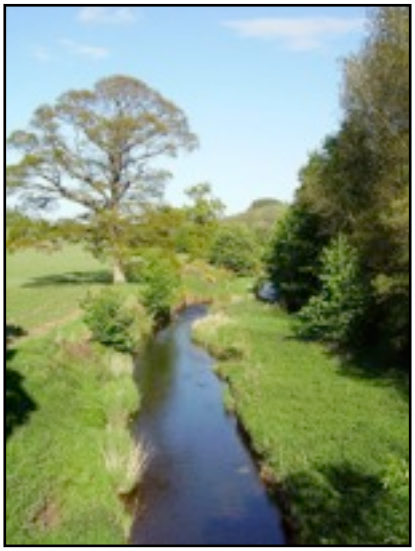
iwrm-net SCP Newsletter

European Water Community

The Final Year...

In early 2011 the IWRM-Net Scientific Coordination Project started to support the 6 research projects funded by the ERA-Net IWRM-Net following a decision by research funders to structure their calls in a way to better support the public policy dealing with water challenges. Specific criteria were set relating to stakeholders' involvement and dissemination with the aim to ensure the results of the research would support at the local level the implementation of the WFD. This is very close to one of the key message of the blueprint conference inviting water stakeholders to make more knowledge more easily available and the will of the European Commission to fund projects focussing on the operational transfer of research outcomes to the market.

Starting its last year, the SCP fits more than ever in this global picture where "everybody should find its size". In 2013, the SCP will provide the required effort to support the dissemination of the research results: a first round of webinars will start at the end of this month offering the opportunity to researchers to present their outcomes to a wide range of stakeholders.



Eye Water. Downstream from Howden Bridge : Richard Webb. (geograph.org.uk)

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WEBINARS

15 March 2013

Blue revolution within a green economy, Water2Adapt project, Jaroslav Mysiak, FEEM.

28 March 2013

Implementing ecosystem services approach at the local level: Expectations, barriers and insights, ESAWADI project, Catherine Wallis, ASCONIT

April 2013

Water, climate change and Agriculture. ICARUS project, University Ca Foscara.

May 2013

Water Cap and Trade (BRGM)

1. Introduction to the project
2. Presentation of the results

June 2013

An integrated model to predict abiotic habitat for application in climate change research and water management: IMPACT Project

September 2013

Environment Flow regimes and the impact of climate change on a European scale, CLIMAWARE project. Christof Scheider , University of Kassel

For more information regarding the webinars please visit www.iwrm-net.eu where we shall update the list of titles and the dates (which could be subject to change) and provide details on how to register to receive the link to the webconferencing system. (more info on page 2)

IWRM-NET AND EUROPEAN WATER COMMUNITY WEBINARS

The IWRM-Net SCP is now focusing on the dissemination of the project results to a wide audience. By using the concept of 'webinars' the SCP aims to allow the project coordinators a simple means of presentation and the target audiences a means to listen and ask questions about the research without the need for travel. Increasingly widespread, webconference technology is allowing us to share presentations to a broad range of people and The International Office for Water uses Adobe Connect Pro as its system for webconferences. Currently the dates are not all set but for people interested in joining the conferences we ask you to send an email to s.midgley@oieau.fr or n.amorsi@oieau.fr to register your interest. We shall then create a mailing list to keep you updated, provide instructions on how to use the system and closer to the date of each presentation you will receive a link to the online meeting room.

QUENTIN GAUTIER: THE DIRECTORATE FOR RESEARCH AND INNOVATION, FRENCH MINISTRY FOR ECOLOGY, SUSTAINABLE

Through its involvement in the IWRM Net ERA Net and its continuation through the SCP, the French ministry for Ecology, Sustainable Development and Energy seeks to contribute to bridging the gap between researchers and stakeholders regarding water resource management. Part of this dissemination already occurs within the project teams through the contacts with local and national partners. However, this may not be enough and where results are striking, or require to be discussed, focused dissemination actions need to be undertaken. Policy briefs and written dissemination certainly are a good way to share the results, but we are in favor of putting directly in contact scientists and local managers so that practical recommendations can emerge. For the restitution of the ESA-WADI project at the Ministry late December 2012, we gathered people from the Water and Biodiversity Directorate, the service for economics studies at the ministry and the National Office for Water and Aquatic Environments (ONEMA). Fruitful discussions set up a strong basis for further dissemination of the scientific reports and synthesis report. In this regard, we strongly support the option put forward by the SCP of organizing "Webinars" before the summer. We think it's a good opportunity to share the knowledge associated with each the projects - at little cost. We look forward to seeing the results the six research projects of IWRM Net 2nd Call.

THE CLIMAWARE PROJECT

The main objective of the ClimAware project is to analyse the impacts of climate change on freshwater resources at the continental and regional scales and to identify efficient adaptation strategies to improve water management for various socio-economic sectors. The results of the project will be used to develop integrated measures for good freshwater management. The research approach considers both European as well as regional perspectives.The European modelling provides an overview of continental water resources under changing climate and socio-economic conditions considering different scenarios.

A north-south divide is obvious for the change in average annual water availability of the 2050s. In northern Europe the change in water availability is rather positive while all other regions, except the region around Azerbaijan and Armenia, present a negative change in water availability. The strongest reduction of water availability is anticipated for the Mediterranean region (Southern Europe and the Near East) as well as in the southern region of Eastern Europe, around Romania. With regard to the different climate scenarios used, the model results show that the differences between the emission scenarios are relatively small since they only start to diverge in the second half of the century.

The projections of water stress for the 2050s, represented by the withdrawal-to-availability ratio in summer, indicate severe water stress in Southern and Western Europe. Compared to the B1 scenario, the A2 scenario shows a wider expansion of areas under water stress with a high share of Eastern Europe under mid water stress.

The German case study "Hydromorphology" focuses on the lower Eder, which starts downstream the Ederdam and flows into the Fulda near Kassel located in the middle of Germany as part of the Weser catchment area. By simulating different scenarios the influence of climate change on reaching the "good status" according to the WFD, regarding the hydromorphological reference conditions is analysed. The objective is to examine on the lower Eder river section the dependence of different abiotic factors such as water depth, flow velocity, shear stress and wetted areas on changing water discharges. The statistical parameters –standard deviation and coefficient of skewness - were calculated for different discharge situations. The resulting statistical distributions of the empirical data from the hydraulic modelling are compared with the parameter-based distributional functions according to Gauß and ln-Gauß. It can be seen that in the free flowing reach the influence of discharge is less intense than in the backwater reach. This may be explained by the low dependence of the more or less constant water table due to the weir. In a next step restoration measures according to the WFD were implemented in the model and the hydromorphological parameters are analysed again, now to compare the results and analyse the effectiveness of the WFD-measures under changed climate conditions.

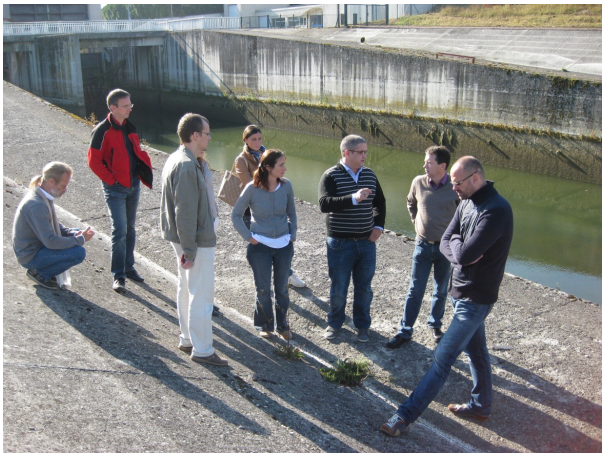
The objective of the French case study "Dam Management" is to provide the managers of the Seine River basin reservoirs with an analysis framework to evaluate the possible consequences of climate change on the basin hydrological behaviour and to assess possible adaptation strategies they could consider in the future. The aim of this study is to develop future scenarios linking the impacts of climate

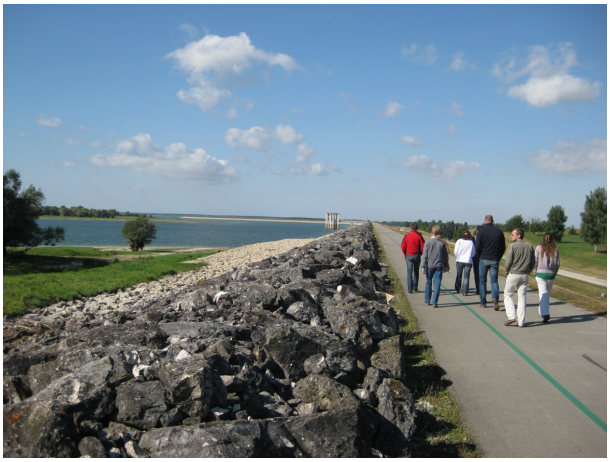
Meeting in Paris/ Troyes

This year the CLIMAWARE project meeting took place in September in Paris and Troyes (France) at Seine Grands Lacs (www.seinegrandslacs.fr). First interesting intermediary results from the three case studies as well as the progress of work were discussed between the partners from France, Italy and Germany. To give an impression of the French project area, Seine Grands Lacs organised a visit of the Seine reservoirs, the subject, their case study deals with. It was a very interesting and informative field trip (see images on next page).

CLIMAWARE CONTINUED

change on water resources and the expected change on the uses and on the management of the system. In terms of water resources, most simulations (about 90%) indicate a marked decrease of the average annual discharge, between 15% and 40% for 90%, between the 1962-1991 and the 2046-2065 periods. This is the most consistent result of the study. Besides, runoff simulations indicate a strong decrease of low flows, even higher than for mean annual flow. In terms of 0.10 percentile of the flow duration curve (Q10), 90% of simulations indicate a decrease between 0% and 35%, which is a quite consistent result, especially for downstream stations. Current work focuses on the implementation of dam management in the modelling chain. An integrated hydro-economic modelling tool – applied to the Apulia region (Southern Italy) – is proposed in the Italian case study "Agricultural Water Use" to define the water balance components at regional scale, and the water use in the agricultural sector. The hydrological model allowed to assess the crop irrigation requirements and the water availability, expressed in terms of river flow, groundwater recharge and abstraction, while the integration with the economic model allowed simulating the real farmers' decision process in response to any changes both in the constraints and in the boundary conditions. The tool provides a comprehensive information framework including: water balance components, crops irrigation requirements, farmers choices in terms of land use and irrigation techniques, economic results (costs and incomes), environmental impacts. Climate, land cover and soil datasets have been implemented as thematic maps into a GIS based model, and integrated with the main economic parameters at farm and crop level. The simulated results obtained for the baseline scenario show that the total cultivated land is equal to 24,444 ha and the irrigated land amount to 8,200 ha in the entire Apulia region. The cropping pattern includes cereals (33%), forages (18%), vegetables (8%), olive and grape (24% and 6%, respectively). The total irrigation water demand for the whole area is equal to about 16 Mm^3 which corresponds to average water consumption per irrigated hectare equal to 1,961 m^3. The most water demanding crops are some vegetable such as tomato, 17% of the total water consumed, artichoke, 12% and potato, 9%, and permanent crops such as peach, 10% and grape, 20% of the total water consumed by agricultural sector. The maximum demand for irrigation water is in May when about 540 m^3 are consumed for each irrigated hectare.





In a next step, future scenarios of climate change will be simulated and their impacts on water balance taken into account. The obtained results will aim at making better use of water resources and at addressing the policies for an efficient water management under severe drought conditions that are likely to occur in the region according to climate change projections.

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DIALOGUE ON WATER RESOURCES FROM RESEARCH TO LIVELIHOOD

The ICARUS and Water2ADapt projects came together as part of a recent event in Venice, Italy. The workshop focused specifically on empirical evidences, operational tools, technological options, lessons learnt and their potential for transferability, in the attempt to identify avenues for implementing the principles and guidelines delivered by the international events mentioned above. The workshop, organised in collaboration with Ca' Foscari University and FAO, which hosted research and international organisations, academics, experts, practitioners, and policy-makers from the Mediterranean region, explored strengths and bottlenecks in the implementation process of innovative policies to deal with water scarcity in the Mediterranean. In order to maximise the knowledge exchange nature of the event, a setting was preferred with few presentations by key participants and most of the time dedicated instead to discussion. In particular, two brainstorming sessions were organised. The first delved on topics addressed by the Water2Adapt project, namely water policies and measures to deal with water scarcity in a changing Mediterranean; whereas the second day's discussion focused on transferring and implementing technical knowledge for water security and food production in the Mediterranean Basin, more closely related to the ICARUS project, which develops specific methodology and tools for strategy formulation, assessment, and choice- making for implementation.

from left to right - Dr. Massimo Caneva, Italian Ministry of Foreign Affairs; Dr. Nicola LaMaddalena, Mediterranean Institute; and Dr. Pasquale Steduto, FAO.

WATER2ADAPT PROJECT

The recent EU Water Policy Review, the Blueprint to Safeguard Europe's Waters (EC, 2012) has attested little progress towards achieving Europe's environmental objectives, including drought preparedness.

The Water2Adapt project has analysed drought events in three representative river basins in Spain (Ebro), Italy (Po) and Germany (Weser). All three river basins are evidenced as being water stressed, despite the arguably abundant water resources available. The analysis focussed on the economic losses, social hardship and rural/urban resilience to water scarcity and drought. In Spain, the case sites include the rural district Álava of the Basque Autonomous Country (BAC) and its capital city Vitoria (in Basque Gasteiz). In Italy, the rural case site is confined by the district Piacenza situated in the Region Emilia Romagna (RER), and the basin of the Trebbia river – a right tributary of Po river. Parma and Ferrara - capitals of the homonymous districts of the RER – were chosen as urban case sites for their specific exposure and vulnerability to droughts. In Germany, the Heidekreis and the Lower Saxony's capital town Hannover were chosen as rural and urban site respectively. Ebro RBD, the analysis focussed on the 1988-1990 drought, one of the three most significant drought spells in BAC since 1944. The Po RBD, normally water rich, experienced severe droughts the 2000s, in particular in 2003 and 2006-2007. The Weser RBD analysed the 2003 event, one of the worst drought spells on record.

The project partners have first selected the significant drought events in the reference river basins and conducted a critical review of the existing knowledge about their economic and social impacts. As next the teams have conducted an analysis of the drought response policies (including water governance) and measures, and identified the amplifying and attenuating factors of the impacts. Finally, the future gaps between water availability and demand was assessed and climate adaptation policies, suitable to fill the gap, identified.

BACK PAGE BLOG -

PHILIPPE QUEVAUVILLER (DG-RTD)

SCIENCE-POLICY INTERACTIONS AT EU, NATIONAL AND REGIONAL LEVELS

The question of an efficient transfer of scientific knowledge has been extensively debated over the last 10 years and is now becoming acute. Progress in interfacing science and policy has been made in the water sector through experience in the STEPWISE, STREAM, IWRM-Net project and this might be used to reflect on what could be developed as a generic approach to improve science-policy interactions in the future for the whole environmental policies. Now we need to focus on the question of how effective working relationships could be established and maintained at different governance levels. Besides the "horizontal" aspect (relationship among science and policy), there is a need to consider the "vertical" aspect, that is the way information may flow from EU to Member State and regional levels. At EU level, initiatives have been developed to support the implementation of environment framework policies, in particular the Common Implementation Strategy (CIS) started in 2001 to support the implementation of the Water Framework Directive 2000/60/EC and parent legislations, in order to ensure the coherent implementation of policies through the clarification of methodology and enable a common understanding on technical and scientific implications of the policy milestones. Expert groups of Member States and stakeholder organisations as well as scientists, develop guidance documents providing recommendations to improve policy implementation. An improved flow of scientific information is however considered desirable and in this respect, a 'Science-Policy Interface' initiative has been jointly developed by the EC DG Research & Innovation and DG Environment as an ad-hoc activity within the CIS. The EU level may hence operate as a facilitator for highlighting contributions from research (access to knowledge) through a multidisciplinary and multisectoral exchange platform such as the CIS – This is the 1st level at which research transfer is to be orchestrated. A step forward would be to ensure regular contacts among "knowledge providing" services, including programmes/ projects funded by the European Commission, in particular Life+ and INTERREG IVB,, since there are obvious links between research, demonstration, capacity-building, networking, education and international cooperation that are not operationally established.

"the views expressed in this paper are purely those of the author and may not in any circumstances be regarded as stating a formal position of the European Commission".

At national level, there is a clear need to establish science-policy interfacing functions at Member State level (Environment ministries or agencies) that would enable to improve the transfer and the implementation of research results. Some Member States have already recognised this need, e.g. the "Evidence Department" at DEFRA (UK), the ONEMA (FR) etc. At this level, science-based technical guides matching the above mentioned guidance documents (developed under the CIS) should describe practical implementation aspects of relevant research outputs. This science "digestion" work should be associated to efforts of translation of the documents in the Member State's languages. Member States should hence act as a 2nd level toward research implementation. At regional level, other "relays" are needed to ensure that information from EU and MS levels are known, and exchange platforms have proved their utility in this respect (e.g. ECOBAG in the Adour-Garonne region, SNIFFER in Scotland/ North Ireland etc.). These platforms have an essential role in implementing knowledge made known by Members States and the EU and would represent the 3rd level at which the practical implementation takes place. At this level, practical works should be undertaken to demonstrate the applicability of research results (new methods, tools, technologies, models etc.) which have been highlighted as potential support to policy implementation (through EU-Member States links and then through Member States to the Regions).

The chain of actions requires a high level of coordination at all levels, and access to appropriate databases. INTERREG IV, LIFE +, FP7 exist within the respective DGs, but more interactive access is desirable, e.g. in the water sector the WISE-RTD webportal providing access to water research information in support of the Water Information System for Europe (WISE).