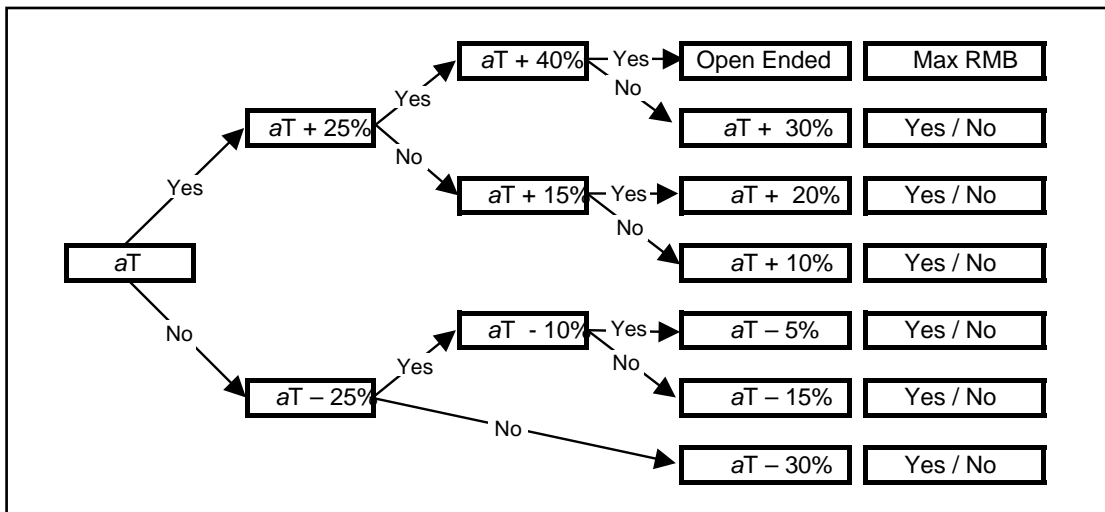
Question: At present the cost is RMB T per m^3 for water. With the improvements stated above, would you be willing normally to pay RMB $T + 10\%$ per m^3 for this water service?

Follow the arrow depending on the response given – for “yes” move up, for “no” move down. Circle the interviewee’s response Yes or No as you go along and also circle the highest ‘Yes’ response. If the Open Ended box is chosen, circle it and ask the interviewee what is the Maximum amount he/she is willing to pay each month. Fill in this response in the line below.

NB: the bidding process should be verbal – the table below is for guiding the interview and recording the result; do not show it to the respondents

The percentages in the bidding table are for calculating bid amounts- **bid amounts must be put to respondents in RMB**, not percentages

RMB.....



Note: T = current cost of water per m^3 (average tariff)
 a = is a multiple for calculating high, medium and low starting points
 Starting point for respondents rotated for succeeding respondents.

Appendix B2: Survey Questionnaire – Non-domestic Customers

ORGANISATION INFORMATION

1. Location:
 Admin. District:
 Community
 Address:

2. Survey Date

3. Interview Serial No.

Organisation Serial Number			

4. Result of contact with organisation :

- 1 Completed interview
- 2 Deferred
- 3 No competent interviewee present
- 4 Refused
- 9 Other (specify)

5. Name of organisation or company

6. Interviewer
 Name.....
 Signature:.....
 Date:.....

7. Completed Form Checked by:
 Supervisor
 Name.....
 Signature:.....
 Date:.....

Preamble:

Good morning/afternoon/evening. Are you familiar with the use of water in this organisation ? If you aren't, may I speak to someone who does know about it ?

We are conducting a survey for the _____ Water Supply Company about the water service and price of water. I would like to ask you a few questions about these subjects and about improvements you would like to see in the water supply system. We also need to ask some basic questions about your organisation.

Organisation details

O1. What type of organisation is this?

- 1. Industry
- 2. Government / council / other institutions
- 3. Schools, hospitals, clinics, etc
- 4. Shop, small business, etc
- 5. Restaurant, public baths, etc.

O2 What type of activity or business is carried out at this location?

.....

O3. How many people work in this organisation or use water at this location each day, on average ?

.....people

O4. Are you the:

- 1. Owner / senior or middle manager
- 2. Other employee
- 3. Other (specify).....

Enumerator's Instructions

Read the pre-selected responses

Write in type of activity (e.g. type of business, industry, government organisation, school etc) what they produce / what they do.

For most organisations, how many work there? For a restaurant, hotel, school, clinic, about how many use water there during the day – for example for washing, toilets, cooking, drinking, etc. - approximate estimate

Let interviewee provide the response

Let interviewee provide the response

O5. What is the gender of the interviewee?

- 1. Male
- 2. Female

O6. Do you have a separate water bill for your organisation ?

- 1. Yes, separate bill
- 2. No, shared with other organisations.
- 3. No bill / not relevant
- 9. Don't know

O7. What type of building is this organisation or business located in ?

- 1. Own building, stand alone
- 2. Apartment or office building
- 3. Shop-house
- 4 Other (specify)
.....

Enumerator's Instructions

Do not ask this question but select a response based on observation.

Let interviewee provide the response

Let interviewee provide the response

building of which the organisation is the sole occupant

Water Services**Enumerator's Instructions**

WS1. In this organisation, do you have a connection to the Water Supply Company for your water supply?

If no, terminate the interview

1. Yes
 2. No

WS2. Do you have any other sources of water (e.g. own well, etc) ?

1. Yes
 2. No

If yes, please describe

WS3. How much water does your organisation use each month, on average ? (Count all the water you use from all sources)

Let interviewee provide the response

1. m³
2. Don't know

WS4. Is your water supply from the Water Supply Company metered ?

1. Yes
 2. No

WS5. How much do you normally pay now for water each month ?

Let interviewee provide the response

1. RMB
2. Don't know

WS6. Do you know how much you pay for water per m³ ?

Let interviewee provide the response

1. RMB/m³.....
2. Don't know

WS7. Beside the water bill, does your organisation incur any *other* charges for water delivery?

- 1. Yes – give details
- 2. No
- 9. Don't know

WS8. What level of water supply service do you receive in general ?

- 1. 24 hours per day
- 2. more than 12 hours per day
- 3. between 6 and 12 hours per day
- 4. less than 6 hours per day

WS9. Overall, how satisfied are you with the current water supply ?

- 1. Very satisfied
- 2. Satisfied
- 3. Indifferent
- 4. Dissatisfied
- 5. Very dissatisfied

WS10. If not satisfied, what are your reasons?

- Irregular supply
- Not enough pressure
- Not enough hours of service
- Water doesn't taste good
- Water is cloudy
- Other water quality problems
- (specify)
- Other (specify)
.....
.....

Enumerator's Instructions

Read the pre-selected responses

Read the pre-selected responses

If 3,4 or 5 selected, ask question WS9

Read the pre-selected responses, tick each that applies

Probe for reasons, write in

WS11: What improvements would you like to be made to your water system? (Probe for details.)

.....

WILLINGNESS TO PAY – WATER SERVICES

Enumerator instruction:

Conduct the WTP Schedule questions in the appropriate Schedule below.

At the end of the interview complete question WTP 1 *yourself (this question is not for the respondent)*:

WTP1 In your opinion, in answering the WTP questions, was the respondent:

Enumerator to make assessment after WTP is complete

- 1. Serious and appeared to answer honestly
- 2. Seemed to give a biased response
- 3. Did not take the WTP questions seriously
- 4. It is impossible to give an opinion

SCHEDULE A: Non-Domestic Customers

Preamble: In the previous questions you have been able to comment on the present water supply system. Now we would like you to consider some improvements to the service provided and answer questions about how much you would be willing to pay for water if these improvements are implemented. It is important that you answer the question honestly. If you and others say that you are willing to pay less than you are really able, it may be difficult for the Water Supply Company to improve the service provided in the future. If you and others suggest that you would be willing to pay more than you are really able to, you may not be able to afford the improvements in service, when they happen. Please, therefore be truthful in stating your maximum willingness to pay.

Statement: Suppose that WSC were to provide 24 hour water supply to all customers with adequate pressure in the pipes at all times. The water would be of potable quality – i.e. you could drink it safely without first boiling it.

For customers with metered supply: The WSC would bill you for water every quarter just as at present.

For customers with supply not currently metered: The WSC would install a water meter for your connection and would bill you for water every quarter as at present.

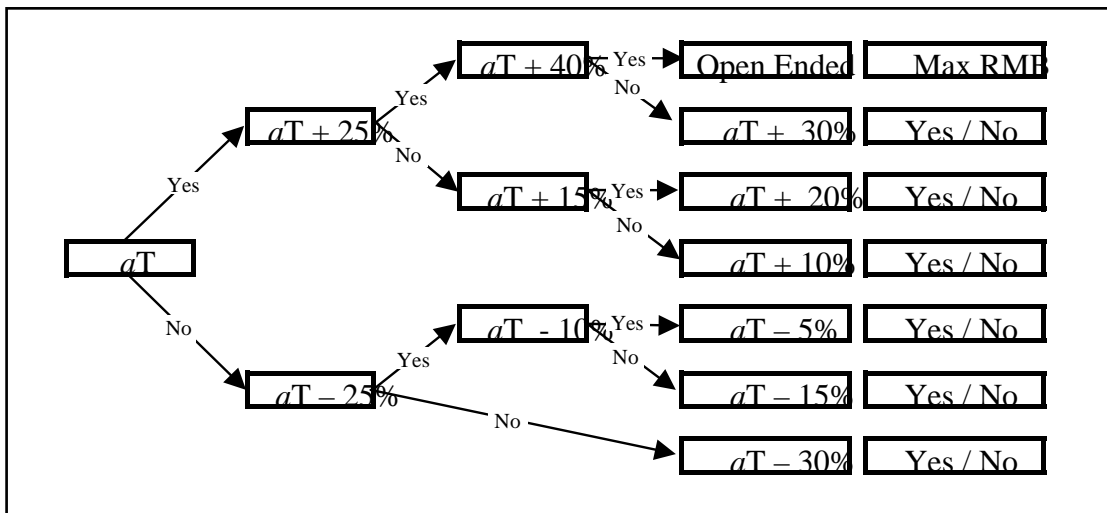
Question: At present the cost is RMB T per m^3 for water. With the improvements stated above, would you be willing normally to pay RMB $T + 10\%$ per m^3 for this water service ?

Follow the arrow depending on the response given – for “yes” move up, for “no” move down. Circle the interviewee’s response Yes or No as you go along and also circle the highest ‘Yes’ response. If the Open Ended box is chosen, circle it and ask the interviewee what is the Maximum amount he/she is willing to pay each month. Fill in this response in the line below.

NB: the bidding process should be verbal – the table below is for guiding the interview and recording the result; do not show it to the respondents

The percentages in the bidding table are for calculating bid amounts- **bid amounts must be put to respondents in RMB**, not percentages

RMB.....



Note: T = current cost of water per m^3 (average tariff) (or T = average water bill for the category)
 a = is a multiple for calculating high, medium and low starting points
 Starting point for respondents rotated for succeeding respondents.

SCHEDULE B : Alternative WTP Questions for Non-domestic Customers

Preamble: I want you to consider a possible improvement to your water supply system. It is important that you answer the question honestly. If you and others say that you are not willing to pay for changes it may not be possible for the changes to occur. If you and others suggest that you would be willing to pay more than you are able to, you may not be able to afford the changes, should they happen. Please, therefore be truthful in stating your maximum willingness to pay.

Statement: Suppose that WSC were to provide 24 hour water supply to all customers with adequate pressure in the pipes at all times. The quality of the water would be the same as at present.

Question:

WTP I1 Would you be willing to pay more for this service than you pay for water at present ?

Read out, let respondent provide the response

- 1. Definitely yes
- 2. Possibly yes

- 3. Probably no
- 4. Definitely no
- 9. Don't know / no response

If 1 or 2 selected, ask questions WTP I2 & I3

If 3,4, or 9 selected go to question WTP I4

WTP I2 If respondent is willing to pay, ask: How much are you willing to pay monthly for this service ?

RMB

WTP I3 Why are you willing to pay this amount?

.....

WTP I4. If respondent is not willing to pay, ask: Why are you not willing to pay for improvements to your water supply service ?

.....

Appendix B3: Alternative Format for Contingent Valuation Questions

SCHEDULE A - Households with METERED water supply

CONTINGENT VALUATION – WATER SERVICES

Preamble: In the previous questions you have been able to comment on the present water supply system. Now we would like you to consider some improvements to the service provided and answer questions about how much you would be willing to pay for water if these improvements are implemented. It is important that you answer the questions honestly. If you and others say that you are willing to pay less than you are really able, it may be difficult for the Water Supply Company to improve the service provided in the future. If you and others suggest that you would be willing to pay more than you are really able to, you may not be able to afford the improvements in service, when they happen. Please, therefore be truthful in stating your maximum willingness to pay.

Statement: Suppose that WSC were to provide 24 hour water supply to all households with adequate pressure in the pipes at all times. The water would be of potable quality – i.e. you could drink it safely without first boiling it.

The WSC would bill you for water every quarter just as at present.

Question: At present you are paying RMB T per m^3 for water. With the improvements stated above, would you be willing normally to pay RMB $T + 10\%$ per m^3 for this water service ?

Do not show any prices to the respondent.

For each succeeding interview, select alternatively 1, 4 or 7 as the starting point, asking the respondent if they would be willing to pay the stated amount per m^3 . For “no” responses move to the next lower price, for “yes” responses move upwards. If moving down the list the bidding stops when the first “yes” is reached, if moving upwards, when the first “no” is reached.

Mark the starting point with an S and the final price with an F.

	Derivation	Example in RMB	
1	T + 60%	2.40	If yes, how much would you be willing to pay ? RMB...../ m^3
2	T + 45%	2.20	
3	T + 30%	1.95	
4	T + 15%	1.70	
5	T	1.50	
6	T -10%	1.35	
7	T -20%	1.20	If no, how much would you be willing to pay ? RMB...../ m^3

Note: T = current cost of water per m^3 (average tariff)

Document Reference Sheets

Glossary:

Ability to Pay (ATP)	The capacity of a household or business to make payments for water supply services. ATP is about affordability, especially for low income users.
Contingent Valuation Method (CVM)	Survey based method which places monetary values on goods or services which are described to respondents
SPSS	Statistics Package for Social Sciences – proprietary software for data analysis
Willingness to Pay (WTP)	The maximum amount that an individual or organisation states they are prepared to pay for a good or service

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Related materials from the MWR IWRM Document Series:

Thematic Paper 3.2	Urban Water Supply Demand Management
Advisory Note 5.4	Tariff Setting for Small to Medium Size Water Supply Company
Example 5.4	Tariff Setting for Beipiao Water Supply Company
Example 5.5	Willingness to Pay Survey for Beipiao Water Supply Company
Thematic Paper 5.7	Financial Management and Modelling in Small and Medium Water Supply Companies
Manual 5.7	The Development and Use of a Model for Financial Analysis of a Small to Medium Size Water Supply Company in China

Where to find more information on IWRM – recommended websites:

Ministry of Water Resources: www.mwr.gov.cn

Global Water Partnership: www.gwpforum.org

WRDMAP Project Website: www.wrdmap.com

China – UK, WRDMAP

Integrated Water Resource Management Documents

Produced under the Central Case Study Documentation Programme of the GoC, DFID funded, Water Resources Demand Management Assistance Project, 2005-2010.

Documents will comprise of:

Thematic Papers

Advisory Notes

Manuals

Examples

Training Materials

5.
Economic
Tools

IWRM Document Series materials, English and Chinese versions, are available on the following project website

WRDMAP Project Website: www.wrdmap.com

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