

Water challenges for a changing world

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EDITORIAL

It is well known that water is essential, both for drinking and the production of healthy food. There is no doubt that water resources are also necessary for energy production, tourism, transport, rural development, fisheries and other very important ecosystem services. However could one ever imagine that water can also play music? Yes, this is possible. Click [here](#) to appreciate the excellent capabilities of water as a skilled musician. This extraordinary performance happens many times a day in the wonderful garden of the Renaissance *Villa d'Este* in Tivoli near Rome, built in the mid 1500s. The music of the so called *Organ Fountain* is provided by an hydraulic mechanism. Water under pressure in the pipes pushes air into chambers to produce the notes. This process is totally automatic. It is astonishing that this sophisticated device was created so long ago to fascinate the distinguished guests of the Cardinals Ippolito and Alessandro d'Este.

THE WATER JPI IMPLEMENTATION PLAN



After the publication of the Water Joint Programming Initiative *Strategic Research and Innovation Agenda* (SRIA), in its version 0.5 released on 30 May 2013 and version 1.0 adopted on 30 June 2014, the Governing Board have now also approved the WATER JPI [Implementation Plan](#) for the period 2014-2016. This linked planning document focuses on activities to be performed by the members of the Water JPI and on other proposed actions to be implemented by the European Commission.

All these activities have been classified into three types according to their goal: **interfacing with society; empowering research, development and innovation (RDI) actors; and improving the efficiency of RDI programmes.**

Nine instruments have been designed to implement the WATER JPI activities with the aim of maximizing the societal impact of its SRIA through joint calls for projects proposals, strategic and exploratory workshops, and alignment of national RDI programmes. In particular, this Implementation Plan focuses on the development of the Water JPI; presents water RDI priority themes to be implemented; permits forward planning to agreed joint activities; lists specific goals for the two-year period; and outlines the effort to be deployed. It also informs policy makers, RDI programme owners and managers, Water RDI performers and society at large on how the Water JPI will tackle water challenges in the period 2014-2016. In addition, it will provide a guide for researchers and innovators interested in participating in the Water JPI activities.

The Water JPI Implementation Plan stands in parallel to a number of Horizon 2020 work programmes, in particular that of Societal Challenge 5: *Climate Action, Environment, Resource Efficiency and Raw materials*. The WATER JPI Implementation Plan for the period 2014-2016 will be officially presented in Brussels on 21st October 2014, together with the Strategic Research and Innovation Agenda ([SRIA](#) version 1.0).

PROGRESS ON WATER JPI ACTIVITIES

We will have very busy days in Brussels next week. After the official presentation of our Strategic Research and Innovation Agenda and Implementation Plan in the morning of Tuesday 21st October, other meetings are scheduled for the afternoon and during next day. Water JPI partners will discuss next steps to be taken to strengthen the cooperation outside Europe especially with those countries of interest which were selected and examined from the point of view of water research and innovation, funding agencies and possible contacts for joint activities.

On 22 October the European alignment of national water RDI activities, challenges, opportunities and recommendations for future actions will be discussed in order to boost our contribution to these efforts, in line with work by the High Level Group for Joint Programming ([GPC](#)) across the JPIs.

A work plan to identify additional water RDI needs, objectives, themes and subthemes with the aim of integrating and updating the Water JPI Strategic Research and Innovation Agenda was prepared by the coordinator of WP3 of the *Coordination and Support Action WatEUR*. All available sources of information on water research and innovation will be reviewed and taken into consideration for the writing-up of the version 2.0 of the SRIA; a second consultative workshop will be organized for April or May 2015.



In November, the 5th meeting of the members of the Governing Board of the Water JPI will be hosted by our Norwegian partners in Oslo (11-12 November). The first day's discussions will be focused on the new governance model designed by an ad hoc Task Force, composed by representatives of some members countries, which is in charge of exploring new candidacies to lead the Water JPI from next year.

The election of the new leadership is scheduled for the second day, together with the decisions on a more efficient governance model, to be adopted in 2015, in addition to the future activities and meetings to be scheduled in the coming months.

In the morning of 11 November a meeting focused on the water RDI mapping activities within WP2 of WatEUR project will examine the information collected and the elaboration of the report to be presented to the European Commission.

FOCUS ON WATER RESEARCH AND INNOVATION



in Spain

There is not a specific programme for water RDI, but water issues are funded through the *State Plan for Research, Development and Innovation*. Other Programmes related to Innovation, applied research or International activities devote additional funds to water issues. The National Plan has always represented the major opportunity for RTD funding at the national level, although in the last 20 years the research funding capacity of the regional governments has increased. [Read more](#)

RESEARCH HIGHLIGHTS

A Dynamic Metabolism Model for Urban Water Services



Urban water services are challenged from many perspectives and different stakeholders demand performance improvements along economic, social and environmental dimensions of sustainability. In response, urban water utilities systematically give more attention to criteria such as water safety, climate change adaptation and mitigation, environmental life cycle assessment (LCA), total cost efficiency, and on how to improve their operations within the

water-energy-carbon nexus. Venkatesh et al. (2014) collaborated in the development of a "Dynamic Metabolism Model" (DMM), developed for generic use in the sustainability assessment of urban water services, and it has been initially tested for the city of Oslo, Norway, for the analysis of the time period 2013–2040. The purpose was to adopt a holistic systemic perspective to the analysis of metabolism and environmental impacts of resource flows in urban water and wastewater systems, in order to offer a tool for the examination of future strategies and intervention options in such systems. The research demonstrates the effectiveness and usefulness of the DMM, as a decision-support tool for water-wastewater utilities. The scenarios considered and interventions identified do not include all possible scenarios and interventions that can be relevant for water-wastewater utilities. More information is available [here](#).

The 10 Golden Rules for Flood Management



A paper published in the "International Journal of River Basin Management" provides an overview of the emerging good practices in Strategic Flood Management including an analysis of the flood events that have induced new approaches to flood risk prevention and a closer examination of the aims and characteristics of SFM. The full text of this paper is provided [here](#).

Report on Wastewater Treatment Systems



The research Report "Management Options for the Collection, Treatment and Disposal of Sludge Derived from Domestic Wastewater Treatment Systems" is available on the Irish EPA website to download from [here](#). EPA-funded research generates a scientific base to support environmental protection.

There are an estimated 497,000 domestic wastewater treatment systems (DWWTS) in Ireland. DWWTS which are may not be properly maintained and operated, hence posing a potential risk to human health and impact negatively on the environment. The periodic removal of sludge from a DWWTS is necessary, to ensure adequate treatment of the wastewater and the reduction of their impact on the environment. The report found that 85% of all DWWTS are over 25km away from existing sludge reception facilities with spare capacity. In the report it is suggested that alternative recycling or disposal options, such as recycling to energy crops, conversion to fertilisers, incineration, pyrolysis and other feasible disposal routes may need to be adopted on a significant scale, in order to deal with the volumes of municipal and the additional DWWTS sludge produced nationally. The report also puts forward a number of recommendations with regard changes to legislation, increased investment in infrastructure and desludging rotas etc.

Water Key Priorities Identified by EU Water Alliance



A joint position paper of the European main water-related network organisations was addressed to the new president of the European Commission and designated Commissioners for research and innovation, environment, agriculture, regional policy, internal market and industry, health and food security, energy, climate action, digital economy, international cooperation and development, humanitarian aid and crisis management, transport and space, maritime affairs and fisheries.

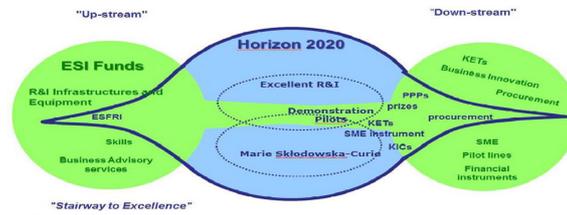
This [manifesto](#) of the European Water Alliance composed by ACQUEAU, Aqua Europa, Aqua Publica, EurAqua, EUREAU, EWA, EWP, Netwerc h2o and WwsTP promotes a more informed and structured policymaking discourse on water key priorities which are vast and crosscutting issues concerning many fields of public policies for societal and economic development of Europe

The Rise of Hydro-Diplomacy

A new study for strengthening foreign policy for transboundary waters was launched during an event on water diplomacy held during the World Water Week 2014 in Stockholm last September, and promoted by the German research centre Adelphi. The full report which calls for more engagement of foreign policymakers on water management is available [here](#).

Synergies Between EU Funds

The European Commission has published new [guidance](#) to help national and regional policy-makers achieve more synergies between the different EU funds in support of innovation and competitiveness. The document spells out the complementarities between the European Structural and Investment Funds with around 100 billion on innovation related themes, Horizon 2020, COSME, Erasmus Plus, Creative Europe and the digital services part of the Connecting Europe Facility.



State of the Innovation Union 2014

The Innovation Union is placed at the heart of the Europe 2020 strategy and aims to increase Europe's competitiveness. A [report](#) of DG Research and Innovation summarizes progress at European and national levels towards achieving smart, sustainable and inclusive growth through RDI activities. Member States' [profiles](#) are also published.

Progress report on European Research Area

The European Commission has released last September a [communication](#) reporting an assessment of progress made in the ERA priorities in all EU member States and some Associated Countries.

OPPORTUNITIES

Vacancies at JPI Climate Secretariat



The Joint Programming Initiative on climate will move its central secretariat to Brussels and is looking for the support of two science officers. Deadline for application is 23rd October 2014. Click [here](#) for details.

Nominations for International Prize on Water



The Prince Sultan Bin Abdulaziz international awards programme established in 2004 encourages innovative water research and applied science. Deadline for receiving nominations for grants is 31st December 2015. See details [here](#).

International Water Leadership Programme



Applications are open for this programme supported by UNESCO-IHE aimed at developing knowledge and skills of emerging leaders in the water sector. For more information click [here](#).

Consultation on Bioeconomy in Europe

The Standing Committee on Agricultural Research (SCAR) launched a survey to identify emerging research questions and to anticipate future innovation challenges that can support the implementation of the Bioeconomy Strategy in Europe. The questionnaire is available [here](#).

Abstracts Submission Extended for IAHR Congress



The International Association for Hydro-Environment, Engineering and Research has prolonged the deadline to send abstracts for its 36th world congress to be held in the Hague next year. The new [deadline](#) is next 4th November.

UPCOMING EVENTS

EURO-INBO 2014



The 12th international conference of the European Group of Basin Organizations will be held in Bucharest from 12-15 November 2014. The event will focus on the implementation of the Water Framework Directive. Click [here](#) for more information.

EWA conference on Urban Water



The European Water Association has organized its 10th [conference](#) in Brussels on the theme "Water in the cities". The event will be held from 17- 19 November 2014.

Infoday on Societal Challenge 5



An event to inform about the 2015 Calls of Horizon 2020 Societal Challenge 5 "Climate action, environment, resource efficiency and raw materials" will take place in Brussels next 17th November 2014. See the [programme](#) of this Infoday open to all interested people.

Joint EurAqua AND WssTP event



A [workshop](#) on water-related ecosystems services organized by the Norwegian Institute for water research and the European networks EurAqua and WssTP will take place in Oslo on next 18-19 November.