UK Case Study Fact Sheet

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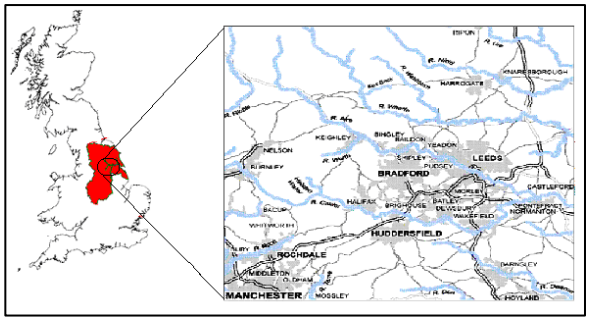
The heart of AquaMoney (see Policy Brief No. 1) are 11 case studies from different European countries. Based on these case studies, AquaMoney developed guidelines for benefit transfer. This policy brief will present the main results of the UK Case study.

UK Case Study

The principle issue within the UK case study was one of water quality. The project sought to value improvement in water quality using the contingent valuation (CV) method. The application addressed a number of key concerns regarding such stated preference methods. Tests of conformity with prior expectations derived from economic theory were conducted. These included examining the sensitivity of values to changes in the nature of any water quality improvement (the 'scope' test) and robustness against previously observed anomalies in such values (examining whether variation in the design of questions unduly affected valuation responses; e.g. testing for question ordering effects). Another research aim was to capture the complex changes in the value of water quality improvements depending upon their location. This included investigation of how values change over space (distance-decay) and the effect of the presence or absence of alternative sites for enjoying good water quality (substitution effects). This was achieved using geographical information systems (GIS) capabilities.

The area selected for the UK case study lies within the Humber basin (see map on following page). This covers an area of 25,000 km^2, more than 20% of the land area of England. Within the Humber basin special attention was paid to the Ouse catchment with the largest urban area being the Leeds–Bradford conurbation, totalling 1,200,000 inhabitants. In order to fully capture the distance-decay and substitution effects an efficient yet spatially variable sampling strategy was employed to collecting survey data. A custom designed computer assisted personal interview program was developed featuring touch screen study area maps to elicit spatially explicit information. A highly trained team of interviewers was assembled and a large database of face-to-face interviews was collected. Scenario rejection (protest) rates were low at just 2% and a represenative sample was collected.

Results quantify values for water quality improvements and conform to prior expectations for a valid study. Values decay with increasing distance from an improvement and are highest in areas where there are fewer alternative resources.



Map of UK Case Study Area

AquaMoney is a research project funden under the 6th EU Framework Programme

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Environmental situation

The Humber basin presents a great variety of water quality levels (from poor to pristine) and the environmental perception depends on the geographical areas considered. Generally the river quality is poorer in highly urban areas and better in rural areas.

The majority of respondents agreed with the quality represented in the questionnaire map (where the water quality of one of three local rivers is very good, one is good and the other fair). Respondents did not report any particular problems with flooding or scarcity but they do report variability in water quality according to weather conditions and the time of the year.

Willingness-to-Pay

The protest rate is only 2% of the sample. Mean willingness to pay (WTP) varied logically with the degree of improvement under consideration from €16 to €27 (in 2008 prices adjusted for purchasing power parity across EU countries) depending upon the scope and location of the change in water quality. The questionnaire also examined issues such as river uses and travel costs.

Sensitivity to scope

A scope test was conducted using a split sample experiment in which different respondents value improvements to different lengths of river. Results show that values are scope sensitive and therefore generally conform to prior expectations. However, there is evidence of some ordering effects upon values and these need to be controlled for when determining values for policy use.

Distance decay

Tests of distance decay all conform strongly with prior expectations providing support for the validity of findings. Analysis of WTP values show that they fall as distance to the improvement site increases and eventually reach zero. So, the further away a respondent lives from the site of an improvement, the lower their WTP for that improvement. Similarly, the closer a respondent's home is to a substitute site (e.g. an alternative river site or the coast), the less that respondent is willing to pay for the site under valuation. Analysis highlights the imporatnce of correctly specifying the nature of these distance relationships when assessing WTP in any particular area. In particular these relationships are unlikely to be simple straight line decays in value but rather are non-linear relationships. A considerable advantage of examining such relations is that they define the 'economic jurisdiction' area within which households have some positive value for an improvement. This provides the best basis for calculating the total value of an improvement and avoids the errors which occur when values are aggregated across some administrative area.

Special Issues

The UK study was methodologically important to the rest of the AquaMoney water quality work. The study developed a novel 'water quality ladder'. This links the physical characteristics of water bodies to a readily comprehensible scale suitable for conveying water quality and its change to members of the general public within surveys. The UK study design also provided a template for the common element of valuation studies across five of the European countries involved in AquaMoney general By applying this common design across different countries, data was generated for a 'value transfer' exercise. Here the benefit values estimated in the various countries are jointly analysed to examine whether this information might allow the estimation of values for further, currently unstudied, locations. Results from this exercise were encouraging and suggest that future research should be able to refine a robust value transfer tool for policy and decision making use.

Summary

The study shows a positive willingness to pay for water quality improvements and provides a template for future studies. We verify that the valuation of improvements differs between users and non-users and show the vital importance of considering the location of any improvement in determining its value.

Further information can be found in the Case Study Reports and in further Policy Briefs on:

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