

Po Case Study Fact Sheet

AquaMoney Policy Brief No. 4-5

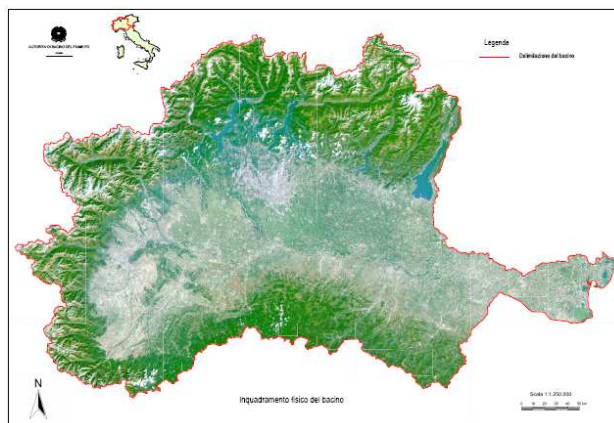
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The heart of AquaMoney ([see Policy Brief No. 1](#)) are 11 case studies from different European countries. Based on these case studies, AquaMoney developed guidelines for benefit transfer. This policy brief will present the main results of the Po Case study. The idea is to give policy makers an overview of the range of values that can appear and how the perception of environmental problems in the different countries differs.

The Po Case Study

The Po river basin is located in the North-West of Italy. The basin area is around 74.000 km² (40.606 of mountain and 29.372 of plain) with 16 million inhabitants. The main water using sector is agriculture (46%), followed by industry (20%) and hydropower (18%). The household sector accounts for only 16% of total water use in the basin. The distribution among different water uses is very heterogeneous in space.

The survey was located in the sub-basin having as administrative reference the ATO 4, Modena. The area is located in the extreme south of the Po Basin. The sub-basin area is about 3000 km² (60% mountain and 40% plain) with about 670000 inhabitants. In this area there are three main rivers (Secchia, Panaro and Enza) flowing from south-west to north-east, into the Po River.



Map of the Po River Basin

The evaluation was based on the use of Contingent Valuation Method (CVM) and Choice Experiment (CE) to estimate the environmental value of quantitative water uses and the willingness to pay to reduce the risks of water shortages (common design in water scarcity group). The survey was made using face to face interviews in Modena with a response rate equal to 17% (242 respondents out of 1381 people contacted).

The sample is balanced as for sex, with a presence of 60% of male and 40% of female. The average age in the sample is 40.4 years and the annual average income is 18,248€/year, equal to 1,520 €/month.

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Environmental situation

The most frequent problems identified by respondents are economic ones, safety/crime and traffic, that well represent trends in public opinion in Italy. In the sample, few people mention environment/water problems as one of the three most important problems. However, faced with the direct question, a very large share of respondents (92.15%) considers the environment important/very important. In most cases, water scarcity problems are not considered as relevant (75% of respondents). However, 61.5% believe that the environmental situation/condition is affected by water scarcity problems. Only 29% of people have really suffered restrictions in the last 10 years. The stated causes of restrictions do not represent specific water scarcity problems in the area, such as for example water pipes problems. In spite of this, the expectation of future restrictions is high. In fact, 48% of people believe that they will experience water restrictions in the future, while 25% of people are uncertain.

Willingness-to-Pay (WTP)

In the first part of the questionnaire, respondents generally stated a high appreciation of environmental problems. But when we ask to translate words into money people are dubious. More than 15% of people are not willing to pay for measures to ensure the best level for the attributes. Using the CVM, the mean WTP is at 36.04 €/year per household for environmental improvement and 34.44 €/year for preventing external water restrictions.

CVM	Mean (€/household)	Median (€/household)
Environmental improvement	36.04	30
Preventing external household water restriction	34.44	25

The CE analysis also shows that people are willing to pay for an environmental improvement; in fact the estimates are significant and positive. In particular, they pay to increase from the poor

environmental status to another one as shown in the table. The amount increases when the level of improvement increases, though these increases are non-linear.

CE	WTP (Euros)
Environmental improvement sufficient	62.07
Environmental improvement good	119.57
Environmental improvement very good	135.71
External household water restriction	1.07

Sensitivity to scale

The survey was carried out with two subsamples, each one using a different reference basin, described through a different map. A subsample was shown a map of the whole Po basin, while the other was shown the sub-basin of ATO4 (Modena-Reggio). Contrary to expectations, the results of the CE for the small sub-basin show a higher WTP for the shift from poor water quality level to the sufficient level. The contrary happens for the shift to the higher level. The results do not allow for identifying a clear scale effect. Rather, they hint at the idea that respondents perceived the difference between the two basins and answered consistently with the prevailing feature of, respectively, the whole and the sub-basin. Moreover, respondents' WTP seem more affected by distance decay than by effects of scale.

Summary

The study was successful in obtaining relevant and consistent WTPs for the issue addressed. However, cautious judgments and use of this information is recommended as: a) people tend to overestimate importance of environmental and water scarcity problems when it is directly asked; b) a large share of attention to water scarcity is due to expectations of worsening water availability rather than to past water shortages experienced in the area.

Further information can be found in the Case Study Reports and in further Policy Briefs on www.aquamoney.org

