

# Report of the AquaMoney Kick-off Meeting

4 & 5 April 2006, IVM, Amsterdam

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## Summary main conclusions and agreements

- AquaMoney aims to provide one authoritative guideline for the assessment of environmental and resource costs and benefits, providing a set of **practical, readily applicable recommendations** for the valuation of especially the benefits of the implementation of the WFD. The guideline is targeted at economics experts and practitioners and could include something like a Burden of Proof list, i.e. a list of good practice criteria that each study has to meet to facilitate an external validity & reliability check.
- Based on this guideline, Terms of Reference for commissioning good practice valuation research work will be produced for the second target group, namely policy advisors for commissioning valuation research.
- A simple policy summary will be written for the third target group - policy makers - in the form of a policy brief.
- The concept of environmental and resource costs will be revisited and if necessary redefined in a theoretically sound way without compromising their practical and policy relevant assessment. It was concluded that existing definitions for environmental and resource costs separately miss a sound theoretical basis, are not clear-cut nor mutually exclusive and may therefore give rise to confusion and misunderstanding. Their possible redefinition should provide sufficient political flexibility without compromising underlying theoretical principles.
- The emphasis of the research work in AquaMoney will be on the assessment of the economic value of reaching good ecological status and how to use this assessment in practical decision-making related to article 4 and 9 in the WFD. In principle, this economic value can be measured through cost and benefit based approaches. Where possible, both approaches will be followed and their results compared in the practical case studies. Based on the preliminary case study fact sheets completed by the AquaMoney partners before the kick-off meeting, most case studies will focus on the assessment of the benefits associated with reaching good ecological status using benefit based approaches, but not exclusively. In view of the fact that most methodological issues and foreseen policy demand relate to procedures for the assessment of the benefits associated with the implementation of the WFD, i.e. reaching good ecological status, most emphasis in AquaMoney will be on further methodological development of the benefit based approaches, and especially the practical viability of benefits transfer, as outlined in the original Description of Work.
- AquaMoney will produce a list of the environmental goods and services provided by the implementation of the WFD, which are amenable to robust economic valuation. Those goods and services that are considered as important, but escape an economic valuation, will be named and listed.
- The AquaMoney case studies will be carried out in order to test
  1. the key methodological issues in water valuation, for which to date no practical guidelines exist;
  2. the transferability of these economic values across time, place, water bodies and basins, and political and societal contexts, and assess the errors associated with benefits transfer as an alternative valuation method.
  3. based on (2), to test the feasibility of generating a European water values map for selected water body types.
- Conducting original valuation work in the case studies, be it based on cost or benefit based approaches, is instrumental to reaching these objectives.
- A draft version of the AquaMoney guideline will be made available to all project partners in month 6 instead of month 12 as a basis for the case study blue prints.
- The case study blue print will be ready in month 10 instead of month 15. The case study blue prints are furthermore the responsibility of the case study leaders, who will use the draft guidelines as the basis for setting up their case study, paying special attention to the use of common valuation formats in the different case studies in order to facilitate cross-study comparisons and test transferability of economic values across basins.
- In order to increase information and knowledge levels across AquaMoney partners, the possibilities of internal teaching material will be investigated in the first project months.
- The preliminary date for the next plenary meeting is 26-28 March 2007 in Berlin. Most important objective of the meeting is to streamline and fine-tune the set-up of the different case studies based on the draft guidelines and the case study blue prints. The project Advisory Board will also participate during one day at this meeting.





## 1. Introduction

This document summarises the main results of the kick-off meeting for the AquaMoney project, which took place at the Institute for Environmental Studies (IVM), Vrije Universiteit in Amsterdam on 4-5 April 2006. The project AquaMoney (SPPI-022723) is a Specific Targeted Research Project, supported by the European Commission, DG Research, under the 6<sup>th</sup> Framework Programme. The kick-off meeting marked the first activity of this project, which started officially on April 1<sup>st</sup> 2006. Further background information about the project and the foreseen activities can be found at the project website [www.aquamoney.org](http://www.aquamoney.org) and from the Description of Work.

The main objective of the kick-off meeting was for the 16 international partners to get to know each other, clarify and reach consensus about the project's main objectives and set-up, and arrive at a more detailed work plan for the first project year. The kick-off meeting programme and the list of participants are reproduced in the Annex to this report. The presentations at the kick-off meeting are available from the project website. In preparation of the kick-off meeting, the participants were sent (1) a draft report with an overview of existing guidelines and manuals for the economic valuation of the environment in general and water more specifically, and (2) a draft proposal for the set-up of the AquaMoney guidelines. In return, the participants were asked to send a standard format fact sheet of their case study, which was bundled before the kick-off meeting and distributed at the start of the meeting.

Berlin / Amsterdam, May 2006



## 2. AquaMoney: main objective and expectations

### 2.1 Opening: Prof. Marjan Hofkes, IVM

The AquaMoney kick-off meeting was opened with a welcoming address by Prof. Marjan Hofkes, Deputy Director of IVM and Head of the Department of Economics and Technology at IVM. Prof. Hofkes recalled the aims and the policy context of the AquaMoney project. This was followed by an introduction of all partners.

### 2.2 Project presentation: Roy Brouwer, IVM

In his introduction, Roy Brouwer recalled the objectives of the AquaMoney project and formulated the expectations of the kick-off meeting.

The overall objective of the AquaMoney project, as stated in the description of work, is the **development and testing of practical guidelines for the assessment of environmental and resource costs and benefits in the WFD**. Roy Brouwer further recalled the structure of the different work packages and the different bodies in AquaMoney:

- the **Project Team**, comprising all project partners in the AquaMoney consortium;
- the **Scientific Council**, comprising all work package leaders and the chair of the Advisory Committee; and
- the **Advisory Committee**, comprising 24 selected stakeholders representing river basin authorities, international river basin commissions, national and local governments as well as NGOs.

Roy Brouwer pointed out the importance of bridging knowledge and information supply related to the assessment of environmental and resource costs and benefits in the WFD and policy maker demand for the work to be carried out in AquaMoney, and how this will feed into the development of guidelines. He further recalled the basic structure of AquaMoney in five different work packages (see below) and especially their interrelationships.

WP 1	Elicit and integrate policy maker demand, take stock of current thinking on ERCB
WP 2	Take stock of existing water valuation studies, meta analysis
WP 3	Development of practical guidelines for the valuation of ERCB, test feasibility of a standardised water value map, ensure coherence of case study results through blueprint
WP 4	Testing guidelines in case studies
WP 5	Management of knowledge and communication

In short, the project aims to

- **produce draft guidelines and set up the case studies** in the first project year,
- followed in the second year by **tests of these draft guidelines** in eleven practical pilot river basin **case studies**, and
- finally in the third year a **comparison of results across the case studies** and the further **refinement of the guidelines**.

### 2.3 Expectations of the European Commission: Zissimos Vergos, CEC

In his presentation, Zissimos Vergos of the European Commission, Directorate General for Research, outlined the expectations of the European Commission of the AquaMoney project.

To ensure a successful implementation of the project, he recommended a fundamental agreement on the **implementation philosophy** - achieve excellence through competition and / or through collaboration. He warned of the **risk of introspectiveness** - work should not only be driven by the specific research needs and interests of individual partners, but should seek integration with other consortium partners and bear in mind the demands and needs of policy makers. He underlined the need to identify **knowledge gaps** and address these in the work - encouraging capacity building measures among the partners, to bring all to a comparable knowledge level. Mr. Vergos described the period after the kick-off as a crucial period for **fine-tuning** the work, and for communicating among WPs. Problems that are not addressed in the beginning may jeopardise the functioning and ultimately the success of the project later on.

Mr. Vergos warned that activities to describe the **state of the art** are necessary, but should not take up a disproportionate amount of time and work. Reviewing what is around should not be a priority, since it is assumed that most parties should be knowledgeable about this already. He mentioned that deliverables submitted to DG Research by the project team should have been subject to peer review process within the consortium, and will thus be considered as solid, consolidated work by the Commission.

Mr. Vergos recalled that AquaMoney should aim to provide THE guideline, not yet another guideline that finds that further research is needed, and needs to be further defined and developed through subsequent projects. The expectation is that AquaMoney comes up with a **practical, readily applicable set of recommendations**. The project should improve and apply currently available valuation methodologies, and use the experiences as an input to the guidelines.

Mr Vergos suggested **education and outreach activities** - e.g. to explain to policy makers, stakeholders and the general public to explain the role of economic valuation and how it works. AquaMoney is an excellent opportunity to build up a network within (international) river basins, to support a lasting cooperation. He explicitly encouraged dissemination activities within and beyond Europe, and to this end suggested to involve **experts from outside Europe** in the project meetings and conferences. In the end, AquaMoney could be one of the starting points for a common international framework in River Basin Management, including expert and stakeholder participation at River Basin level.

Mr Vergos asked project partners to **make reference to the source of funding** throughout their activities, such as conference papers, presentations and publication, acknowledging the support by DG Research under the 6th Framework Programme. He mentioned the availability of **additional funding sources**, e.g. standing committees of the European Parliament, which provide funding for training of EP Members.

## 2.4 Discussion issues

- The need for a common project layout was noted, for reports as well as for presentations. It was suggested to include in each document a table with the document history.
- There is a need for a common standard explanation of AquaMoney in emails to external parties, as well as a policy brief with standard texts to explain what AquaMoney is all about.
- The need for feedback procedures for AquaMoney products. There should be an internal feedback round, including deadlines, etc.
- Progress of the project needs to be documented in **annual project reports**. Project partners should bear this in mind (i.e., contributions may be necessary where partners give a brief account of their activities related to the project and the progress in their work).
- Partners are asked to keep track of their **independent dissemination activities** - such as publications and presentations of AquaMoney results - and report these to the WP 5 leader (Ecologic) in view of the fact that the latter have to produce a dissemination report at the end of the project period.
- It was pointed out that, except for the coordinator (IVM), **only ONE audit has to be carried out per partner** over the entire duration of the project, to be completed at the end of the project. However, an annual cost statement will need to be filled in. IVM will provide further information about the required format. It was noted that the Commission also has the right to commission additional audits from each partner if necessary.
- An **internal interim mid-term review** will be arranged in month 18 of the project, to discuss project progress. Zissimos Vergos will supply the exact criteria for this review. In general, the interim mid-term review should discuss the experience so far, possible shortcomings, risks and delays, and how these may effect further progress in the project.
- AquaMoney has **officially started on April 1<sup>st</sup>, 2006**. It is not possible to do any financial declaration before this date in the cost sheets.

### 3. The AquaMoney Work Packages in more Detail

#### 3.1 WP 1 Identification policy maker demand: Edi Interwies, Ecologic

WP 1 will look at the current role and definition of environmental and resource costs and benefits in the EU Member States, in order to

- summarise and clarify the current thinking on environmental and resource costs in the EU;
- identify and integrate policy maker demand for economic information related to WFD implementation;
- map out further needs for methodological development and data.

Thus, the aim of this exercise is to clarify the questions that the AquaMoney project is supposed to answer - i.e. to ensure that the guidelines and other outputs are in line with policy makers' expectations and demands related to the calculation of ERBC (what scale, used for which kinds of decisions, etc.).

The current thinking on environmental and resource costs and future prospects will be elicited with the help of a questionnaire (to policy makers), which will need to be developed and filled in with support from the AquaMoney consortium partners. It is important to assess the current thinking at different policy levels, on different decision-making criteria, at the broad national scale. The workload input from partners for assistance in filling in the questionnaire, and for a quick scan of the Article 5 report, should correspond to about one person-month.

It was pointed out that, in many instances, contact to policy makers has already been established at the proposal writing stage. Where this is not the case, and where finding the appropriate person proves difficult, the Advisory Committee may be helpful in establishing contact and ensuring follow-up.

In principle, the questionnaire can be supported with a web-based version of the questionnaire to allow quicker access. However, it was questioned whether an "electronic-only" approach would be sufficient to achieve involvement, and noted that direct personal face-to-face follow-up may be necessary in many cases.

For the case studies, it was suggested that the policy makers that will be involved should already now be identified - the questionnaire on current thinking on ERBC will then provide a first opportunity to involve them in the project. In some case studies, such contacts have already been established. If there are problems in identifying or approaching relevant people, the Advisory Committee may be of help.

#### 3.2 WP 1.1 Definition of ERCB: Roy Brouwer, IVM

Roy Brouwer introduced the subject with a summary of the previous work conducted at the European level and a brief summary of the main discussions around the concept (esp. within the CIS working groups WATECO and DG Eco 2). He also addressed the role of ERCB in WFD Article 9 (water pricing, cost recovery) and Article 4 (exemptions based on disproportionate cost). He described the work in DG Eco 2 as finding a delicate balance between academic rigour and demands of policy makers, but where policy demand seemed to be an overriding factor. An important question is to what extent AquaMoney wants to compromise on academically sound theoretical principles in order to accommodate policy maker demands. Roy Brouwer noted that there is no clear, straightforward definition of environmental and resource costs as a joint concept anywhere in the existing literature, let alone related to water.

In approaching a common definition of ERCB, he set out from the basic theoretical concepts for environmental costs and resource costs, respectively:

- Environmental costs: usually defined as the degradation, but also depletion of ecosystems resulting in environmental damage with human welfare implications
- Resource costs: opportunity costs usually associated with the depletion of non-renewable stocks (Hotline -scarcity type consideration).

It was pointed out that especially the concept of resource costs has been much contested in the CIS working groups, with Wateco following the above route by defining resource costs based on scarcity (overabstraction), whereas Eco 2 defined them as a consequence of misallocation (inefficient water use). These two definitions are not necessarily mutually exclusive and were even contested at the kick-off meeting.

Roy Brouwer suggested the following working definition for AquaMoney:

- Environmental cost: economic value of the physical environmental damage associated with current or past water use (abstraction or pollution)
- Environmental damage: gap between current status and good ecological status

It was argued that scarcity rents (e.g. in the case of overexploiting scarce and finite groundwater resources), as well as the costs of inefficient water use (opportunity cost) are implicitly also included in the concept of environmental costs; the rationale being that in case of multiple water uses, there will always be an opportunity cost. Roy Brouwer therefore argued that the concept of opportunity cost - as introduced in Wateco and ECO2 - is therefore not the distinguishing feature between environmental and resource costs. Some participants argued strongly that this distinction based on opportunity costs is nevertheless very important and highly policy relevant in their specific case study context of water shortage and misallocation of water across multiple stakeholders. Merging the two concepts indiscriminately would be a lost opportunity to address the issue of opportunity costs in cases where water misallocation is a serious problem.

As for the scarcity rent, it was pointed out that scarcity does not hinge only on the fact that water resources are non-renewable - rents can also be calculated for renewable resources. It is also not easy to account for resource costs as scarcity rents since there are only very little data and empirical studies available.

It was furthermore pointed out in the discussion that calculating the value of scarcity rents is usually relevant in order to find the most efficient, optimal allocation of water resources, but may also provide important information for cost recovery of water services. An open question is whether finding an optimal allocation of water is the main purpose underlying the assessment of resource costs. Moreover, some argued that this is not always the main concern for decision makers - in the real world, decisions are based on a given allocation that is usually inefficient (often very much so). An optimal distribution is often more a theoretical concern. Consequently, some argued that ERCB should rather be interpreted as a common catchall category for **all relevant other costs**. The politically sensitive issues are rather:

- Disproportionate costs - how to define and calculate, and special guidance is needed for the assessment of non-use values;
- Valuing ecosystem services - how to avoid double counting because of interdependence of ecosystems and services at different levels;
- Equity and Distribution of costs and benefits - e.g. balance of costs across different stakeholders.

The proposal was to focus on estimating **the economic value of reaching GES**, and on how to use these calculations in decisions related to Articles 4 and 9 (exemptions based on disproportionate cost, and cost recovery). The distinction between environmental and resource costs remains unclear and AquaMoney has to reconsider whether the distinction makes any sense at all. The terms may in fact refer to one and the same thing in many instances and the debate around their distinction may merely be an artefact. Roy Brouwer's main objection against the use of the term resource cost in terms of opportunity or misallocation cost is that it can then refer to anything, not only natural resources, but any possible human water use, including the economic value of golf courses. He questions whether this really is the most appropriate use of the term and whether an assessment of the optimal allocation of water resources, assessing all opportunity costs of all possible uses is or should be the main objective of the assessment of environmental and resource costs in AquaMoney.

It was underlined that the calculations would need to consider the issue of scale (at what spatial level are the issues of cost recovery and disproportionate costs decided, what spatial resolution is therefore necessary for the ERCB calculation); and what effort is invested in the analysis (methods should be understandable for non-economists, and deliver quick results at reasonable cost).

As a result of the discussion, Roy Brouwer and Kerry Turner agreed they would attempt to come up with a proposal ERCB definition within 4 - 6 weeks. This would also be disseminated to the Advisory Committee, along with other results from WP 1, such as the draft questionnaire template.

It was pointed out by Zissimos Vergos that AquaMoney can use its own definition of ERCB, as long as this definition can be underpinned by science and would serve the final purposes of the project. The used definition should be clarified in the guidelines.

### 3.3 WP 3 Development of Guidelines: Roy Brouwer, IVM

The draft overview of existing guidelines produced by IVM and sent to all participants before the kick-off meeting was not discussed in detail for lack of time - comments on the document are welcome by email.

The ensuing discussion focused on the aims and expectations of the guidelines that will be developed in AquaMoney WP 2. In short, the main aim of these guidelines is to bring together information supply and demand. It was discussed whether it would make sense to differentiate the guidelines and distinguish between three different user groups: local practitioners and experts that actually conduct valuation studies, policy advisors that distil information for decision makers, and policy makers that use the information to inform their decisions.

Three different target groups:	And their respective objectives:
Local practitioners and experts	find out how to conduct and implement a valuation study, focusing on key surface water issues
Policy advisors	supervision, Terms of Reference, (interpretation and) translation results of a valuation study
Policy & decision makers, public stakeholders	use of results in policy and decision-making, general awareness on WFD and ERCB valuation.

In the discussion, it was pointed out that the advice to local practitioners on how to conduct and implement a valuation study should not be about how to apply a particular valuation methodology, as abundant literature exists on that already. Guidelines should rather address the specific challenges of valuing aquatic resources, and about the challenges of transferring values. On several occasions during the meeting, it was mentioned that at this moment there is a lack of original valuation studies of European surface waters that include the key methodological issues identified in the original AquaMoney project proposal. Such studies are needed to compare case study results with existing studies, and to be able to assess the transfer error and the reliability and validity of benefit transfer (BT). The guidelines should make explicit what the limitations of benefit transfer are, when and where BT can and cannot be used, and how BT results should be interpreted.

It was questioned whether guidance for policy and decision makers is really necessary, since they will receive already-digested and prepared information. Instead, it was suggested to distinguish the guidelines between the process of valuation (as done by local practitioners and experts) and the outputs (to be used by policy advisors as well as policy makers). The guidelines for practitioners and experts could include, for example, something like the NOAA Burden of Proof list published for the application of valid and reliable CV studies. For policy advisors, one message could be how to deal with benefits transfer - there tends to be exaggerated interest in simply getting a "magical" number, not worrying where the information came from. Guidance should therefore point out the risks and limitations of benefits transfer.

It was also suggested to include the general public as a target group, however it was pointed out that in some countries the interested general public, i.e. stakeholder groups, will normally be part of the decision makers.

In the discussion, it was suggested to focus in particular on the goods and **services provided by the implementation of the WFD**, their values and their valuation - this would connect the analysis to the context of disproportionate costs. The link between aquatic ecosystem services as defined in the scientific literature and water services as defined in the WFD needs further clarification.

To further develop the valuation guidelines, the following key issues were identified:

- Is it possible to come up with a list of standard goods and services delivered by the WFD, which are amenable to robust economic valuation? How would goods and services that cannot be valued in economic terms be accounted for? Is there a possibility to tell the importance of invaluable goods and services compared to those valuable in economic terms?
- Is it possible and if so, how to link the economic indicators to results of the pressures & impacts analysis (Article 5 reports) and develop a list of standard damage categories?
- Are standard economic transfer values feasible for different water uses and services and/or aquatic ecosystem damage (ExternW)?
- Do different water types (heavily modified, natural, artificial water bodies) result in different economic values?
- How to deal with spatial dependency (upstream-downstream) and aggregation procedures (from water body to water basin level)?
- The river basin approach of the WFD presents particular challenge for valuation - eventually values should be derived for the entire basin, including transboundary basins. Need to investigate issue of transferability of values within the basin, accounting for differences in socioeconomic conditions.
- Ways of dealing with risk and uncertainty in natural conditions still need to be assessed properly.

It was agreed to present the refined guidelines (incorporating experiences from the case studies) for external review in month 24.

### 3.4 WP 3 GIS-based applications of ERCB: Nancy Omzigt, IVM

Nancy Omzigt of IVM gave a presentation to introduce the possibilities of GIS-based applications to organise and present information in a geographical system. She explained that while lots of datasets and maps are available from different institutions throughout Europe, this information may be fragmented, and information availability differs for the European countries. GIS-based maps were presented as a method to manage and organise information. This may be especially helpful for benefit transfer, in order to judge the similarity of two sites, which is an essential precondition to enable the transfer of data from one location to another. Another link is that stated preference surveys would often employ maps as visual aids, which show the expected impact of policy measures. It was also mentioned that using GIS for economic valuation can improve the cohesion between economic data and physical data, which can improve communication of economic results to hydrologists, etc, that design and implement final water management measures in the field.

In the ensuing discussion, the question was raised whether it would be possible to come up with one valuation function that could be transferred to all other locations in Europe. In this context, the caveat was raised not to get carried away with the options for presenting information, when it is not clear if there will be sufficient information that can be presented in the first place. First, there is the question whether it will be possible to come up with an economic model / valuation function for the transfer of values, accounting for socio-economic parameters (income etc.) as well as river basin characteristics. However, Nancy pointed out that maps can also include data on uncertainty. Second, the socio-economic data and river basin characteristics that enter the valuation function may not be readily available and freely accessible. Indeed, river basin authorities have much of the information, but are hesitant to give out this information. One option might be to use actual data for the case studies, but to provide only the metadata for the European-wide analysis.

Some agreement or definition needs to be developed to state what we define as a standard value map, and what data and parameters are needed to develop such a map. In any case, it was agreed that the case study status report, and ensuing documents on case studies, should include all georeferenced data that is available and make (expected) problems regarding data collection and presentation explicit.

### 3.5 WP 5 Project website & dissemination: Benjamin Gorlach, Ecologic

In his presentation, Benjamin Gorlach presented a first sketch of the website and its functionalities. The domain [www.aquamoney.org](http://www.aquamoney.org) was registered, the website should be operational by the end of April. If possible, selected items, such as a download section in the Members Area, will be available beforehand, in order to make the presentations of the kick-off-meeting available.

Following the presentation, different options were discussed for the website:

- It was agreed that the website should provide a tool to exchange information and documents within the AquaMoney consortium (through a password-protected Members Area). Access will only be given to consortium members (i.e. not to members of the Advisory Committee or other external parties). This area will feature a platform to exchange documents, as well as a forum for discussion of common questions.
- It was suggested that the website should have a regularly updated section, providing e.g. information on upcoming relevant conferences or new policy developments, to give it a fresh and well-maintained look.
- The background section will contain an annotated link list, providing references to key documents (Wateco, DG Eco 2); institutions, groups and processes (CIS), other relevant research processes and national-level initiatives. Suggestions on what should be included are welcome.
- It was agreed that the website (through the Members Area) could also be used to make available logos, formats, presentation masters, style guides etc.

It was also suggested to provide different pieces of information / presentations through the website:

- General information about economic valuation on the website
- General information about the economic analysis in the WFD
- General power-point presentation / information sheet of what AquaMoney is all about (this will be provided as one of the first outputs of the project).

The discussion also addressed other dissemination activities, such as presentations at conferences and workshops, publications etc. Many of these activities will be done autonomously by project partners (i.e. publication of research results in academic journals, possibly as a joint special edition at some stage). To keep track of such activities, and to

report back to the Commission, it is very much appreciated if consortium members inform the WP 5 leader (Ecologic) of any activities where AquaMoney itself or results of AquaMoney have been publicised.

## 4. Presentations of the AquaMoney Case Studies

The following summary presents selected key characteristics of the case studies presented at the AquaMoney kick-off meeting, such as the main water uses and pressures in the case study areas and the link of the case study to the WFD implementation. For more detail, see the case study fact sheets distributed at the meeting, and the case study presentations on the AquaMoney website.

- Julio Berbel, University of Cordoba: **Guadalquivir (Southern Spain)**. Conflicts between different water uses (agricultural, urban and tourist), upstream-downstream btw. olive oil and rice production. Main pressures for surface waters are specific and diffuse pollution, flow regulation. For groundwaters, main pressure is diffuse pollution followed by abstraction. Productivity of water use per m<sup>3</sup> is about 1 Euro for agriculture, about 300 Euro per m<sup>3</sup> for tourism, yet 86% of water consumption is in agriculture, only 1% in tourism.
- Leo de Nocker, VITO: **Scheldt (Belgium)**. Intensely used basin: 12.8 m inhabitants, large industrial centers, tourism along the coast, intensive agriculture. Low rate of connection to waste water systems. Consequently loss of many river functions such as bathing and angling, amenity. Unique ecosystems in the estuary, flood control issues in the estuary as a main challenge. Costs and benefits data is available, e.g. from pilot river basin activities. Open topics are to assess the goods and services of watersystem, costs of measures etc.
- Zsuzanna Flachner, University of Budapest: **Danube (Hungarian part)**. Main pressures are variable and uncertain precipitation, conversion of wetlands into arable land, untreated sewage discharge etc. Very different land uses and very different intensity of land use: from sustainably managed mountain forests to intensive farming and heavy industry. Impacts include eutrophication, hydrological changes, etc. Current dispute about shipping on the Danube: economic rationality questionable, environmental impacts negative. Monetary valuation so far only in Austria (Danube floodplains east of Vienna). For case study, focus will be on three countries - Austria, Hungary and Romania - and on four pilot areas (Marchfeld / A; Altaler / HUN; Nijalov and Bkaila / RO). Could be interesting to look at the connection between WFD implementation and nature conservation activities (N2K, Ramsar etc.)
- Marije Schaafsma, IVM / JD Rinaudo, BRGM: **Rhine (Dutch and French parts)**. In NL, comprises the largest part of the country. Main water use is water pumping for drainage and water level management. Main land uses are agricultural and urban. In the French part, difference between the intensively used Rhine river valley and the more remote, less populated Vosges / Lorraine regions. All pressures present in the area (industry, urban areas, mining, shipping etc.). Pesticides, morphology and organic pollutants as the main pressures. Consequently, only 18% of water bodies expected to have good status, about half of water bodies at risk. Economic studies mainly on valuation of groundwater in the Alsace region (BRGM work). Focus could be on CBA for derogations, rather than cost recovery proper.
- Kerry Turner, CSERGE: **Humber catchment (UK)**. 14 million people, 20% of the land area of the UK. Heavy industrial contamination (mining, metal smelting etc.) in the south of the catchment, extensive rural uses in the North of the catchment. Historical contamination still stored in the sediment (hotspots). Situation problematic, but improving with regard to diffuse pollution. Different models existing (land use, hydrology, pollution transfer and socio-economic impact models): task is to connect them.
- Davide Viaggi, DEIAGRA: **Po basin, Northern Italy**. Covers 25% of Italy, 16 million people, drawing water from the Alps and from the Apennines. Water-rich in the Northern Po basin, water-scarce in the Southern part. About 1/3 of the pollution from agriculture, leading to eutrophication, 1/2 of pollution from industry. Agriculture as the largest water consumer (about 1/2 of water consumption). Services by water include drinking water, irrigation, recreation, process water and hydroelectricity. WFD objective is to calculate ERCB of reaching GES, as well as underpin possible derogation according to Article 4.
- Daiva Semenienė, **Nemunas River basin, Lithuania**. Covering 3/4 of the surface area of Lithuania, and more than 80% of the population. Energy sectors as the main water use, dominating others. Water uses apart from energy include households, fisheries, and agriculture. Issues include spatial interaction between upstream and downstream areas, also between hydropower and other water uses. WFD linkage: currently drinking water charges and pollution charges exist, which supposedly reflect scarcity of resources and damage from pollution, but not underpinned with economic valuation: valuation could shed light on the economic rationale for the charges. Also could deliver economic justification for possible derogations (which may become necessary along the way).

- Manuel Pulido, Technical University of Valencia: **Jucar River Basin, Spain**. Irregular precipitation pattern, fragile balance between water supply and demand. 4.4 m inhabitants as well as 1.4 m tourists per year. Pressures from agriculture (irrigation and diffuse pollution), as well as point source pollution in the urban areas (households, industry), quantitative pressures (abstraction) and morphological pressures (flow regulation, dams). One third of rivers and lakes at high risk of failing to reach GES. Suggested to approach ERCB calculation through integrated simulation model, depicting different demands and supply factors and their effect on water quality and quantity, evolution under different scenarios. Combined with contingent valuation at the Serpis river.
- David N. Barton, NIVA: **Morsa Catchment, SE Norway**. Small catchment at 700 km<sup>2</sup>, pilot basin with some economic analysis already in place. Small population (30,000), provides drinking water and recreational services also beyond the catchment. Nutrient load is receding, yet eutrophication is still problematic and apparently increasing. Spatial use of the water bodies in the catchment highly uneven, in fact, for large water bodies it may even be the case that different parts of the same water body are used much differently. Problem of divergence between Norwegian suitability criteria for different water uses and good ecological status criteria. Suggested to look at value of information analysis, develop guidelines in such a way that they also appeal to valuation sceptics.
- Alex Dubgaard, RVAU / NERI: **Odense Basin, Central Denmark**. Pilot basin, considerable work has been done already including CEA of measures. Located in the centre of Denmark on the island of Funen, 1,050 km<sup>2</sup>, 250,000 inhabitants with more than 2/3 agricultural uses, high livestock density. 25 out of 28 water courses at risk of not reaching GES (mostly morphology), same for 10 out of 12 lakes (mostly nutrients), and one out of five groundwater bodies (due to pesticides). Scarcity is not a major concern, rather quality issues. Most important goods provided are drinking and irrigation water; services are outdoor recreation and biodiversity including non-use values. Some existing literature on valuation of surface, groundwater quality and wetlands.

In the discussion of the case studies, it was suggested to link up each case study with a clear WFD reference (policy criteria), i.e. to describe the contribution of each case study to cost recovery and incentive pricing, the decision on exemptions on the grounds of disproportionate costs, or to the selection of cost-effective measures.

It was underlined that the case studies should, above all, serve to test the guidelines, but as part of that also test the validity and reliability of benefit transfer.

Some interim activities in the run-up to the case study work were discussed, in order to keep the momentum and use the time. It was suggested to start building contacts with local policy people, to learn about their expectations not only as an input for WP 1, but also to guide the local case study work. It was also suggested (and agreed) to shift forward the blueprint for the case studies from month 15 to month 10, in order to get an early start for the case studies, and to shift the responsibility for the blueprint to the case study leaders.

It was discussed to make an overview of the case studies in order to facilitate cooperation among studies with similar characteristics and to ensure comparability. The need for a common valuation scenario and similar questions in the valuation surveys was emphasized by several participants in order to facilitate cross-study comparisons and test for the transferability of the estimated benefits.

The difference between the case study status report and the blue print was explained. The former builds upon the current fact sheets and gives a slightly more detailed description of the case study area, main water quality problems, policy issues, and lists the environmental goods and services as a result of the WFD. Data availability will be reported in terms of meta-data. The case study blue print describes in full detail how the case study valuation study will be set up and carried out.

## 5. The Road Ahead: Milestones and Deliverables

### 5.1 Milestones Month 1 - 12 (up to March 2007)

Next three months (April 06 - June 06):

- Definition of ERCB: paper by Roy Brouwer and Kerry Turner;
- Develop survey template for policy maker demand / current practice ERCB assessment (Ecologic);
- Information on existing water valuation studies collected by IVM; input from all partners appreciated;
- Develop a benchmark for stakeholder involvement in the case studies (Ecologic with support from IVM, as part of WP 5)
- Operational website with Members Area etc. (Ecologic);
- Policy brief AquaMoney to be used as promotional material (Ecologic and IVM);
- Standard format, style guide for reports, presentations etc.;
- General information on the economic analysis in the WFD distributed to partners and posted on website;
- Communication plan on how to involve the policy community / communication and dissemination plan (who are we going to deal with and how will we approach them, including some standard communication letters);
- Develop internal and external review procedures for AquaMoney products;
- Case study partners may already establish contact local decision makers / stakeholders;
- Overview of case studies and their key characteristics (IVM).

Month 4 - 6 (July 06 - September 06):

- Main body draft guidelines
- Case study work commences, survey for policy maker demand underway based on template.

Month 9:

- Summary report on policy maker demand for ERCB information based on survey template.

Month 10:

- Case Study Status Report: main problems / risks in the case study; based on Article 5 report; metadata - what data sources and types available; anticipated problems with data access;
- Blueprint for Case Studies based on draft guidelines, including meta-data on available GIS information.

### 5.2 Overview Deliverables in the coming 12 Months

Activity / report / document	Lead partner	Other partners
Technical Note definition Environmental and Resource Costs	IVM & UEA next 4-6 weeks	All partners 2 weeks time for review
Policy Note definition Environmental and Resource Costs	Ecologic-IVM-UEA week 6-8	All partners 2 weeks time for review
Draft template survey current practice	Ecologic next 4-6 weeks	All partners 2 weeks time for review
Internal teaching material AquaMoney partners to ensure same knowledge and information level (incl. economic analysis WFD and valuation in general)	IVM-UEA-NIVA-UMB-RVAU next 6 weeks	
Draft Communication Plan Policy Makers Community	Ecologic next 8 weeks	All partners 2 weeks time for review
Policy brief AquaMoney	Ecologic & IVM next 6 weeks	All partners 2 weeks time for review & distribution
Existing studies	All partners next 6-8 weeks	
Operational project website	Ecologic next 2-3 weeks	All partners 1 week time for review
Main body draft guidelines	IVM-UEA next 6 months	All partners 4 weeks time for review
Case study status report	All partners next 10 months	To be presented M12
Case study blue print based on draft guidelines	All partners by month 10	To be presented M12
Detail policy demand	All partners by month 9	To be presented M12



### 5.3 Schedule of Meetings in the Course of the Project

<b>Month</b>	<b>Meeting</b>	<b>Location</b>
1	Kick-off meeting	Amsterdam
12	Workshop: results WP 1 - 3, including Advisory Committee	Berlin
18	Workshop: preliminary case study results	Bologna
24	Workshop: final case study results	Budapest
30	Workshop: case study recommendations	Amsterdam
36	International Conference, including Advisory Committee	Berlin
counting from month 1 = 1 April 06		

It was tentatively agreed to hold the Berlin Workshop in Month 12 in the last week of March 2007, i.e. in the week starting 26 March. It is envisaged to hold this meeting as a 2 1/2 -day-event, with the Advisory Committee meeting for one day. The Scientific Council will meet in month 6. The location for this meeting is still to be determined.

## Annex



vrije Universiteit amsterdam

# PROGRAMME AQUAMONEY

## KICKOFF MEETING

**Date:** 4 & 5 April 2006  
**Location:** Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam  
De Boelelaan 1087, Amsterdam (Phone: + 31 20 598 9555)

### Day 1: 4 April

- 10.00 – 10.10 Welcome (Prof. Marjan Hofkes, Head Department Economics and Technology)  
10.10 – 10.30 Introduction AQUAMONEY partners  
10.30 – 10.40 Clarification agenda  
10.40 – 11.00 Project presentation (main objective, structure, set-up etc.) (Roy Brouwer)  
11.00 – 11.15 Objectives & expectations DG RTD (Zissimos Vergos)  
11.15 – 11.30 Coffee/tea break  
11.30 – 12.30 Discussion project set-up and work plan year 1-3
- 12.30 – 13.30 Lunch
- 13.30 – 14.00 Environmental and resource costs & key issues in their valuation (Roy Brouwer)  
14.00 – 14.30 Discussion  
14.30 – 14.45 Coffee/tea break  
14.45 – 15.15 AQUAMONEY guidelines
- Overview existing guidelines (Marije Schaafsma)
  - Objective, target group, format and content AQUAMONEY guidelines (Roy Brouwer)
- 15.15 – 15.45 Discussion  
15.45 – 16.15 Maps and the role of GIS in AQUAMONEY (Nancy Omtzigt)  
16.15 – 16.30 Discussion
- 16.30 Closure day 1
- 19.00 Dinner restaurant "*Hemelse Modder*"



## Day 2: 5 April

09.30 – 09.45 Role AQUAMONEY case studies (Roy Brouwer)

09.45 – 11.00 Short presentation key themes & issues AQUAMONEY case studies

- Scheldt: Leo de Nocker
- Danube: Zsuzsanna Flachner
- Rhine: Jean Daniel Rinaudo
- Humber: Kerry Turner
- Po: Davide Viaggi
- Nemunas: Rasa Sceponaviciute

11.00 – 11.15 Coffee/tea break

11.15 – 12.10 Presentation case studies continued

- Jucar: Manuel Pulido
- Morsa: David Barton
- Pinios: Michalis Skourtos
- Odense: Alex Dubgaard
- Guadalquivir: Julia Martin Ortega

12.10 – 12.30 Discussion

12.30 – 13.15 Lunch

13.15 – 13.45 Identification policy demand and role Advisory Board (Eduard Interwies)

13.45 – 14.15 Discussion

14.15 – 14.30 Project website (Benjamin Goerlach)

14.30 – 14.45 Coffee/tea break

14.45 – 15.45 Discussion concrete work plan year one

15.45 – 16.15 Remaining issues (including financial and administrative)

16.15 – 16.30 Summary main agreements and planning of future activities and meetings

16.30 Closure day 2

## List of participants

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