Report of the Fifth Plenary AquaMoney Meeting

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Content

Summary

- The fifth and last plenary AquaMoney meeting was held 15 and 16 October 2008 at Universidad Politecnica Valencia. Twenty-nine project partners from 18 international research institutes participated in the meeting. Ms. Anita Payne represented the European Commissions DG Environment during the meeting. The project scientific officer was unable to attend.

- The main objective of the fifth AquaMoney plenary meeting was (i) to present the case study results, (ii) to discuss key methodological issues, (iii) to integrate key messages from the case study results into the draft guidelines and (iv) to discuss the road ahead, especially regarding the final AquaMoney conference to be held in 2009.

- The AquaMoney case studies are organized in three main groups, reflecting the key water management issues in the context of the Water Framework Directive (WFD) across European Member States:
    - Water quality with an emphasis on eutrophication and other water pollution problems (Humber-UK, Morsa-Norway, Odense-Denmark, Scheldt-Netherlands, Scheldt-Belgium, Neris-Lithuania, and the groundwater case study in the Rhine region in France)
    - Ecological restoration of heavily modified water bodies (Danube river basin in Austria, Hungary and Romania)
    - Water scarcity and water resource allocation costs (Jucar-Spain, Guadalquivir-Spain, Tajo-Spain, Po-Italy, Lesbos-Greece)

- Each thematic group used a common research design in order to facilitate comparability and tests of transferability of results.

- The case studies have concluded their survey work and started interpreting the results from the data analysis. Based on the data output, the potential for benefit transfer was assessed, either through value functions, unit value transfer or other approaches. Main findings were that the harmonised questionnaire was a success and offered the envisaged potential for Benefit Transfers (BT). However, how much error is considered acceptable for BT to be a viable cost-effective valuation method also depends on policymaker demand for accurate estimations.

- Value maps are seen as a promising way to visualise the survey results to meet the information needs of policy makers. Accordingly, the potential of a GIS-based water value map for Europe is explored based on the work undertaken by the case study groups and the valuation study meta-analysis.

- In addition the surveys provided valuable information for policy makers, especially regarding the perception of the public of current water management issues, and public support and willingness to pay for a variety of WFD-related policy scenarios to improve water quality, restore water bodies, and improve water resources allocation. The case study work appeared to have an important communication and information extension function.

- Based on email discussions before the Valencia meeting, best practice recommendations were presented and discussed in the AquaMoney group. These will be incorporated in the revision of the draft guidelines.

- The revised draft guidelines and an additional policy brief summarising the key messages from the case studies will be available by the end of January 2008.

- An expert group will comment on the revised draft guidelines in spring 2009 and allow preparing final guidelines in time for the final AquaMoney conference in 2009. The date and location of the final event are yet to be decided. The preferred option would be to hold the conference as a side-event during the EARE conference in Amsterdam (June 2009).

- Due to the extra work invested in the development of common valuation designs, the case studies were delayed by 6 months. The scientific officer was informed about this beginning of the year. He will be asked for a formal extension of the project as soon as possible after the Valencia meeting by the project coordinator.

1. Introduction

The present report summarises the main results of the fifth AquaMoney plenary meeting in Valencia, Spain, 15-16 October 2008. AquaMoney (SPPI-022723) is a Specific Targeted Research Project, supported by the European Commission, DG Research, under the 6th Framework Programme. The Fifth plenary meeting took place at the beginning of the third out of the three project years and aimed at providing the results and key messages from the AquaMoney case studies. Further background information about the project and the foreseen activities can be found at the project website www.aquamoney.org and in the Description of Work.

The main objectives of the fifth plenary meeting were

- to present the case study results,
- to discuss key messages from the case studies,
- to integrate the key messages into the revised draft guidelines,
- to discuss next steps ahead, including the final conference.

The programme of the meeting and the list of participants are included in the Annex to this report. The presentations at the meeting are available at the project website. The meeting consisted of two days of plenary sessions with the project team, combined with a number of break-ups in the three different case study groups.

The plenary sessions of the project team started on Wednesday with presentations of the key results from each of the case studies, grouped thematically as: *Danube river restoration* (RO, HU, AT), *water scarcity* (ES, GR, IT) and *water quality* (GB, NL, BE, DK, NO, LT, FR). As a need for further discussions within the thematic groups became apparent during the meeting, the schedule was slightly adjusted, and a parallel breakout session added. The second day continued with more case study results. A main focus was the key messages from the case studies, a condensed summary of the main outcomes. Additionally, presentations on the current status of the GIS valuation map development was given by Luke Brander, the definition and role of Environmental and Resource Costs in AquaMoney by Roy Brouwer based on a meeting earlier this year with DG-Env and DG-Research in Brussels, and the role of hydro-economic modelling by Manuel Pulido. The last session was divided into two groups. While the core team for the guidelines met to discuss the inclusion of the key results into the revised guidelines, the other team members debated the topics to be covered in the policy briefs as well as the options for the final conference in 2009.

The fifth plenary meeting in Valencia was organised and facilitated by the Universidad Politecnica Valencia and the project coordinator at IVM-VU. The remainder of this report consists of a summary report of the plenary sessions.

2. Results from the Case Studies

2.1 Danube river restoration

Markus Bliem presented the main results from the Danube river restoration group. The Danube is not only the second largest river in Europe (2850 km), but also a prime example of an international river basin. The case studies in this group cover Austria, Hungary and Romania. The Danube is heavily used for navigation and, thus, most river stretches are classified as HMWB. The main environmental issues are a lack of river connectivity, canalization, regulation and hydropower. The ecological restoration of the Danube river flood plains is an important measure to achieve the GES. Still, the costs can be substantial while the benefits are yet uncertain.

The main objective of the thematic group was to value the non-market benefits of ecological floodplain restoration (in two steps: 50% or 90% of original flood plains), flood control and water quality improvements. An additional emphasis was on testing the transferability of results in an international context: Austria, Hungary and Romania.

The use of main results fractional factorial design allowed to reduce the number of experiments. The group conducted the survey as unlabelled experiments with 32 choice sets, i.e. 8 x 4. Each choice offered two development options and a status quo . Each choice card option displayed three attribute levels: flood frequency, water quality and increase in water bill.

Flood frequency could range from once every five years to once every 100 years. Water quality description used the standard water quality ladder: boating, fishing, swimming and near natural aquatic life, translating into moderate, good and very good water quality levels. The color scheme used in the WFD was used to depict the state of the river. Moderate water quality was assumed when only boating is possible, while in a good water quality state, swimming and fishing for consumption would not be possible without restrictions. Only in a good water quality, all four elements would be present. The payment levels would increase with the water quality and the reduction of flood frequencies. The attribute levels were determined using a Spatial Decision Support System.

In Austria, a web-based survey addressed 1977 respondents by November 2007, leading to 506 valid answers, a response rate o 26%. In Hungary, 892 face-to-face interviews from November 2007 to January 2008 led to 471 responses, a response rate of 53%. In Romania, 850 face-to-face interviews in November 2007 led to 519 responses, a response rate of 61%. It can be concluded that each case study ended up with about the same number of responses, albeit with different means: while the Austrian web-survey addressed a far greater number of potential respondents, the response rate was also considerably lower than in Hungary and Romania. And while both Austria and Romania conducted the survey in November 2007 only, the survey took until January 2008 in Hungary.

When comparing the sample characteristics, it becomes obvious that:

i) the web-based survey lead to slightly younger sample structure with effects mostly at the end of the age spectrum;
ii) the socio-economic differences between the three case studies are significant (Romania: 68% live of less than 500 EUR/month, Hungary: 75% live of less than 1000 EUR/month, Austria: 79% live of more than 1000 EUR/month).

On the other hand, gender representation was almost 50-50 for all case studies.

The first question elicited the respondents water quality perception: In Austria 70% believe the quality to be either good or very good. In Hungary and Romania, 82% believe water quality to be only moderate or even poor, contrary to scientific evidence.

Just very few respondents have experienced flooding in the past: Austria 16%, Hungary 19% and Romania 8%.

The summary results from the survey show that in general, respondents chose an improvement over the status quo, although the options were coming with a price tag. In Romania, however, 28% of all decisions preferred the status quo over the improvement options, while number were considerably lower for the two other countries.

Based on the answers, the group estimated choice models using Random Parameter Logit modeling. The most striking fact was that flood frequency was not significant in Hungary. Furthermore, flood frequency had a negative significance in Romania, with no straightforward explanation. Only in Austria, flooding had a positive significance.

One other observation from the data analysis was that respondents who view water quality already as good, are far less likely to pay for improvements. Income effects could be observed as well: higher incomes result in higher payments.
The implicit prices for ecological restoration based on marginal willingness to pay per household per year are low to inexistent for flood frequency reductions, but significant for changes to good or very good water quality: 35.7 EUR to 81.2 EUR. Based on these values, the total surplus per household per year for five different policy scenarios. i.e. combinations of flood frequency reduction and water quality improvement were computed. Obviously, as income is lower in Romania than in Austria, total surplus is also between 4.5 and 5.5 times lower.

In a subsequent step, the total surplus per household was aggregated over a specific area, taking into consideration income variation, distance decay and spatial distribution of the population, leading to the total economic value of a good and very good ecological status. The rendering of the information in GIS value maps or WTP maps was conducted by IVM. The highest values could be observed in cities. The adjusted TEV for a good ecological status were:

i) Romania: 112.8;
ii) Hungary: 43.4;
iii) Austria: 77.4.

Best practice recommendations:

The group gave clear priority to a harmonised experimental design, thus eliminating the poor water quality and setting the base line scenario at moderate, regardless of actual circumstances.

Furthermore, the group employed SPSS to generate a factorial factor design. Dominant choice sets were carefully changed throughout the experiment.

It could be observed that the pictograms worked well. Other visual elements of advantage were maps to indicate the location and the level of restoration.

However, it was difficult to communicate the difference between 50% and 90% restoration levels, so that there was no difference in WTP. Maybe the 90% scenario was just not credible for the respondents. It should be discussed whether specific river restoration maps showing more detailed environmental related issues and different scales can be of help. Also, it could be useful to ask each respondent to value both restoration levels in order to better compare.

Other issues arose from the different sampling strategies: The web-based survey in Austria was commissioned to a specialized company, thus ensuring representativeness of the sample, low and guaranteed costs and very reduced survey effort. On the other hand, the web-based approach requires software and skills to implement a survey, both the design services and the panel addresses had to be purchased. Finally, the web-survey was not leading to direct personal contacts and only very poor feedback.
As the spatial distribution of the web-panel was not entirely clear, asymmetric space distribution might have been an issue with distance decay. Still, the sample was highly representative. On the other hand, in face to face interviews, inhabitants from congregations are over-represented. The timing of the survey was well suited, since the winter season excluded tourist almost entirely.

Discussion:

The ensuing discussion focused on the methodology to convert elicited valuations into value maps. A particular concern were how currencies were compared. It turned out that merely the exchange rate was taken into account, but not the purchasing power parity. Given the same Euro value son the cards, this may have been a reason for the higher number of opt-outs in Hungary and Romania. It was further pointed out that the income factor, i.e. the assumed constant elasticity for higher environmental valuation, was taken into consideration when computing TEV.

Another issue was the inclusion of distance decay in all three countries, but with individual cut-off points. It was however mentioned that the focus on distance decay may have led to a narrow interpretation of the results. Other factors such as environmental preferences could have been included as well.

It turned out that transferability has been tested in the group as well, with the highest errors for transfers from Romania to Austria, based on best fit models for the full function. It was, however, pointed out that with choice experiments, the result will always be a probability of choosing an option given a set income. For an explorative CBA, errors in the area of 25-30% may be acceptable, but for other purposes such as compensation schemes, this would not be appropriate.

It was suggested to include average available income levels for the three countries in order to better understand the different results.

The influence of substitution possibilities on the coefficients could not be addressed within the case studies.

2.2 Water Scarcity

Julia Marin-Ortega presented the results from the water scarcity group. The main objective of the thematic group was to assess the costs, i.e. the foregone benefits of water resources under scarcity conditions, specifically, to estimate the economic value of:

- Environmental water use, i.e. allocating water to the environment to ensure good environmental status under conditions of limited water availability;
- Water availability for households, i.e. reduction of the probability of water restrictions for secondary uses (while primary uses are always guaranteed).

Finally, the team also tested the transferability of the estimated values. It was stressed that the group did not intend to address the issue of allocation of water among different water uses, because of the difficulties derived from having very different case studies in this respect. Nevertheless, the team included a non valuation question in which people were asked to rank water uses according to their priority in case of water scarcity, choosing between agriculture, industrial and energy use and environment

The group covered a total of four case study areas: Po (Italy), Lesbos (Greece), Tajo (Spain) (results to come), Guadalquivir (Spain) and Serpis (Spain).

The experiment was designed using main effects factorial factor design with 24 choice sets, i.e. 6 x 4. For each choice, three attribute levels were given:

- Probability of water restrictions in households (secondary uses) - measured through number of years with water restrictions in the next 10 years, 4 different levels (one year in ten to four years in ten), common baseline: restrictions in 4 years in the next 10;
- environmental quality due to water flow level - defined as the deviation from natural conditions in relation to a set of environmental features (based on WFD levels- Annex V), four different levels (from bad to very good), common baseline: bad status (significant deviation from natural conditions);
- monetary attribute (6 levels): annual increase on water bill during the next 10 years.

Each choice offered the baseline scenario and two change options.

The four surveys depicted very different characteristics: The population in the river basin varied between 7 million (Tajo) and 90,000 inhabitants (Lesbos). Sample size ranged from 241 (Po) to 394 (Serpis). All studies were conducted face-to-face in Summer 2008.

Samples were all representative of the average population. Only in Greece, the share of female respondents was considerably lower with only 25%. However, it was found that gender did not affect WTP, thus limiting the impact of this representativeness flaw. Average income ranged from 1,387 EUR (Po) to 1,965 EUR (Guadalquivir). More or less all respondents considered the environment to be important. Water was judged to be one of the top three issues in the region by only between 9% (Guadalquivir) and 17.1% (Lesbos). On the other hand, water availability was not an issue in all case studies: while 84.1% felt so in Guadalquivir, only 21.7% had the same impression in the Po RB, which has no scarcity experience as such. The other RBs stated water availability to be of concern for at least 50% of respondents. Similarly, water restrictions have not been experienced by all respondents in the last 10 years: only 18.5% in Serpis and 29% in Po. However, 62.5% of respondents in the Guadalquivir case study had experienced shortages in the past 10 years. Nevertheless, between 37.8% (Serpis) and 63.3% (Guadalquivir) of respondents expect water restrictions in the future.

The summary results from the survey show that on average 26.88% of respondents choose the status quo over the change options, with a range from 9.16% for Lesbos to 39.26% for Guadalquivir (majority of choices in the RB). The rate of protesters was low throughout the case studies: protest bidding was significant only for Lesbos (3.5%) and Guadalquivir (4.8%), much less for the other RBs.

The implicit prices from marginal willingness-to-pay (WTP) per household per year derived from the survey were:

- 135.5 EUR for water availability for secondary uses (restrictions 1 year out of ten);
- 23.54 EUR for moderate water quality;
- 57.63 EUR for good water quality;
- 83.02 EUR for very good water quality.

All values were statistically sensitive to scope. It can be concluded that willingness-to-pay was much higher for water supply safety than for environmental protection.

Household supply was very valued in Serpis (297.6 EUR) and Greece (287 EUR), less in Po (98.40 EUR) and Guadalquivir (36.40 EUR). Serpis showed the highest trshold for environmental valuation with positive WTP starting only at the good level. Over all, Lesbos depicted the highest WTP for ecological improvements, ranging up to 253EUR for a very good status, while Guadalquivir had the lowest values with only 48.40 EUR for a very good status.

The key messages from the case studies were:

- income has an impact;
- respondents who had water restrictions have a higher WTP;
- respondents who believe to face restrictions in the future have also higher WTP;
- respondents engaged in a CSO or NGO for environmental protection have a higher WTP.

The team developed five distinct policy scenarios in order to compute the total economic value or total surplus for certain attribute combinations. These show again higher benefits for those sencarios which imply an improvement of the household water supply conditions. Furthermore, sensitivity to scope can be observed regarding the improvements of the ecological status. It can be seen that benefits do not differ significantly from case to case, except for Guadalquivir, where benefits are considerably lower than the average.

The transfer errors from case study to case study were moderate for most cases, some below 1.5% (Greece to Italy and back and Serpis to Italy and back). However, very transfer errors occurred from Lesbos to Guadalquivir and from Serpis to Guadalquivir (up to 138.1%).

Key messages:

- A clear social interest in water and environment translating into WTP for reducing water scarcity for households and the environment;
- Reducing the probability of water restrictions in households is more important for the interviewees than assuring enough water for the environment (as expected);
- Allocating water to the environment for maintaining the ecological status generates significant social benefits;
- Sensitivity to scope: higher environmental flows generate higher benefits;
- The environmental values are not sensitive to scale, i.e. the RB size (larger RB do not generate higher benefits);
- Previous experience implies higher values for reducing probability of water restrictions;
- General environmental concern has an impact on the value of the environmental use of water;
- Average transfer error (all tested scenarios): 22% - reasonably low.

Discussion:

It was observed that the pictogram for water availability was the same for all levels; only the number of years was changed. Furthermore, it was mentioned that the baseline scenario in the survey did not match reality at least in the Italian case, resulting in some scepticism among interviewees as to the credibility of the survey. However, it was necessary to go along with a uniform baseline in order to facilitate benefit transfers between the different case studies. It was suggested that the artificial common baseline may have led to the very low transfer errors and that under real-world conditions; these errors would have been much higher. It was condescended that the survey was not entirely perfect; still the use of a correction factor could help. Moreover, the very low protest rates suggest a very successful survey design. Roy Brouwer pointed out that a similar study conducted in Australia yielded comparable results. One possible explanation may be that water restrictions are perceived more or less the same way in all countries, meaning that transfers work well. However, the environmental protection aspect proved more difficult to communicate. In the future, climate change may lead to a different picture, i.e. more water scarcity.

Methodologically, not all variables could be covered in the multi-variate analysis so as to avoid correlation of parameters.

2.3 Water Quality Group

Marije Schaafsma presented the results from five case studies conducted under the water quality group: Scheldt (Belgium), Odense (Denmark), Nemunas (Lithuania), Morsa (Norway) and Humber (UK). The case studies cover rivers and lakes where the main environmental problem was eutrophication.

The main objectives of the common approach were to explore:

- Sensitivity to Scope and Ordering effects;
- Benefit Transfer.

The survey took distance to substitutes and the coast into consideration.

A geographical sampling strategy was used to account for distance-decay effects in the river basins. The common valuation design applied the water quality ladder developed by Ian Bateman as well as a common (open-ended) payment card.

The sensitivity to scope was tested through ordering and retesting of choice sets. The water quality ladder employed pictures, pictograms and colour schemes according to the WFD. The baseline was set at yellow, i.e. moderate water quality and improved up to blue quality, the highest quality level.

The samples had a fairly good gender representation at around 44% female. Also, average age and sample size were fairly comparable across countries. However, income varied a lot between the case studies: Lithuania 8,000 EUR net income corrected for PPP to UK 23,000 EUR net income PPP.

The proposed model was build as a function of:

- Quality improvement;
- Quantity improvement (sensitivity to scope);
- Order of scenario presentation (ordering effect);
- Country specific characteristics (benefit transfer);
- Socio-economic characteristics;
- Distance to improved site (distance-decay);
- Distance to unimproved substitute site (distance-decay).

Distance decay and scope showed significant influence on the valuations. On average, respondents from Norway and Belgium stated higher WTP values. Lithuania had a very broad base of zero-bidders (51%) compared to the average of 18%, which lowered the average WTP for this country.

The analysis of the survey data showed sensitivity to scope but also ordering effects. Although 50% of all respondents stated the same WTP for the small and large improvement, the WTP for the large improvement is significantly higher than for the small one. When a larger change is proposed first, the valuation for the large change is slightly lower than in the reversed order. Moreover, the following smaller change will be valued much lower than the same change when presented first. It may be that people have a mental account of the amount they are willing to pay for an improvement, almost regardless of the scale, after which the subsequent offering is measured in relation to the first offer. Ordering effects implied that a bottom-up approach yielded very close WTP results for the small and large improvements, whereas in the top-down approach the range of the WTP results was much wider. For now, we can only speculate about the underlying psychological causes behind the differences in sensitivity to scope between the two approaches.

Benefit transfer was one of the core tasks of the group. Several options for transferring results were explored: mean value transfer, general function or country-specific functions. The analysis showed that the country-specific value transfer function yielded the best results with the lowest transfer errors. Still, errors for Lithuania can be as high as 670%, mostly due to differences in income. However, errors are frequently below 35%. Denmark gives average transfer errors of 36%, values for UK, Belgium and Norway are above 50%.

The group will developed a list of possible improvement: has not found a common approach to including substitutes into the analysis yet.

- Find common approach for measuring distance to substitutes;
- Causes of sensitivity to scope;
- Out-of-sample transfer errors;

- GIS value maps.

Reasons for limited transferability:
- General differences between countries;
- Income (net-gross) and PPP correction;
- Data collection method (online, face-to-face) and water bodies;
- Water quality ladder not equally applicable across countries.

Conclusions
Based on the results of this analysis, the Water Quality group finds significant distance-decay and scope-effects. The significant ordering effects show that a top down approach gives larger scope differences and more conservative WTP values for the small improvement. Transferability of the general model would be deterred; mean value transfer and value function transfer give similar transfer errors.

Discussion:
The plenary suggested that the ordering effect was conclusive. Furthermore, the debate focused on the identification of protesters, as the depicted rates were considered quite low, compared to rather high rates of zero-bidders. Lastly, the very low sensitivity to scope was mentioned.

2.4 French Groundwater Case Study

Jean-Daniel Rinaudo presented the preliminary results from the Rhine groundwater case study in France. He highlighted specific aspects of groundwater valuation. Reasons for the need for guidance on groundwater valuation are:

- the high costs of programmes of measures for groundwater aquifers;
- need for justifications for derogations;
- only relatively few existing groundwater valuation studies.

As the ecological status of groundwater is not well known among respondents, one of the main questions would be to determine the influence of the initial level of information on the observed willingness-to-pay (WTP). Furthermore, the role of substitutes in groundwater valuation should be explored. A particularity of groundwater restoration is the long cycles of ecological renewal. It would be fruitful to analyse the impact of this factor as well.

The main contributions to the AquaMoney guidelines will be:

- A case study focusing on the 3 questions above;
- A case study dealing with over-exploitation problem, as a complement to the 5 case studies on quality in the Bridge project;
- A possible link to the scarcity group?
- Link with stakeholders: CV survey may interfere with political action.

The case study is organized in 4 steps: The first step is a multi-criteria analysis of all aquifers in the river basin district, ranked using indicators describing the different services provided by the aquifers. The second step is a stakeholder consultation to select an aquifer. The next step is a social survey consisting of 72 semi-structured detailed face-to-face interviews aiming at assessing the information level on groundwater and its ecological status in the general population. The results from this third step will be direct input into the CV survey design. The fourth step is the CV survey. After an initial pre-test, a mail survey with 6000 mailings and a response rate of approximately 10% was conducted. The multivariate analysis of the survey data was not finished at the time of the Valencia meeting. A subsequent step would then be to aggregate the data in order to calculate the total economic value of the aquifer.

As a result from the second step, the Triassic sandstone aquifer was chosen for the case study. The aquifer suffers severely from over-exploitation (up to 13m lower groundwater levels over 30 years). Without severe measures, this situation will considerably worsen over the next 100 years.

Although no official policy scenario exists for the aquifer, respondents were presented the most likely measures in order to reduce abstraction in the drinking water sector: reduce conveyance losses, promote water saving practices etc.

Key results from the survey are an average WTP of 35EUR/household/year ad infinitum. Out of 560 received questionnaires, 553 answered the WTP question. A considerable share of 23.5% gave protest bids, another 9% stated true zero-bids, while another 9% could not state a specific amount. Altogether 2/3 of respondents stated a WTP of more than zero.

The social survey from step 3 revealed a considerable lack of understanding of both the functions and implications for other ecosystems among the 72 interviewees. Similarly, in the main survey, almost one in two respondents did not know of the aquifer altogether, groundwater over-exploitation or the link between drinking water and the aquifer.

The link between information and WTP could be established at a 10% confidence interval, meaning that well informed respondents had a WTP of 48 EUR, while uninformed ones valued the aquifer restoration at just 34 EUR.

One of the main lessons from the survey is that using 3D maps and graphs allows to effectively conduct a WTP survey with an acceptable rate of response for an 8 pages questionnaire.

The role of substitutes could also be assessed at a significance level of 2%: Households with drinking water supply only from the aquifer valued the restoration at 41.7 EUR, while households with other sources of drinking water valued it only at 31.7 EUR.

The inclusion of the time dimension of the restoration project proved more demanding. Although sampling was split in three zones: one with groundwater improvements from 2015 on, one with benefits from 2030 and one with benefits only from 2050 on - not even considerations regarding the respondents end of life could affect the WTP. No significant difference in WTP was found between the zone before and after 2030.

Discussion:

One of the concerns was that time discounting leads to fade out of WTP over time. Although the valuation decreases (discounting), the number of beneficiaries increases over time, as groundwater moves usually only at 25cm/year. Furthermore, uncertainty issues regarding the programmes of measures were significant in the domain of groundwater. It was suggested to include these considerations in the report. Another question was how much information respondents should be given. It was encouraged to test whether respondents would value earlier improvements more. Moreover, the link between surface water and groundwater needs to be established. The French case study will post the final survey results on their website: http://www.brgm.fr/inc/bloc/thematique/eau.jsp.

3. Key Messages for the Guidelines

3.1 Best Practice Recommendations

David Barton presented his impressions from the case studies. Particularly, he highlighted issues related to water valuation, such as:

- Return flow and re-use (conflicting rights interpretations, prone to double counting);
- Invisibility of risk (groundwater);
  risk communication and perception;
- Natural system time-lags between pressure and impact (groundwater)
  discounting; uncertainty about pressure-impact functions;
- Many water service providers and beneficiaries
  leading to high transaction costs of measures;
- Site specific and spatially varied quality & availability
  leading to avoidance behaviour
  emphasising the importance of substitutes
  key issue: variation in user suitability thresholds
  very different status quo perceptions;
- Functional interdependence of characteristics of ecological status & between sites => constraints on policy experimental design;
- differences up-stream / down-stream;

Some of these aspects have been highlighted in literature, some can be observed in the case studies. Best practice recommendations can stem from different areas of the case studies:

- design;
- sampling method and strategy;
- analysis and;
- reporting.

Design:

Problem: Water quality ladder creates a standard hierarchy of water use suitability thresholds for users with heterogenous preferences.
Recommendation: Ask respondents their use suitability thresholds explicitely and use mixed logit models with suitability threshold interaction effects that account for heterogeneity.

Problem: Lacking distance decay of WTP.
Recommendation: Estimate distance decay indirectly by identifying geographical distribution of users/residents & non-users/non-residents and their respective WTP.

Problem: Access to water quality or quantity is respondent specific if sampled over a larger geographical area.
Recommendation: Ask/determine respondents individual status quo access to quality/quantity.

Problem: Valuation surveys fix WTP in an institutional context; surveying is not neutral, e.g. may affect politicians choice of finance mechanism.
Recommendation: Use a less consequential payment vehicle - move attention to environmental improvement (Heisenberg uncertainty principle).

Problem: Ideal orthogonal experimental design of attributes (different ecological status characteristics; different water bodies) vs. realistic correlation between characteristics and locations.
Recommendation: Simulate trade-offs between realistic constraints and design efficiency and identify more representative generic study sites.

Problem: Distance decay reduces significance of an additional water body improved (scope insensitivity).
Recommendation: Choose adjacent water bodies for scope test.

Problem: Scenario pictograms and attribute wording simplify the dimensions of the value of water.

Recommendation: Complement WTP information with qualitative evaluation of scenarios from focus groups and open-ended questions.

Problem: Information bias of valuation surveys.
Recommendation: Identify a priori importance of water resource issue among other societal policy objectives; compare proportion of a priori concerned respondents with a posteriori proportion with WTP>0.

Sampling method and strategy:

Problem: Trade-off between study objectives: policy welfare analysis versus methodology testing.
Recommendation: Representative random sampling (residential) versus targeted/ quota based sampling (intercept).

Problem: Ensuring representation across water body substitutes and across river basin.
Recommendation: Sampling in rural as well as urban areas. Population weighted sampling within administrative areas that approximately cover watershed.

Problem: Timing of implementation.
Recommendation: Immediately following a use season to improve recall rates.

Problem: Ensuring representation of age, sex, income levels.
Recommendation: Quota based sampling (internet-panel or intercept).

Problem: Increase respondent convenience.
Recommendation: Internet or postal surveys.

Problem: Ensuring communication of survey information.
Recommendation: In person surveys (intercept or residential).

Problem: Minimising data recording and entry errors.
Recommendation: Computer-based in-person or internet surveys.

Analysis:

Problem: Choice of experimental design software.
Recommendation:

1. Street and Burgess website
2. SPSS
3. SAS
4. Sawtooth

Problem: Choice of software for discrete choice models.
Recommendation: Limdep, STATA, SPSS.

Problem: Multiple approaches to coding attributes levels in choice experiment (effects, dummy or continuous coding?).
Recommendation: Non-linear effects / suitability thresholds:

- Effects coding (avoid confounding status quo mean with grand mean);
- Dummy coding (easier if no status quo);
- Benefits transfer;
- Mean per unit of improvement valuation estimates.

Problem: Demonstrating validity to colleagues and demonstrating validity to policy makers.
Recommendation: Specific guidance needed on: Response rate; Protest rate; Scope sensitivity; Distance decay; Use versus non-use; Sensitivity to scale / substitutes; Lack of ordering effects; Sensitivity to time lag between payment and improvement; Interaction effects with status quo(?) and with attributes; Income effect; Importance of a priori knowledge and concern; Convergence of CE and CV estimates and with prior valuation studies.

Reporting: Filling policy makers information needs

In order to better visualise the results, maps can be used for many purposes. They can show the geographical coverage as well as the sampling intensity; they can provide a so-called heat map of the geographical distribution of WTP across the study area; they also can deliver a mean WTP map, eventually leading to simulated voting by municipality; finally and aggregated value map across case study countries, possibly in combination with European meta-analysis data.

In order to support scenario analysis, sensitivity of WTP to changes in substitute availability can be evaluated; or different levels of WTP for different sets of policy packages other than achieving good ecological status can be compared.

Moreover, WTP is not just a monetary indicator. It can also serve as a means to illustrate attitudes, such as social concern.

The WTP pre household as well as the aggregated form can support decision-making in the context of benefit-cost analysis for derogation from the WFD or as simulated voting scenarios on given policy packages.

The survey can also play a role as a basis for a communications strategy: It reveals qualitative information on protests and a priori information on the population in the sample; furthermore, it also is an indicator for social preferences and, thus, resembles and opinion poll.

The case studies also brought up a number of unanswered questions. Future research will have to be conducted in order to address these issues:

- Rights allocation: Why should households pay for restoration, while they are not the main polluters?
- Partial valuation: How important are the benefits of water users left out of the study?
- Information bias: The influence of the interviewer on the respondent: ratio of respondents with a priori concern about water and respondents with WTP>0.
- Testing content validity: How do you know that respondents understood the scenario information?
- Anchoring bias: Does the WTP estimate depend on the range of amounts offered to the respondent?
- Constrained rationality: Can households provide an informed WTP answer when they don't even know their current water bill ?
- Substitution effects: Do respondents really include the availability of substitutes into their valuations?
- Controversial measures: How accetable are the proposed scenario measures themselves ?
- Observation and uncertainty: How will the WTP results be interpreted in light of on-going policy debates in the country?
- Scenario realism versus efficient design: Is it realistic that a water body currently at blue level could ever be at red level and vice versa?
- Stated versus revealed behaviour: Will respondents actually pay what they say?
- Reliability: Are WTP estimates as reliable as engineering cost estimates?
- Representativeness: How are results represenative of the population when only a small proportion of the sample responded?
- Time stability: Do WTP results depend upon the weather, e.g. cool summer no algal bloom?

Finally, special focus was on information dissemination. Various options co-exist:

- presentation to national government officials / agencies;
- presentation to local governments;
- presentation during WFD stakeholder consultation;
- results posted on web-site;
- survey demonstration posted on web-site;
- press release to local newspapers;
- direct input for WFD derogation studies and RBM plans;
- review by expert panel.

Discussion:

It was proposed that the most pressing and difficult questions should be raised and answered at the beginning of the guidelines, thus making them more accessible and user-friendly. As a reply to the issues listed above, it was recommended to include in the survey a short briefing on the framework in which the study takes place.

Regarding the reporting issues, it was stressed that reporting had different challenges depending on the target audience selected. It was noted that the case study reports themselves were aiming at the implementing authorities in the Member States.

The question was raised if a benchmark to assess whether or not carrying out a study would be beneficial. In Italy, as WFD has not yet been implemented at all, there is no specific demand for guidance at this time. Policy maker, however, might be interested in the project results.

The coordinator recalled that there was already a lot of guidance on CV / CE published. Consequently, AquaMoney should aim at providing additional new information specifically for valuing water resources, specifically addressing policy maker. The objective is not to deliver general guidance on survey design. Key issues to be dealt with would be validity and reliability of valuation, implications of economic valuation, how economic values translate into use- and non-use values, and measurement of imprecision. When attempting benefit transfer, imprecision will increase, even more when aggregating values into a total economic value. Furthermore, when discussing reliability, other methods such as hedonic prices (NL) and travel cost method (Ian Bateman) will have to be considered as well. The maps should also reflect imprecision and indicate the order of magnitude of uncertainty. Issues that should be checked in the valuation process will be mentioned in the policy briefs and the terms of reference. Some seconded that a more general approach to the guidelines would increase attention and reception of contents.

Besides the research related topics, policy issues have also to be dealt with. On the other hand, AquaMoney will not be able to lead a discussion on economic valuation pre se, be it with policy makers or the general public. Capacity building could indeed play a role in subsequent projects.

It was emphasised that some survey types have an educational role as well. It was therefore recommended to verify whether responses were coming from all parts of the population or just from the concerned stakeholders.

In order to illustrate the differences in WFD implementation from country to country, it was proposed to include a short summary of the methods of WFD implementation each CS report.

3.2 Key messages (Water Scarcity)

Michail Skourtos presented key messages from the case studies to enter in the guidelines. In his summary, he pointed out that water scarcity was considerably downplayed in the WFD.

A broad spectrum of approaches can be identified, ranging from integrated hydro-economic modelling (DSS) to stated preferences (CE, CE & CV, CV) and pure cost approaches. It can be argued that limiting the valuation to stated preferences only will not disclose all costs and benefits. Welfare implications of resource and opportunity costs are essential, thus supporting the cost approach, notwithstanding the relevance of stated preferences for decision making.

In order to deliver meaningful results, a link has to be established between discharge and abstraction quantities on the one hand side and economic values on the other. Moreover, quality (of the ecological status) and quantity (flow level) are often interrelated. Water scarcity problems lead ultimately to water quality problems.

Among the three groups, the scarcity group stuck the most to a common valuation design. While in the quality and restoration groups, only one part of the valuation exercise was common, in the scarcity group, all parts of the questionnaire were identical. This can be an essential experience for future supra-national studies with a common design. Furthermore, the strict pursuit of a common valuation design in the water scarcity group revealed limitations to the standardisation. Yet, criteria for minimum harmonisation have to be found in order to make the case studies comparable.

One of the lessons learnt from the case studies is that respondents have a much clearer picture of water scarcity problems, compared to pure water quality issues. Thus, design credibility played an important role.

Furthermore, perception about water scarcity may depend highly on the seasonal cycle, thus making the timing of the survey more demanding. The best timing is usually July to September.

Lastly, property rights issues are obviously linked to water scarcity problems, although not covered in the case studies, just as the issue of substitutes.

Uncertainty in water scarcity is not only due to the scenario choice but also largely to the impacts of climate change.

Discussion:

Most of the issues mentioned above have (at least partially) been addressed in the case studies. The question of allocating property rights for water uses, however, was not within the scope of AquaMoney, but clearly needs to be addressed sooner or later.

Furthermore, it would be valuable to assess the implications of the degree of harmonisation within each of the three thematic groups.

Of course, it would be ideal, if the team could come up with actual values to the bio-physical parameters. Still, the limits of stated preferences methods are that they can only provide a general indication regarding the valuation. Cost-based approaches can deliver a unit cost for pollutants and abstraction.

It was stated that good ecological status can be linked quite well to water scarcity, however, the linkage has to be verified for each water body individually and can not be standardised, as there is no uniform translation of water levels to ecological status.

3.3 Key messages (Danube restoration)

Szuszanna Flachner presented the key messages from the Danube river restoration team. The main objective was to link river restoration to the ecological status of the water body and to flood risk reductions.

It was found that NUT3 data was insufficient to meet the requirements in the case studies. The distance decay was very significant. Furthermore, benefit transfer could lead to some large transfer errors depending on the involved countries, also showing the limitations of the method.

In the information gathering phase, the main issue was harmonisation of the language across all three case studies. Later on, the survey allowed a comparison between results from very different countries, also between first and second round accession countries. The need for knowledge transfer and capacity building became apparent.

There may not have been enough attention to the pre-discussions prior to the survey design, with the exception of Hungary. Furthermore, pre-testing showed considerable weaknesses, particularly in Romania and Hungary, where specific attribute should have been tested as well. Specific knowledge should be incorporated into the survey. This should be also reflected in the minimum requirements for a valid study.

Emphasis should be laid on the double dividend of the survey, as surveys serve both as a tool for public participation - as long as feedback is given and the process is reiterated, as recommended by Szuszanna - and as a tool for decision makers.

It was recognised that in order to promote economic valuation, the survey costs should be lowered by using standardised questionnaires and web-based, respectively computer-aided surveys where possible.

It was further recommended to use scientific evidence both in the questionnaire and in the attribute design. Regarding the timing, it seemed best, to conduct the survey outside of the tourist season, in order to increase the representativeness of the sample.

3.4 Key messages (Water Quality)

Marije Schaafsma presented the key messages from the case studies conducted within the water quality group. She pointed out that water resources may have very different functions and benefits and stakeholders: There are multiple activities connected to the same water body (which makes it different from other environmental goods). The ecological quality is difficult to assess, as dose-response functions are not obvious in water systems. Furthermore, there is a discrepancy between public and expert awareness on correlation of ecosystem functions. Public perception may be more relevant than accurate dose-response relationships.

The employed water quality ladder is an attempt at explaining water quality, which is difficult and site-specific. Hence, a common water quality ladder is always a compromise. The water quality ladder definines suitability thresholds for certain activities. Nevertheless, these thresholds are subjective. Eventually, the question is whether respondents will accept the scenarios or not and whether to opt for more heterogeneity in the end.

It was recommended to use a realistic payment vehicle that matches the setting (household etc). As respondents are consuming water on a daily basis, it can be argued that familiarity with water may be higher than with other goods.

The thematic group chose distance decay as a validity indicator for the study: For users, some distance decay should be observed in order to be counted as a valid response (for non-users not necessarily). Still, results may differ from case study to case study (accessibility and infrastructure) and across user groups. Also, distance decay may not occur if a person does not attach costs to travelling, but rather derives benefits from the journey itself. Furthermore, it was suggested that distance decay was lower where available substitutes exist.

Respondents living in direct proximity of a water body may be either much more informed about the actual pressures and limitations or even favour the status quo, which may also counterfeit the observed distance decay as these persons may either opt out or have considerably lower WTP. This entails also a debate on whether or not to count informed opt outs as protest bidders or as valid zero-bidders. For the later aggregation of valuations, it is crucial to determine the degree of distance decay. It was recognized that spatial sampling was essential, however very difficult to implement.

Although the case studies showed all some sensitivity to scope, the size of the effect varied widely from country to country. Ordering effects, on the other hand, are to be found in any valuation and are not specific for environmental goods. The results from the test for ordering effects yield upper and lower bounds for WTP estimates, enabling conservative top-down estimates, as suggested by the group.

These results are applicable even in presence of a high number of substitutes. It is, however, crucial to define substitutes in a concise manner. It was recommended to use both expert- and respondent-defined sets of substitutes for surveys, e.g. using the WFD classification.

Benefit transfer was implemented in a context with many substitutes and eutrophication. In order to reduce the transfer errors, it was necessary to adjust for income differences across the studies. It was also found that differences in the questionnaire, i.e. the position of the common part, affect transferability. Furthermore, sample differences and differences in income elasticity have to be taken into account. A set of transfer methods has to be considered as the best fitting transfer method may depend on the specific situation.

Discussion:

It was mentioned that the European Environmental Agency is just working on an up-scaling project. It should be discussed, how and where AquaMoney may bring in input in it, especially regarding the issue of distance decay (what to do in its absence, where to set limits for benefit transfer, etc.).

Furthermore, it was stressed that the fact that some respondents who know the resource very well and value it lower than less informed respondents should be taken very seriously and treated carefully. It was noted that in expert interviews, it could be seen that experts valued the resources lower than lay people, possibly because they have a better knowledge about the costs involved.

Beyond Case Studies

3.5 ERC and WFD

Roy Brouwer gave a presentation on the definition of Environmental and Resource Costs (ERC), their role within the WFD and more specifically, their linkage to the AquaMoney project. As the project assesses environmental benefits instead of costs, there is some need for an ex post justification.

In the WFD text, ERC are explicitly mentioned under article 9, referring to the cost recovery for water services. However, no definition of the terms is given in the original document. Both the WATECO guidance and the ECO2 guidance sheet attempt definitions of ERC. Consequently, no clear definition was at hand for AquaMoney. Thus, the project came to chose its own working definition of ERC.

It can be argued that scarcity issues can mostly be associated with resource costs, i.e. seen as opportunity costs, while quality related aspects have usually a predominantly environmental costs aspect, i.e. costs arising from pollution. Even though, in practice, it seems very unfeasible to separate the two concepts, as both environmental and resource costs will always co-exist. The methods used in AquaMoney and elsewhere; do not allow to separately report environmental costs and resource costs. In a more simplified approach, one can assume that ERC represent the environmental damage due to the fact that GES is not achieved in the water body.

As the WFD addresses the value of change in the evaluation of costs and benefits, it can be concluded, that from the Directives perspective, environmental damage is directly linked to the difference between the current ecological status and the one in 2015.

For a complete appraisal, it will be necessary to include welfare implications of the environmental damage respectively the GES as well.

As article 9 applies to water services only, it is just as important to shed light on the definition of water services. The WFD defines water services in art.2. 38. However, the interpretation may be very narrow and negates a systems approach encompassing the entire water cycle. Hence, AquaMoney proposes to consider water ecosystem services as well. Nevertheless, the project does not attempt to enter into the highly political discussions regarding the definition of water services in the WFD.

One of the main aims of the project is to deliver better, i.e. more reliable and substantiated, values than previous ecosystem assessments. The background being that water uses, including water services, entail external costs, as water is an economic good, i.e. scarce, hence has a value, but no (market) price. Thus, the task is to assess the value of water ecosystem services. In finding out how much respondent are willing to pay extra for an improved ecosystem, water can be either modelled as a source or sink. Optionally, added value approaches can complement the picture. More cost-base approaches including production and consumption functions can also be used in order to derive values for water resources.

AquaMoney focussed on the soft consumption functions, i.e. recreational use of water resources. This does not imply that production function methods were less valid.

The project also spent a lot of effort on developing an appropriate institutional setting for the payment mechanism.

Regarding possible uses of AquaMoney outcomes, expectations should not be too high: the project cannot deliver methods for finding cost-efficient programs of measures. Extending the cost-effectiveness approach is not recommended, as marginal costs usually increase steeply as the water body approaches good ecological status.

On the other hand, AquaMoney will deliver input into WFD articles 4, 9, 11 and 14.

Discussion:

AquaMoney advocates a wider interpretation of the term water services, which was supported by Anita Payne. Furthermore, she suggested to design the guidelines in an open manner, to be used at will. One of the audiences could also be the Water Directors. However, the project should explicitly state which questions were asked in the survey in order to avoid confusion and too high expectations.

The guidance will give some indication regarding key methodological issues linked to water valuation. The interpretation and valuation process itself (including survey design) should be left to the discretion of Member States.

Anita Payne further recommended not to define water services again, to focus instead on the results from the case studies.

Members from the scarcity group objected to a merger of environmental costs and resource costs. In Spain, the minister for the environment has developed a methodology to assess resource costs separately. In merging the two, relevant information might be lost. Also, merging might lead to a situation where only half of the costs are considered and the other half not or only marginally. However, in countries without scarcity issues, this merger might be appropriate.

Roy Brouwer replied that in the Netherlands, the two costs were merged. He warned to enter into a political discussion. It should be left open to Member States to decide as to whether or not to merge the two concepts. There will not be any recommendations on the matter in the guidelines. Still, examples may illustrate how to deal with the issue.

The benefit based values derived from AquaMoney can be used in both articles 4 and 9, contrary to the cost-based values. In the Netherlands, a WTP study in the context of the WFD ultimately led to an increase of the water bills. That is, valuation studies can have a real world connection, going even beyond the economic assessments required in the WFD.

3.6 Hydro-Economic Modelling

Manuel Pulido gave an presentation on the use of hydro-economic modelling for water valuation, an alternative approach for assessing ERC developed by Spain and with possible applications in other Member States.

Under scarcity, resource costs can be seen as opportunity costs. Thus, the cost of water can be broken down into the cost of provision and the opportunity cost. In countries without a water allocation plan, such as Spain, the assessment is very complex. Hence, the need for a systematic approach and definition of the value of water for the different uses. The latter constitutes one of the core concepts within integrated hydro-economic modelling: marginal resource opportunity costs (MROC), location- and time- specific. The aim being the optimal allocation of water within a system, based on:

- surface water and groundwater hydrology;
- hydraulic infrastructure;
- water rights and operating rules;
- economic value of water for different uses;
- operating costs.

The advantages of the approach:
Practical definition of resource cost;

- Way to assess scarcity rents in the spatial and temporal water use/allocation policies;
- Efficient water pricing policies (to be implemented in 2010 - WFD) should approach to full marginal social cost pricing;
- In countries with high opportunity costs due to misallocation of water resources to low-valued irrigated agriculture (bc/ inefficient system of water rights & priorities), the approach offers a great opportunity for cost recovery schemes & sending the users a signal of water scarcity and of the true economic value of water.

Discussion:

As there is a link between the ecological status and flow levels, and as flow levels link to water uses, a link can be established between water allocation and the environment. Otherwise, the GES could be set as objective and then opportunity costs could be calculated for each sector. Thus, the results from the choice experiment can be integrated into the model.

However, the system does not take spatial issues into account, thus rendering the aggregation of survey results difficult. Other questions that were raised concerned the inclusion of subsidies in the model - not included at present - and the interpretation of opportunity costs or shadow price as social costs.

Lake Albufera presentation:

Joaquin Andreu gave a presentation on the wetlands at Lake Albufera near Valencia prior to a group excursion to the site.

3.7 Up-scaling

Wetlands:

Luke Brander held two presentations. The first one gave an insight into approaches for the up-scaling of ecosystem services: an application of GIS and meta-analysis for value transfer.

The objective of the project was to value ecosystem services in European wetlands using meta-analytic value functions and GIS.

The methodology followed three steps:

1. Develop a meta-analytic value function;
2. Create database of wetland sites in Europe;
3. Estimate site-specific values.

In the case study, 264 value observations were evaluated regarding quantity, i.e. surface, changes. Quality changes were not considered.

The transfer covered all 50,000+ European wetlands. In order to achieve realistic results, GIS tools as well as attributes such as scale, substitutes, population and income effects were considered.

The resulting transfer error was 35%, i.e. close to the ones observed in previous studies. Still, common problems of values transfer and meta-analysis persist:

- Limited number of studies;
- Reliability of primary studies;
- Accounting for quantity and quality of ecosystem services.

Scenario analysis for small changes in wetland extent was performed as sensitivity analysis. Also, a comparison with value of alternative land uses was done. The final results contributed as input into The Economics of Ecosystems and Biodiversity (TEEB).

GIS and water:

Luke Brander presented the interim findings of Alfred Wagtendonks work on the GIS-based value maps.

It was shown that no readily usable data format is at hand. Thus, trade-offs will to be made. Six possible data sets all have different deficits, except the euro-regional map, which comes however at a price of 25,000€.

The discussion was on how much accuracy is actually needed in the maps in order to achieve realistic results. It was emphasised that in the end, the quality of the valuation study would have a much larger impact on the total result. Geographic imprecision is not necessarily relevant for the success of GIS, the question still remains, which scale should be chosen. It was also noted that AquaMoney will use all the information currently available, possibly even including data from the article 5 country reports under the WFD, as these should contain more accurate data on water bodies (collected at EEA).

3.8 Policy briefs

Max Gruenig presented different options for future policy brief for policy makers:

- Key messages from case studies and the added value of economic valuation;
- Criteria for valid valuation studies, including costs of a survey;
- What can be done with the results of a survey and what not?
- Checklist for Benefit Transfer;
- AquaMoney and article 9 WFD.

The ensuing discussion focussed on the potential use of the study results:

- For CBA , generally accepted, that is for Art 4 (benefits from additional measures) or;
- For cost recovery article 9.

There was some disagreement as to the applicability to article 9 as it requires that total costs be taken into consideration. Another issue was whether the difference between willingness-to-pay and willingness-to-accept-compensation should be further stressed. As AquaMoney discusses the benefits, it deals with WTP. WFD however, addressed the costs, hence WTAC should be the header. In most cases, WTP and WTAC differ. Further risks come with the fact that AquaMoney compares costs of additional measures with total benefits, as respondents may not always get a precise idea of the difference between base measures and additional measures.

Nevertheless, the project will be able to deliver an indication on a range of possible values based on other existing values. Hence it was also suggested to start the policy brief with national recommendations and summarise these into more general advice. This was supported by a high number of partners, especially since policy maker will most likely require national recommendations.

Public participation is a key element for the WFD and surveys are an essential tool for bringing participation into the Member States. Thus, when the costs of surveys are debated, the additional benefits from increased participation should also be highlighted. However, the survey can not replace other participation procedures, as they can only offer a very limited involvement and respondents have no influence on the choice of measures. In order to improve the participatory aspects, it was recommended to view the survey as a cyclical process that includes feedback options. It was pointed out that so far, public participation under the WFD was not successful and could benefit greatly from improvements.

The limited sample size reduces the participatory impact of the survey. On the other hand, the purely democratic sample selection process ensure a much better representativeness than any other participatory tool, where often only the loud are heard.

Anita Payne emphasised the socio-economic information coming with the surveys as a very valuable input for policy makers in the Member States. AquaMoney can be a key element in setting new prices for water across Europe.

Jean-Daniel Rinaudo suggested setting up a virtual CS to demonstrate the problems that can occur when setting up and conducting a survey. But this suggestion was not adopted by the team. Nevertheless, the team approves the idea that in one brief a discussion should be presented what is covered by a CV-survey and what not.
Other issues to be covered range from indication for the protest rate. Protesters may be bad for the survey, but still carry valuable political information.

The team suggested that the policy briefs should also include a short summary card for each case study, in a standard format, building upon the executive summaries.

3.9 Final Conference 2009

The original plan was to host the conference in Berlin in March 2009. However, as the project is delayed (earliest date for the guidelines are May or June), this will have to be amended. Roy Brouwer proposed to link the AquaMoney conference to the EAERE conference in Amsterdam, end of June 2009, a date where most likely the main outputs will be available. Another advantage would be the option to attend the EAERE conference itself.

By linking to the larger conference, cost savings could be realised and possibly, more audience would come. The AquaMoney conference would be held as a free pre-conference event. Roy Brouwer was already approached to organise such an event, making it very likely to be possible.

The session could deliver the guidelines and also look at other aspects of water economics, be broader than merely being an AquaMoney conference. A half-day closed team meeting could precede the event.

Still, this plan can only work, if the extension is granted. Otherwise, the conference will have to be held within the original project time scale.

It was agreed that the target audience should be the implementing authorities in the Member States, not necessarily the Commission. Furthermore, academia would also be invited.

4. Next Steps

The next steps for the case study partners are to deliver the final case study reports to the coordinator by November 15. There are two deliverables which can come in one single: case study report and best practice recommendations can probably come together, pending approval by Mr. Balabanis.

The authors to the guidelines will send their input by the end of November.

Before Christmas 2008, a draft policy brief and the revised guidelines will be circulated for comments by partners. One remaining question is still how to present the final version of the guidelines - possibly as a book.

The guidelines will then be finalised in the course of January and February 2009, based on input from the team. An external expert panel will review the guidelines in February and March. April and May will be available for a final draft version of the guidelines. Finally, in June, a final revised guideline will be presented to DG RTD and the final conference will be held.

Without the extension, the last date to use funds is the 5.4.2009. The extension would be 6 months.

Annex

Program 5th AquaMoney Meeting Valencia 15 & 16 October 2008

Wednesday 15 October

09.30 Welcome (Joaquin)
09.45 Main objectives & expected outcomes 5th meeting & brief overview progress since last meeting (Roy)

Plenary presentation final case study results and discussion best practice recommendations
10.00 Case study results joint valuation design Ecological Restoration Danube (Markus)
10.45 Coffee break
11.00 Case study results joint valuation design Water Scarcity South Europe (Julia)
11.45 Case study results joint valuation design Water Quality (Marije)
12.30 French case study (Jean Daniel)

13.00 Lunch

Planning finalization case study reports 3 groups (Water Quality, Water Scarcity, Ecological Restoration)
14.00 Split-up in 3 groups
Plan and planning finalization guidelines
15.30 Lessons learned and best practice recommendations from the case studies (David)
16.00 Environmental and resource costs revisited (Roy)
16.30 Coffee break
17.00 The role of hydro-economic modeling of environmental and resource costs (Manuel)
17.30 End day 1
18.00 Organized tour around Valencia and Lake Albufera
21.00 Dinner

Thursday 16 October

Plan and planning finalization guidelines continued
09.00 Good ecological status & water quality ladders (Ingo)
09.30 Distance-decay and substitution (Marije)
10.00 Scale and aggregation (Berit)
10.30 Benefits Transfer (Stale)
11.00 Coffee break
11.30 GIS based value map (Luke)
12.00 Planning finalization guidelines, Terms of Reference & role External Expert Panel

13.00 Lunch

Communication, dissemination and remaining issues
14.00 Communication & dissemination strategy, role Advisory Board (Ingo/Max)
14.30 Planning final AquaMoney conference (Ingo/Roy)
15.00 Administrative & other remaining issues (Roy)
15.30 End day 2

List of participants

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