



LIFE09 ENV /FR/00059

Water RtoM

Water Research to Market

DELIVERABLE: INNOVATION PRECURSORS BUSINESS CASES

YEAR 3:12

Associated action n°2.2

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List of key-words and abbreviations

ReMAS: Research to Market Assessment strategy

LC: Liaison Committee

BC: Business Case

FC: Factsheets

1. Introduction

In the frame of Water Research to Market LIFE + project, the Action 2.2 is dedicated to: **Ranking of outputs as potential Precursors.**

The aim of this action is to select and further promote promising outputs once they have been first assessed through ReMAS. Such assessment allows the team to better select outputs according to their quality, readiness-to-be-used status, and relevance for potential users. Those outputs are determined by the Water RtoM team as **innovation precursors**, thus a Business Case (hereafter namely as BC) is prepared for them.

The main general objectives to conduct a BC for the chosen outputs are the following:

- To analyse in depth the selected output in terms of its status and distance to market.
- To describe what else has to be done to develop the innovation.

This deliverable comprises a description about the progress on this action during the third project year. Firstly, this deliverable summarizes the approach of the BC in selecting promising outputs. Secondly, the status on the BC conducted during the year 1 and year 2 is provided. Finally, during Year 2 new outputs have been selected and preliminary progresses on the BC procedures.

Looking at the numbers, at this stage of the project, 30 BC have been developed, having some of them in the status of Draft, some of them are in the "on progress" status, and one of them is in an implementation phase.

This report will summarize the status of these 30 selected outputs and will provide some conclusions coming from the three years project progress.

2. Business case rationale and output's ranking overview

This section reports on the methodology Water RtoM is applying to select an output and further develop the BC, which is shown in the figure below.

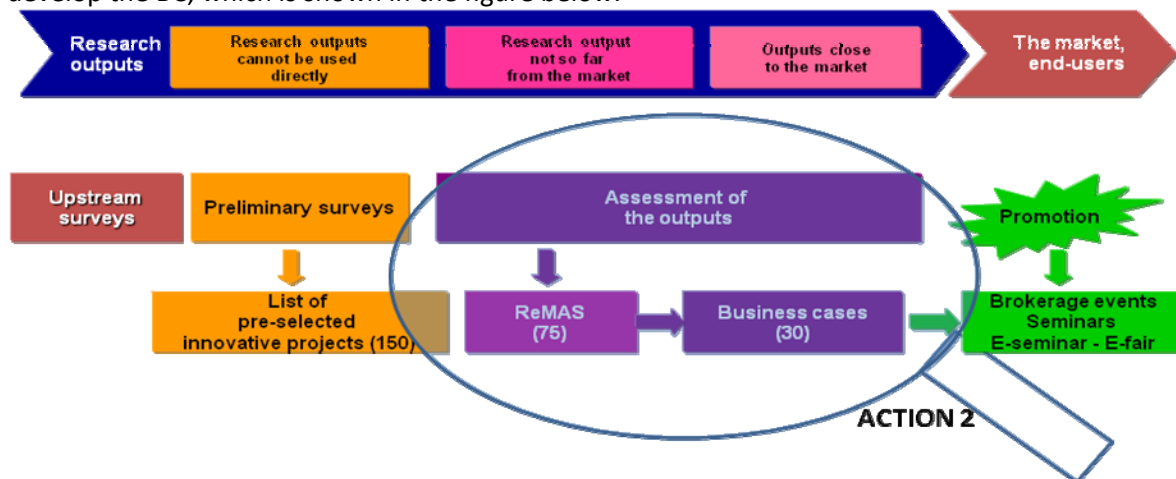


Figure 1. Water RtoM methodology

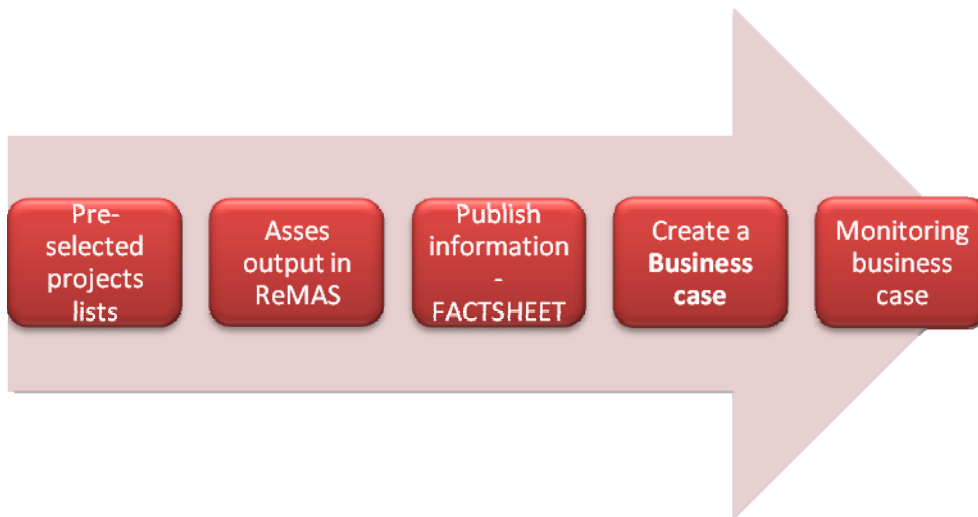
The project has been continuously developing upstream informal surveys, when looking at the research water community and identifying their new exploitable outputs. According with preliminary criteria and the current market needs set in the policy strategic programmes; the next step conducts a first selection of outputs, which is resulted in the *List of pre-selected innovative projects*. Some outputs are selected according to some general criteria (detailed description in deliverables of Action 2.1) with the aim to be evaluated through ReMAS. This evaluation is an internal deliberation of project partners after consultation with the researchers and the Liaison Committee.

Resulting from ReMAS step, some outputs can be selected as innovation precursors¹. Those selected outputs are then described in terms on what should be done to develop innovation, i.e. the BC. This description should be done along with the Researchers and the potential end-users of the output.

The classification and description of outputs is not only a desk-based work. The information comes from close contacts with the research teams in order to support in the identifications of strengths and weaknesses of the outputs and especially to design together and action plan to implement the output in a shorten timescale.

With an agreement of the research team and those with property rights over the selected output, some information from this description process will be publishable. The publishable information on the output has a more market oriented approach to encourage potential users to innovate.

¹ **Innovation precursors.** In the frame of Water RtoM Project, Innovation precursors are those research outputs that after ReMAS asessment have been classified with following characteristics: close to the market, with high potential transferability, close to the status “ready for use” and they are covering a need of the market.



2.1. What entails a Business case?

The BC entails three tasks in which gathered information from ReMAS is analysed and completed.

The three tasks are as follows:

1. **Detailed description on the output.** This summarizes main acquired information through ReMAS tool, but further detailed, and information is structured in different slot sections. Those sections can be structured as follows:
 - SECTIONS 1: Project details and description of Output (information partly to be taken from ReMAS).
 - SECTION 2: Functioning details
 - SECTION 3: Availability of the output
 - SECTION 4: Market, legal situation details
 - SECTIONS 5, 6 & 7: Activities to achieve the status “ready for use” (legal, market, social, technical)
 - SECTION 8: Economic analysis approach
 - SECTION 9: Estimation time for the achievement of the “implemented” status.
 - SECTION 10: Monitoring indicators
2. A general and publishable description of the output as a **Factsheet** The aim is to have key information on the new product from the Innovation chain point of view.
3. **Action plan of the identified activities.** It entails a plan with list activities per Timing and objective, and also the whole action plan with a detailed description per activity. This is a dynamic section that needs to be monitored according with afore mentioned section11.

Each BC will be adapted to the specificities of the output that is being analysed publishable information will be contrasted and validated by output “owner”.

A form template on what shall content the BC has been drafted to be validated in the forthcoming LC web meeting. (See more in detail the attached BC template in Annex 1)

3. Work progress

Legend: **BC Status**

- **Achieved:** output has been implemented into the Market.
- **In progress:** Action plan (third phase of BC is active) Output has been analyzed. Information in BC could be updated.
- **Draft:** Output is being analyzed. Factsheets is already done and is public. Questionnaire is filled out. Action plan is drafted.
- **ReMAS:** Output needs first to be assessed by ReMAS tool, therefore after this evaluation the output can result not an innovation precursor and be revoked from this list.

3.1. Updates from Year 1 BC

Following is an overview of the actions taken by each output with a BC and its status

Year 1	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
SMAA		Software for groundwater resources modelling using eigenvalues	From <u>In progress</u> to <u>Achieved</u>	<ul style="list-style-type: none"> - Presentation in National seminar 2 SPAIN (Madrid) - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest - Dissemination of FS in Brokerage events (EUROINBO, SMAGUA and GREENWEEK) - Common calendar with all stakeholders to implement actions - Mentioned in first Newsletter - Monthly talks with project “owner” - Appearance in one national Article (iAgua) 	<ul style="list-style-type: none"> - One river basin agency has already expressed interest in use the document - One post PhD student wants to research more on this tool and finalise its implementation - At the institutional level, economical barriers to finalize its implementation are being in a good way - High willingness of project “owner” to collaborate with Water RtoM. Positive feedback
WCMS		DEMONSTRATION STAGE Tool for modelling future scenarios (DSS) based around both climatic and anthropogenic medium and long-term changes that may occur regionally in a river basin,	In progress	<ul style="list-style-type: none"> - National seminar 1 entirely dedicated to promotion of its results among other similar outputs. - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest - Dissemination of FS in Brokerage events 	<ul style="list-style-type: none"> - 3 potential users expressed interest in get more information about this output during Brokerage events, after discussing with them the use of the Factsheet. - 4 attendants in the e-seminar, and 2 with special interest in the tool.

Year 1	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
				<ul style="list-style-type: none"> (EUROINBO, SMAGUA and GREENWEEK) - Mentioned in SPANISH first Newsletter - Monthly talks with project "owner" - Organisation of a dedicated seminar - Common calendar with all stakeholders to implement actions 	<ul style="list-style-type: none"> - One person from USA expressed interest in this output - Project "owners" very willing to collaborate in all dissemination actions.
	ECOWATCH	ECOWATCH consisted in the development of a detection system (software) capable to identify environmental damages occurred in river basins on time	Draft	<ul style="list-style-type: none"> - No final validation on the BC by Project owner - Dissemination of FS in SMAGUA and GREENWEEK brokerage event. - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest - E-seminar to be organized the 30th October 2012 	<ul style="list-style-type: none"> - No real interactions with project "owners" yet.
	APOINT	Permanent online monitoring of the citizen perception on water and wastewater services quality	Achieved	<ul style="list-style-type: none"> - Dissemination of FS in Brokerage events (SMAGUA and GREENWEEK) - Mentioned in first Newsletter - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest - Dissemination in National seminar on 15 March 2013 Romania, Iasi - Dissemination in National seminar on 9 June 2013 Romania, Bucharest - Dissemination in event "Current solutions in information and communication technology" 11-13 October 2012, Calimanesti, Romania (12 October 2012 - Water RtoM) 	<ul style="list-style-type: none"> - Very sensitive subject because of links with media and end users. There is a cautious attitude of water utilities in implementing the output
	GENESIS (IMGW partners part of project)	It is a system supporting sanitary inspection of the bathing areas to protect the general health of users, taking under consideration the possible bacteriological contamination	Achieved	<ul style="list-style-type: none"> - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest. - Finding funds for further functioning - DATA for 2012 collected, DATA 2013 still gathered - Publications regarding the output - Dissemination of the MODEL software 	<ul style="list-style-type: none"> - Strong cooperation with the Polish partner of the project - Project aims at the direct, interested target group - Constant dissemination of the output

Year 1	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
	SEMEAU	Modelling method for a body of water (elaboration, test, dissemination) Scenarios,	In progress	- Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest	- final seminar of SEMEAU 17-19 Oct 2012
	AGUAFLASH	The AguaFlash project has for objective the development of a method to determine the risks of deterioration of water quality in agricultural catchments including floods events, transposable to the south-western part of the European territory	From <u>draft</u> to <u>In progress</u>	- Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest	- Final restitution of the project April 2012. - Stakeholders interested in an assessment tool of the risk of water quality degradation during floods, easy to use, reliable, low cost and transferable to other river basins
	DEVELOPMENT	Verification and testing method for and integrated assessment of surface waters in Poland, including the estimation of uncertainty and risk of misclassification	Achieved	Dissemination of information about the availability of the output. Participation in the national seminars	Communication with the project owner has improved significantly Search for a new funding and/or funders, marketing actions.

Table 1. Update Year 1 BC

3.2. Update Year 2 BC

Year 2	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
	APIFLOT	AND EXPERIMENTAL RESEARCHES IN ORDER TO DESIGN AN ADVANCED TREATMENT TECHNOLOGY (FLOTATION) FOR HEAVILY LOADED WASTEWATERS	Achieved	- Dissemination of FS in Brokerage events (, SMAGUA, GREENWEEK and EXPOAPA 2012) - Dissemination of FS in National seminar on 27 March 2012 Romania, Bucharest - Mentioned in Romanian first Newsletter - Mentioned in RomAqua Magazine - Dissemination in event Meetings of the working group Quality- Environment of the Romanian Water Association 14-16 February 2013, Campulung Muscel - Voina, Romania (15 February 2013 - Water	- Project "owners" very willing to collaborate in all dissemination actions. - In EXPOAPA 2012- brokerage event on 12.06.2012 there were 4 meetings scheduled face to face with representatives of the four water utility companies in Romania

Year 2	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
				RtoM) - Dissemination in National seminar on 12 March 2013 Romania, Bucharest	
	NPPT	Residual sewage sludge post treatment technology (process and installation) for use as agricultural fertilizers	Achieved	<ul style="list-style-type: none"> - Dissemination of FS in Brokerage events (, SMAGUA, EXPOAPA and GREENWEEK) - Mentioned in SPANISH first Newsletter - Mentioned in Romanian first Newsletter - Mentioned in RomAqua Magazine - Dissemination in event Meetings of the working group Quality- Environment of the Romanian Water Association - 14-16 February 2013, Campulung Muscel - Voina, Romania (15 February 2013 - Water RtoM) - Dissemination in National seminar on 12 March 2013 Romania, Bucharest 	<ul style="list-style-type: none"> - To the owners there are difficulties in estimate the costs and future steps to be ready for the market. We expect answers in this regard. - In EXPOAPA 2012- brokerage event on 12.06.2012 there were 7 meetings scheduled face to face with representatives of the seven water utility companies in Romania.
	INCOAGEN	Coagulant generator for drinking water production.	In progress	- Dissemination planned for the national seminar in October in Limoges (cancelled).	- Owner very interested to promote this output through Water RtoM
	PROPLIPHC	Operational monitoring and alert in real time system to manage the risks of proliferation of phytoplankton, including cyanobacteria in continental aquatic environments.	In progress	- utility patterns (ready to use), Technical and economical Analysis toward pre-industrialization	- Difficulty to contact the owner. We need to interview them. We don't know if the product is on the market
	EHREK	Ecohydrological rehabilitation of recreational reservoirs "Arturówek" as a model approach to rehabilitation of urban reservoirs	Achieved	<ul style="list-style-type: none"> - Promotion on events, dissemination of information through end-users groups, e-seminar participation, constant up-date of information. - sedimentation/bio-filtration system has been constructed and is exploited. - Upper „Arturówek” reservoir is being exploited - buffer zones and floating mats of plants have been constructed and exploited 	<ul style="list-style-type: none"> - Very good cooperation, participation in e-seminars and seminars - Project is in the final stage of its development, the example of the output will be transferred onto other cities that have similar problems with aquifers - Constant dissemination actions undertaken by the EHREK owner (games, leaflets, books)

Year 2	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
				<ul style="list-style-type: none"> - bottom sediments have been successfully removed and additional internal charge is constantly limited 	
	EKOROB	Ecotones for Reducing Diffusion Pollution	Achieved	<ul style="list-style-type: none"> - Promotion through events, dissemination of materials through group of potential end-users, participation in e-seminar planned for the end of November. - Development of an action program towards the pollution reduction based on ecohydrological methods of fitoremediation - a manual describing ecotone formation; - Raising awareness of local communities through training and meetings, activities for schools; - The establishment of stakeholder platforms (Multi-Stakeholder Platforms), which involves working to improve knowledge and information. Dialogue leading to the formation of optimal solutions that are best for the environment. 	<ul style="list-style-type: none"> - Good cooperation, involvement and updating, - Technology ready to use - Cooperation with EKOROB , their participation in seminars and during the events
	ZIZOZAP	Management in Reservoir Catchment and Socio-economic Effects as Elements of Model and Integrated System Supporting Management of Water Reservoir	Achieved	<ul style="list-style-type: none"> - Promotion on events, dissemination of information through end-users groups, e-seminar participation, constant up-date of information. - The measures necessary for the introduction and operation of the product on the European market (after the project) such as promotion, organizing logistics, storage, employment specialists, others 	<ul style="list-style-type: none"> - Good cooperation, participation in all the events organized by GFW in WaterRtoM events - Possible future cooperation
	GNIEZNO	Recultivation of Jelonek and Winiary lakes in Gniezno by	Achieved	<ul style="list-style-type: none"> - Successful dissemination on Brokerage events (, SMAGUA and GREENWEEK, seminars, e-seminars) - Mentioned in SPANISH first Newsletter Promotion through events, dissemination of additional materials given by the owner, promotion through many conferences and 	<p>Cooperation very good, e-seminar participation very successful, technology ready to use</p> <p>Participation in other events related to the WaterRtom plan</p> <p>Output has been transferred onto many other cities, good</p>

Year 2	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
				side events, e-seminar promotion.	example of a success stories
	REDSIM-IS	REDSIM-IS is a single web portal that integrates all available spatiotemporal information of the study basins, to provide updated information on soil and crops for better irrigation management, planning and scheduling by the farmer, but also other decision makers.	In progress	<ul style="list-style-type: none"> - This new output was also presented during the National Seminar 2 (SPAIN) - To prepare an e-seminar - To further integrate all components of this output 	<ul style="list-style-type: none"> - Project owner very willing to collaborate with Water RtoM
	AG-GUAS	Use of Sustainable Unmanned Aerial System-based Remote sensing in water management at regional level and a service to advice on the use of them	Draft	<ul style="list-style-type: none"> - This new output was also presented during the National Seminar 2 (SPAIN) 	<ul style="list-style-type: none"> - So far, no major involvement from the project owner was reached, they still see water RtoM as an extra task rather than an opportunity to better disseminate their result.

3.3. Year 3 BC

Year 3	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
	AMPERES	Analytical methodologies for emerging micro-pollutants in complex matrices. This project dealt with emerging contaminants analysis (pharmaceuticals, etc.) and wastewater treatment performance for these substances. The project has helped to develop performing sampling methods and analytical methodologies for these micro-pollutants in complex matrices	In progress	<p>Job has been done on molecules from "old regulation". In the near future, works will be on new molecules in other projects.</p> <p>Methodology seems to be defined. Methodology diffusion has been done by scientific articles and 2 theses.</p>	<ul style="list-style-type: none"> - Intellectual property could be an obstacle because its availability is limited except maybe INERIS.

Year 3	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
	SETTLER FILTER	This prototype will help to solve problems of banks erosion in rural areas (example: Limousine Region). All rural areas with animal breeding will be interested by this technology.	In progress	Next steps: ACTION 1: Write the user's guide Action 2: File a patent - Action 3: Spread the technology	- Owner is Project owner very willing to collaborate with Water RtoM and to disseminate the innovation
	WIRED TREE	This methodology/technique will solve problems of lack of ecological diversity in plain rivers. It will help to avoid removal of fallen trees from rivers. Fallen or cut trees will fill river pits.	In progress	- Tests are finished. Many wired trees (more than 40) have been fixed in the Clain Sud watershed since 2007. It's time to export technology to other areas with plain rivers or with weak ecological diversity rivers. - Tool consolidation for next 3 years: Action 1: Communication/dissemination, Action 2: User's guide	- Total opening for collaboration
	LIME MILK	Prototype for lime milk remineralisation of drinking water. The lime milk remineralisation prototype is a device used to add lime milk into very soft waters, thus allowing for a neutralisation and remineralisation of the drinking water. It has been tested on a small scale, and is on the verge of being tested on a semi industrial scale	In progress	- Test of a pilot unit in real life situations, before end of 2014 - Pilot testing: creation and test.... in progress - Advertising: Making the output known	-
	GREENLYSIS	Production of hydrogen and oxygen with treated waste water. Oxygen for the biologic treatment and hydrogen for fuel. The treated water of a WWTP is disinfected and treated (Ultra filtration process+ UV disinfection + purified by membrane distillation) to be electrolysed and supplied by renewable electrical energy (solar	In progress	Ready to use, A pilot plant has being created in the WWTP of Montornes in Spain to do the experimentations. It is being dismantled due to space availability. A communication on the results has been done in nov 2012 and is accessible on the site of Greenlysis. Next steps: Experimentation in a real waste water plant	- Nowadays, and considering the hydrogen situation in Europe, the full-scale implementation of the project is not feasible. Moreover, both the investment and operational cost of the project are very expensive; hence a full scale implementation is not economically sustainable. - According to the results of the project and the current energy prices, a full scale installation will not be cost effectively unless investment cost decreases or energy prices increases more than 100 times. - The results of the project will be applied in the short

Year 3	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
		and wind). The Electrolysis of this water produces oxygen to improve biologic treatment and hydrogen to produce fuel and. The project consist in the balance between energy consumption and energy production to reduce the GHG of the process of WWTP			term as independent technologies but not as full scale installation.
	(COASTAL SENSORS) TROPHIMATIQUE	New miniaturised in situ sensors, capable of high frequency analysis The output is a floating buoy that allows for chemical and physical monitoring of waters. It is innovative in the sense that it uses an all inclusive automated mini laboratory, allowing for several parameters to be analysed, and transmits any analysis results live to the researcher.	In progress	Commercial for the coastal probe, research stage for the other probes. There does not exist a sensor capable of functioning in freshwater or far at sea. However, as there is already the Trophimatique sensor for coastal waters, an adaptation of this sensor rig would make it usable (chlorination process for freshwater, satellite links for at sea). There's research involved, development, and then advertisement to put it on the market.	- Absence of risk on a legal point of view, low risk on a social point of view, low risk on economics, since those sensors can be and have been lost at sea during storms. - Broadening the scope of production. There is currently only one firm who produces the coastal buoys. Increasing the range and scope of the outputs by allowing for freshwater implementation and/or non coastal sea waters
	WATER BARGAIN	Theoretical analysis of the effects of nonlinear agricultural water pricing on the environment (watercourse flow), the agricultural production, the farmers' benefits and on the water user association (WUA) budget balance. Parameter estimation for an easy-to-use, acceptable contract between WUA and farmers. Nonlinear pricing is presented as a simple double entry table.	In progress	- idea/theory, methodology, conceptual model - Not yet ready to use. Need further work to come from case studies to concrete utilization or diffusion. - Published in peer-reviewed scientific journals and well received in Congresses and seminaries; guaranteeing the soundness and merits of this method. - Next development: Quantitative simulations in varied conditions; simulation of rare climatic events in order to compare the sustainability of this solution to the sustainability of the present used solution for water sharing.	- About three years of work to be ready to use
	HYDROMIMICRI	This dynamic approach will support hydroelectric units	In progress	In pilot test Further action: Scientific interest group	Transferable for high and medium energy

Year 3	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
		managers to actively participate in solids transport managing while using sediments from hydroelectric units. It will allow streams local managers make infrastructures less invasive with sustainable and positive impacts on the functioning of streams dynamic evolution while controlling costs. This methodology will limit heavy works		creation, Production of Specific Equipments for measurement, To better know the high energy river functioning	Not suitable for lowland rivers The owner is open to collaboration
	MUSIASSEM	MuSIASEM is an accounting methodology for the assessment of water use and its impacts able to deal with different perceptions about water and different spatial-temporal scales of analysis. It was created during the 90's for the assessment of energy use and it is now adapted for water studies.	Draft	<ul style="list-style-type: none"> - Promotion in related Newsletter - Promotion of the Summer School - Invitation to related events 	<ul style="list-style-type: none"> - Researcher very willing to collaborate - Difficulties to engage with the research group as the crisis situation difficulties their availability
	ADEMETER	Automated Meter Reading solution for non-energized meters (gas and water) in urban areas, based on autonomous, wireless, low-cost devices.	In progress	<ul style="list-style-type: none"> - Preparation of e-seminar - Output profile has been sent to a determined email list in Poland and Romania. 	<ul style="list-style-type: none"> - Output very close to “ready to be used” status <p>It just needs further promotion and the owner lacked resources to do it.</p>
	QUIMET	QUIMET was developed to improve the treatment, analysis, calculations, visualizations and interpretations of hydro geochemical data in a GIS environment. QUIMET is composed of a geospatial database plus a set of tools specially designed for graphical	In progress	<ul style="list-style-type: none"> - Preparation of a seminar in Barcelona in October 2013 	<ul style="list-style-type: none"> - Easiness to uptake software and e-tools due to their easier availability. - Connected to a PhD thesis.

Year 3	Output Name	Description	BC STATUS	Implemented actions / Further actions	Comments /Conclusions
		(e.g. Piper, Stiff diagrams) and statistical analysis (e.g. correlation matrix) of hydrochemical parameters.			
MCPRHCECQ		Mcpfreeqc software provides a way to do Monte-Carlo simulations automatically, this is applied in geochemical modeling.	Achieved	<ul style="list-style-type: none"> - E-seminar - Promotion through website - Organization of the availability of the output (website) 	<ul style="list-style-type: none"> - Software with focalized audience, very willing to uptake a free tool that can facilitate their task. - Easiness to uptake software and e-tools due to their easier availability.

3.4. Overview of all BC

Table. Innovation precursors ranking by status

18 Business cases Year 1 (6 in italic) + Year 2 (10 in italic) + Year 3 (12 in bold)

Output	BC STATUS - RANKING	Note: <i>Status BC:</i>
DEVELOPMENT	<i>Achieved</i>	<ul style="list-style-type: none"> - Achieved: output has been implemented into the Market. - In progress: Action plan (third phase BC) is active, Output has been analysed. Information in BC could be updated. - Draft: Output is being analysed. Factsheets is already done and is public. Questionnaire filled out - ReMAS: Output needs first to be assessed by ReMAS tool, therefore after this evaluation the output can result not an innovation precursor and be revoked from this list.
ZIZOZAZ	<i>Achieved</i>	
WCMS (water change)	<i>Achieved</i>	
GENESIS	<i>In Progress</i>	
APIFLOT	<i>In progress</i>	
INCOAGEN	<i>In progress</i>	
PROPLIPHC	<i>In progress</i>	
EHREK	<i>Achieved</i>	
EKOROB	<i>In progress</i>	
GNIEZNO	<i>Achieved</i>	
REDSIM-IS	<i>In progress</i>	
SEMEAU	<i>From draft to In progress</i>	
AGUAFLASH	<i>From draft to In progress</i>	
SMAA	<i>Achieved</i>	
ECOWATCH	<i>Draft to In progress</i>	
APORT	<i>Draft to In progress</i>	
NPPT	<i>Draft to In progress</i>	
AG-GUAS	<i>Draft to In progress</i>	
AMPERES	<i>In progress</i>	
SETTLER FILTER	<i>In progress</i>	
WIRED TREE	<i>In progress</i>	
LIME MILK	<i>In progress</i>	
GREENLYSIS	<i>In progress</i>	
(COASTAL SENSORS)	<i>In progress</i>	

TROPHIMATIQUE		
WATER BARGAIN	<i>In progress</i>	
HYDROMIMICRI	<i>In progress</i>	
MUSIASSEM	<i>In progress</i>	
ADEMETER	<i>In progress</i>	
QUIMET	<i>Achieved</i>	
MCPHREEQC	<i>Achieved</i>	

4. SUCCESS STORIES – IMPACT OF THE BUSSINESS CASES

During the life of Water RtoM, 200 research outputs were identified, 82 assessed in term of distance to the market, 30 business cases developed and 13 products could be considered as success stories.

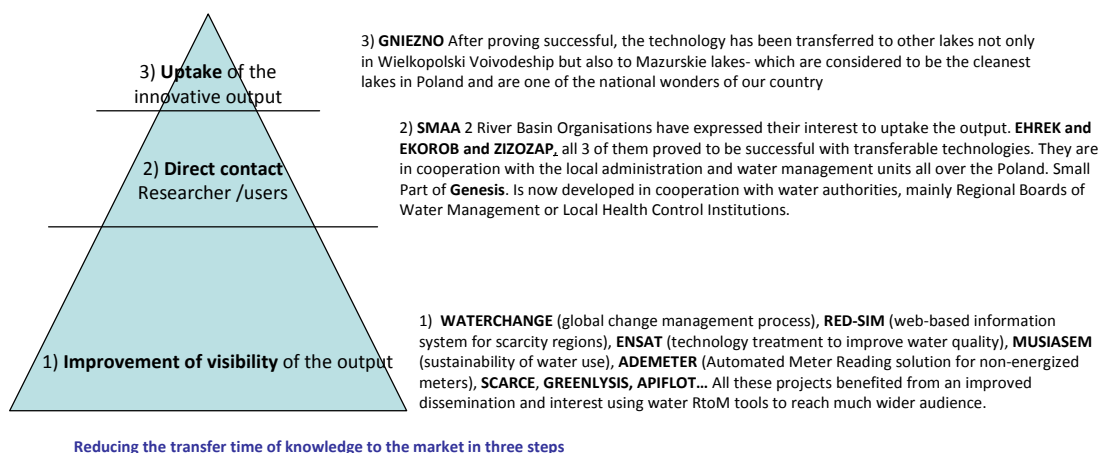
Success stories are stories that somehow speeded up the transfer time between research outputs (innovation) and its utilisation by someone else outside academia. Water RtoM consortium established three levels of success stories reducing the transfer time of the knowledge during Water RtoM life are:

Level 1- Direct uptake of the output – this is the case when the output has accomplished the innovation chain, and is not anymore on the hands of the academia for further developments, end-users expressed not only

Level 2 – The idea of the output is taken up (networking has been promotes). In this sense, Water RtoM activities created a direct linkage between two stakeholders: owners and users creation of a direct contact between owners and users.

Level 3 – Visibility of the output has been improved. Water RtoM activities (e-seminars, conferences, gadgets, etc.) have substantially contributed to enhance the visibility of those outputs (not the projects); its activities have allowed owners to stay more present at innovation events, at innovation platforms, etc.

The three stories below describe how WaterRtoM reduced the distance between the research owner and the innovator (the potential user of the innovation):



5. CONCLUSIONS

The process of developing a Business Case and its implementation became an important task as a process which can make possible to follow up the efforts Water RtoM is making for each output.

The three years of the project showed the relevance of further working with some of the outputs while developing the BC. However practical limitations where raised in the process of developing BC:

- Lack of resources to obtain a Completed BC (action plan not only drafted as foreseen in the project proposal, but also implemented). There weren't resources allocated to implement the action plan as detailed as needed. Therefore, actions at each of the action plan of the outputs could just be partially implemented. When project Action2.2 was budgeted, it was

anticipated that to develop each BC, it was needed 2 person/days. However this allocation of work resources was just dedicated for the development of a questionnaire and further discussions with the output 'owners'. In this sense all 30 BC have achieved this objective. However, Consortium acknowledged after the project was granted that more than just a questionnaire was needed. Thus, the implementation and monitoring of an action plan is beyond this planning, therefore not all BC have an ongoing Action Plan and some of them are not in the status "achieved". According to the agreements with output 'owners', they should have exchange information on new developments and activities, which was entailed in the action plan.

- Development of the 30 BC was very much dependant on the reactivity and willingness of the researchers to provide further information. Sometimes they did not have the capacity to provide answers to all the sections, or they lacked devoted time to do it. This constraint is sometimes making slower the process, because external support outside project consortium is needed. The delay would cause a problem with documentation completion. In order to avoid lack of involvement or delays, one of the internal criteria Water RtoM set is a selection of those outputs in which close collaboration with the researcher's team could be established.
- A challenge in the development of BCs is the economical analysis and financial risks to determine further uptake of a research output. The most important role of this analysis step is to create awareness on the need to do this analysis. Normally, no specific numbers can be provided to each item in which there is a potential financial risk. Even if providing quantitative information is not always possible, qualitative information can be provided as well as considerations to be taken by the potential users. Normally final numbers can only be provided by each potential user and they are also time-dependent.
- Normally, there were no differences between the Output profile from the ReMAS and from the BC phases; they remain equal as researchers do not want to make public information regarding risks. It is crucial to send the BC to the owners before for a general correction and dissemination. Some of the information gathered might not be to publish. Also one needs to remember that BC is supposed to serve as a completion of knowledge- not the first information pack. In other words it should be available on-line and carefully chosen in case of taking it on seminars or brokerage events.
- This is long term activity which cannot be done year per year as originally planned, the monitoring and further progress activities are to be one of the central tasks in this phase. It needs to be seen as a flexible and long term phase, not only in 3 years. If Water RtoM as a Service could be deployed the BC vision should be changed to a more long-term oriented one.

Has been effective enough the Business Case phase?

Experience shows that this process should be integrated in the ReMAS process as sometimes it was a repetition of some of the steps (discretionary phases) and questioning of similar questions. However, in order to develop operational and effective Action Plan for the implementation of the output, it is needed to provide more detailed information than in the ReMAS.

Once the BC has been developed, there is a further step in order to set a series of actions and calendar with the output owner. There is not a general recipe to create effective Action Plan, but it should come from a detailed analysis of the information from the phase 1 of the Business cases.

The business case step was very helpful to deepen in the process of marketing and further development of research outputs, as it supported researchers to make clear how they transfer their knowledge and what else should be done in order to achieve the transfer (i.e. action plan).

ANNEX 1: BUSSINES CASE TEMPLATE

INTRODUCTION TO THIS DOCUMENT

Water RtoM methodology starts with the identification of research projects in the field of water and the most relevant outputs. Some outputs are selected according to Water RtoM criteria with the aim to be evaluated through ReMAS. This evaluation results in an internal deliberation of project partners after consultation with the researchers and the Liaison Committee of the project.

As a result from ReMAS, some outputs can be selected as innovation precursors. Those selected outputs are then described in terms on what should be done to develop innovation, i.e. the **BUSSINES CASE**. This description should be done along with the researchers and the potential end-users of the output. Resulting from the process an action plan to achieve uptake of the output is developed.

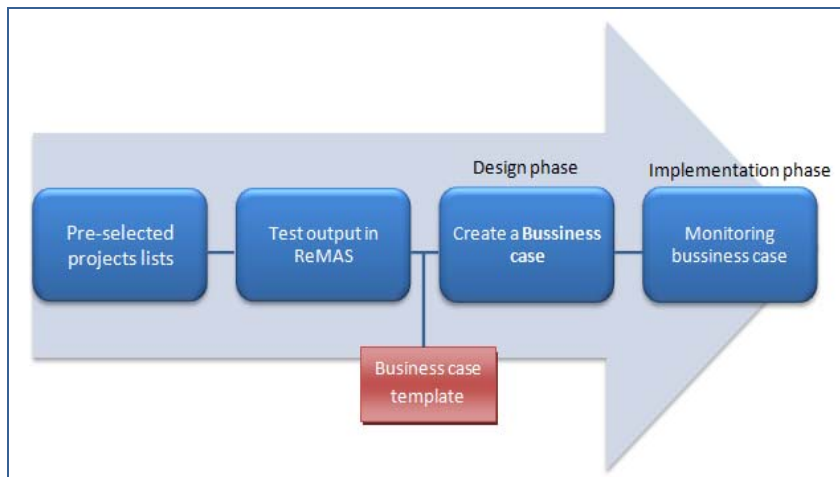


Figure 2. Water RtoM methodology

What entails a Business case?

The BC entails three different tasks in which gathered information from ReMAS is analysed and completed.

4. **Questionnaire description on the output.** This will summarize main acquired information through ReMAS tool, but further detailed, and information is structured in different sections.
5. Update and extension of the **Output profile** resulted from the ReMAS process. The aim is to have key information on the new product and have it public available. This is posted in the Water RtoM e-fair.
6. **Action plan of the identified activities.** It entails a plan with list activities per timing and objective, and also the whole action plan with a detailed description per activity. The action plan can be further updated and the intention is to monitor the activities in the future. For the Water RtoM purpose and objectives this is just to be drafted deployment of the action plan remains and action to be further checked if Water RtoM becomes a Service.

I. QUESTIONNAIRE – BUSINESS CASE DESCRIPTION

- Please complete with the information already gathered through REMAS process.
- Establish interviews with researchers and potential users to further fill out other sections.

OUTPUT* (what output/name)

Date of last completing this document:

1. Description of the project output

1.1. Output category

(methodology, software, equipment, ...)

1.2. Area qualification – keywords

- *(water topic – groundwater, wetlands, surface waters, ...)*
- *problem dealt with - quality of natural systems, urban pollution, floods, management process, ...*
- *Field of science – chemistry, biology, economics, policy,...*

1.3. Market keywords

(service, equipment, treatment, software...)

1.4. Context of the output

(What/for what/technologies/... Innovative aspect and advantages for the user.)

Description (20 lines)

1.5. Abstract – general description

(10 lines)

1.6. State of development of the output

(Is it ended, in progress, tested, ...)

1.7. Group of prospective users

(to whom the output is addressed)

1.8. Benefits to use the output for the end-users

(value-added of using the output)

1.9. Benefits for to use the output for water environment <i>(ecological effect of output usage)</i>	
1.10.	Summary of the risks identified from the REMAS
1.11.	Solutions to reduce the risks

2. Output Functioning

2.1. Compatibility with the existing tools	
2.2. Possibility of improvement/adaptation/modification for wider area- Transferability <i>(technical, geographical range, ...)</i>	
2.3. Limitation for use <i>(geographic, socio-economical, political, climatic, ...)</i>	
2.4. Technical prerequisites to use the output <i>(e.g. for flood model, hydrological parameters, ...)</i>	
2.5. Technical expertise required	

3. Availability of the output

3.1. Guidance <i>(is it attached to the output, what kind, where available, ...)</i>	
3.2. Place to get the output	

4. Market, legal, political situation of the output context

4.1. Actual legal regulations <i>(external obligation to do a such output)</i>	
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4.2. Economical effect of output usage

(prospective profits)

4.3. Political/social sympathy for the output

(politicians, ecological organizations, ..., Are there any special favourable/unfavourable aspects regarding with implementation of the output, which can help or make difficulties)

5. Market activities to achieve the status “ready for use”

5.1. Advertisement of the output

(if needed, what kind, range, ...)

5.2. Distribution of the output

(if needed, what kind, range, ...)

5.3. Negotiations with clients, partners, stakeholders, etc.

(if needed, with whom, what subjects, ...)

(prospective partner organizations, kind of cooperation, ...)

6. Legal activities to achieve the status “ready for use”

6.1. Accomplishment of copyrights or property rights

(if needed, deadline, ...)

6.2. Accomplishment of documents

(licences, permissions, insurance, ..., (note: every country has its own requirements)

7. Technical activities to achieve the status “ready for use”

7.1. Accomplishment of researches, tests, pilot action

(if needed, what are the deadlines? Prospective locations?, etc.)

7.2. Enrolment specialists responsible for implementation of the output

(does implementation of the output requires reorganization of human resource?.)

7.3. Equipment, offices, storerooms

(does implementation of the output requires to organise it?)

7.4. Post-sell services and helpdesk

(does implementation of the output requires to organise it?)

7.5. Trainings for prospective users of the output

(does implementation of the output requires to organise it in order to create capacity building to reuse the output)

7.6. Translations of documents

(if need, what languages? what documents?)

7.7. Packaging of the output:

(e.g., if it is a software improve the interface, to create a marketing documents)

8. Economic analysis

Following are some potential costs that can incurred to achieve the status of “ready to be used”

8.1. Cost of the software/licences

(free or not, cost for licences, ...)

8.2. Costs for dissemination actions

(Website maintenance, flyers, etc.)

8.3. Costs of maintenance the output

8.4. Extra costs to use the output daily
8.5. Frequency of updating and the extra costs of functioning, support
8.6. Getting additional donations <i>(sources of financing, amount, deadlines, ...)</i>
8.7. Maintenance of the output
8.8. Personal costs <i>(salaries, trainings, ..., persons responsible for implementation of the output)</i>
8.9. Rates of exchange <i>(e.g. EUR→???)</i>
8.10. Rating <i>(if it is necessary to get loan, amount, deadline, ...)</i>
8.11. The additional costs to adapt the output to the market <i>(technological adaptation, marketing, commercialisation, ...)</i>
8.12. Profits suspected from implementation of the output <i>(per item, year, licence, ...)</i>

9. Monitoring indicators

Please identify some of the key actions to achieve the status “ready to be used” and establish progress indicators of their completion. Afterwards the action plan should be built upon those key activities.

Examples of common key activities are listed below:

- Commercial /promotion/marketing documentation: user manual, explanatory video, etc.
- Establishment of technical support while using the output
- Translations
- Pilot test
- Collaborative agreements with stakeholders

KEY ACTIVITY 1. – PROGRESS INDICATOR

KEY ACTIVITY 2. – PROGRESS INDICATOR

KEY ACTIVITY 3. – PROGRESS INDICATOR

10. Assuming timing of the full action of implementation

11. Main weaknesses of the output

12. General advices

14. Agreement of the research group on the BC dissemination

Indicate which sections are under agreement to be public

II. UPDATE OF THE OUTPUT PROFILE

Key info on the output from the “end users” point of view

Although the Output profile has already been created thanks to the REMAS step, now this can be further updated and more detailed.

This step is to further filled out the Output profile with the agreed sections in section 14 of the above questionnaire.

Once this template is filled by the project partners with the support of the “owners” of the output, it is distributed as it is or in part through Water RtoM events, in Water RtoM networks and on the internet. The aim is to allow interested parties (can be a public body like water administration and/or a small or medium company or any other actor) to better understand the utility/usefulness of the related outputs in terms of Innovation and possibly propose collaboration or development on the market.

OUTPUT/PRODUCT NAME	
OUTPUT DESCRIPTION	<i>Please indicate a brief description of the output: an output is a single element developed by a research project with potential use for third parties or researchers themselves: DSS, software, guide, ...</i>
WATER TOPIC	<i>Preferably using the classical terms (water body categories: groundwater, river, lake, and transitional coastal, or water pollution, wastewater, drinking water...)</i>
TYPE OF OUTPUT	
MARKET NEED TAILORED	<i>What policy objectives does the output support?</i>
INNOVATIVE ASPECTS AND ADVANTAGES	<i>Please indicate shortly the potential exploitation of the result, and the advantages for the partner, the end-users, the environment (and water status, management...)</i>
STATE OF DEVELOPMENT	<i>Small scale Pilot, semi industrial pilot,</i>
TRANSFERABILITY	<i>Please indicate the possibility to transfer the output on other territories, other scale or other technical or thematic field: if it was tested/ is possible</i>
DISSEMINATION STRATEGY	<i>Please explain your dissemination strategy for the output Or specify if you have no strategy</i>
INTELLECTUAL PROPERTY RIGHTS	<i>Availability of the output for third users: licence, copyright or any other fee</i>
FORESEEN CLIENTS	<i>Research, SME, big industrial plants, ...</i>
NEXT STEPS TO DEVELOP THE OUTPUT FOR THE MARKET	<i>Please list the needed actions in terms of innovation or further research that are needed to put on the market the innovative product. Please note the market can be either when the product is bought by a client or the set of end users depending on your economic model</i>

	<ul style="list-style-type: none"> •
COMMENT ABOUT MARKET APPLICATION (RISK AND SOLUTIONS)	<i>(market needs, usefulness of the output, prospective users, ...)</i>
COLLABORATION DETAILS	<i>Technical co-operation, assistance, commercial agreement, manufacturing, financing</i>
TYPE OF PARTNER SOUGHT	<i>SME/Company, research organisations, others</i>
SPECIFIC AREAS OF ACTIVITY OF THE PARTNER SOUGHT	<i>This is centred on the technical expertise area(s) (software, economist, communication, hydrologist...).</i>
TASKS TO BE PERFORMED BY THE SOUGHT PARTNER	<i>This can be implementation of an industrialised pilot, of small or large scale tests, development of user friendly interface, users' guide...</i>
FORESEEN RISKS FOR OUTPUT USERS	<p>Absence of risk, low risk or high risk on legal aspects (ex: law obliging stakeholders to implement aspects related to the output) and on market aspects (complicated to implement, need for costly furniture, similar product already on the market...)</p> <p><i>please provide summary assessment here and more details in following page</i></p>
RESOURCES FOR NEXT STEPS	Objective is to make it ready for the market : associated expertise, tools (server, ...),
FORESEEN COSTS FOR NEXT STEPS	<i>Costs for testing, costs for improving, for implementing, please provide summary assessment here and more details in following page</i>
PROJECT CONTACT	<p>Name</p> <p>Address, phone, fax</p> <p>Email/s</p> <p>Website</p>

Other comments:

III. ACTION PLAN

Please list all this general objectives and tasks that need to be accomplished in order to implement the outputs by potential users (from the questionnaire):

1. -ACTION 1:
2. -

<i>ACTION 1 NAME</i>
- OBJECTIVE: ACTION 1.1 – ACTION 1.2 –
- OBJECTIVE: ACTION 1.3 –
MONITORING INDICATORS FOR THIS ACTION
STATUS

<i>ACTION 2 NAME</i>
- OBJECTIVE: ACTION 2.1 – ACTION 2.2 –
- OBJECTIVE: ACTION 2.3 –
MONITORING INDICATORS FOR THIS ACTION
STATUS

ACTION x NAME

- **OBJECTIVE:**

ACTION x.1 –

ACTION x.2 –

....

- **OBJECTIVE:**

ACTION x.3 –

.....

MONITORING INDICATORS FOR THIS ACTION

STATUS

ANNEX 2: AGREEMENT WITH RESEARCH TEAM TEMPLATE

DATA USE AGREEMENT

This agreement is between :

XXX.....(1) represented by
.....(2), hereafter referred to as « the contractor ».

And

XXX.....(1) represented by
.....(2), hereafter referred to as « the contractor ».

Definitions

Product: innovative research results

Water RtoM: Water Research to Market is a project financed by LIFE+

ReMAS: Research to Market Assessment Strategy

Agreement context:

The Water RtoM project has set a goal to speed-up the transfer of water related research outputs to better implement the Water directives, and to public and private actors, scientists, and organizations financing research. To achieve this goal, the Water RtoM group of partners (OIEau, GWF, Amphos 21 and CFPPDA) :

- is setting a technological watch concerning research products close to markets,
- developing methods towards the evaluation of innovative research products (tools and methods related to the distance to achieving a marketable product);
- is preparing some research outputs towards their implementation in innovating organizations, through a close-knit relationship with research teams.

So as to encourage and favour the use of research outputs by end users, Water RtoM has defined an ambitious plan towards communication/data dissemination, innovative products and innovative organizations during trade fairs, whether national or European.

Water RtoM key facts :

- Around 50 products listed every year (150 for the duration of the project)
- 20 to 30 products analyzed per year through the ReMAS method
- 8 to 12 products per year that benefit from a market study
- 2 European trade fairs per year
- 5 national seminars per year
- 4 e-seminars per year
- A website (www.waterrtom.eu) and an e-fair.

Contractual provisions

The contractor

- Accepts the principle of the Water RtoM project, to valorise and reuse the product, with the aim to launch it on the market.
- Declares that he/she is sole owner of the data rights of intellectual property. The sentence "Source of the information: XXX" must be mentioned on every document, and on every research output.
- Grants authorization to :
 - analyze his/her results/outputs relatively to their distance towards being launched on the market,

- assess the missing steps towards an operational result,
- assess the risks for the “end user”
- Allows for dissemination of the results through events organised by Water RtoM, through the website, or the partners’ networks.
- Pledges to pass on reliable data, and to update, if needed, the information files about his/her products linked to Water RtoM.
- Keeps Water RtoM up to date on her/his actions taken with a link to the Water RtoM project.
- Pledges to answer to data requests made by those approved by Water RtoM

The contractor pledges to respect all the terms of use above-mentioned.

Partner :

- Pledges to inform « the contractor » about the advance of the Water RtoM project, to inform « the contractor » about the becoming of its product, to report on the headways linked to the project.
- Should the product lead to a « business case study », the OIEau pledges to use all means at its disposal to favour the dissemination of the product by other parties.
- Pledges to pass on contact details of interested parties/organizations.
- Pledges to respects the terms of use for the product, and to mention the legal aspects (intellectual property, copyrights...)

Duration of the contract

These terms of use concern the duration of the Water RtoM project, namely:

- Foreseen duration: 1 year, renewable
- Area concerned: Europe

Written in on:

By (1)

..... (2)

(1) Name of the organization (2) Name of the organization’s representative (3) Organization’s stamp