

## NEWSLETTER WATER JPI NEWS 02 | MARCH 2018

# **PROGRESS ON WATER JPI**

WATER JPI 2018 JOINT CALL

The Water JPI launched the 2018 Joint Call for collaborative transnational research on the theme "Closing the Water Cycle Gap

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# DROPLETS

#### SAFER DRINKING FOR ALLA EUROPEANS

The right to access essential services of good quality, including water, is one of the principles of the European Pillar of Social Rights

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EVENT

PUBLICATION OF PRIMA CALLS FOR PROPOSAL 2018

PRIMA, the new Partnership on Research and Innovation in the Mediterranean Area, has

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19-21 MARCH, BRUSSEL, BELGIUM, WATER MARKET EUROPE

Water Market Europe is the new event cycle that WssTP has set up to create a unique innovation

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# **PROGRESS ON WATER JPI**

## **2018 JOINT CALL** WATER JPI 2018 JOINT CALL

The Water JPI launched the <u>2018 Joint Call</u> for collaborative transnational research on the theme "Closing the Water Cycle Gap – Sustainable Management of Water Resources". Proposals for this Joint Call are expected to address at least one of the following themes: 1. enabling sustainable management of water resources; 2. strengthening socio-economic approaches to water management; 3. supporting Tools for Sustainable Integrated Management of Water Resources.

1st stage – Deadline for submission of preproposals: 24 April 2018, 17h00 (CEST) 2nd stage – Deadline for submission of full proposals: 18 September 2018, 17h00 (CEST). Two<u>webinar sessions</u> for interested applicants were organised on 12 March 2018 in order to present the scope of the call, research topics, and guidelines for applicants.

## 2ND WATER JPI CONFERENCE

The 2nd Water JPI Conference will be held in Helsinki on 6-7 June 2018. The aim of the conference is to attract some 200 experts in emerging pollutants to meet and discuss common challenges and share their recent discoveries and knowledge. By bringing together stakeholders from research and industry as well as policy-makers and relevant organisations, the conference contributes to filling knowledge gaps regarding the environmental behaviour



of pollutants and their effects on human health. Specific topics to be covered include development of analysis and detection systems, water treatment opportunities, impacts of wastewater reuse on human health, new water management practices and risk predictions. Continue in the <u>focus section</u>.



# Water JPI Conference, Photo competition

Take a picture of you research!! All partners and researchers of the funded projects within the Water JPI are invited to participate to the photo competition launched under Water JPI by submitting their own iconic photographs representing the main phases or the researches they're involved in. The aim is to communicate through an outright language the scientific topics of the Water JPI and the knowledge and results produced within the research developed. The submitted photos will be on show during the 2018 Water JPI Conference where the top 3 photos will be nominated. All the pictures submitted will be used in the framework of the Water IPI communication activities and tools such as website, Newsletter, leaflets, etc, in accordance with the copyright terms of conditions. All partners and researchers will be informed on the initiative and more information will be shortly available on the Water IPI website.

# DROPLETS

## SAFER DRINKING WATER FOR ALL EUROPEANS

The right to access essential services of good quality, including water, is one of the principles of the European Pillar of Social Rights. The recent legislative proposal aims to guarantee this right and thereby responds to the first-ever successful European Citizens' Initiative, "Right2Water", that that gathered 1.6 million signatures in support of improving access to safe drinking water for all Europeans. In addition, this proposal seeks to empower consumers ensuring that water suppliers provide consumers with clearer information on water consumption, on the cost structure as well as on the price per litre allowing a comparison with the price of bottled water. This will be contributing to the environmental goals of reducing unnecessary plastic use and limiting the EU's carbon footprint, as well as to the achievement of the Sustainable Development

Goals. For more information: Europa

#### EUREAU: 10 FUTURE BIG CHALLENGES FOR THE WATER SECTOR

The next 10 years will be full of challenges in the water sector. According to EurEau here is is the top 10 list: 1. Protecting water as vulnerable resource; 2. Building an effective strategy to minimize the presence of micropollutants in the environment; 3. Increasing the public understanding of the water sector; 4. Responding to the growing impact of climate change on water; 5. Giving water its value in circular economy; 6. Increasing the resource efficiency in the water sector; 7. Fostering sustainable economic growth and creating jobs; 8. Setting the right price for water services; 9. Managing long term assets in a fast changing environment; 10. Reinforcing the resilience of water services to security risks.

## HORIZON 2020 IN FULL SWING THREE YEARS ON KEY FACTS AND FIGURES

The recent interim evaluation of Horizon 2020 confirmed that the programme is highly successful and well on track to achieve its objectives: stimulating excellent science, building industrial leadership, and providing solutions to the challenges that our society faces.

The <u>publication</u>, by Directorate-General for Research and Innovation, provides a snapshot of the programme's main achievements after the period of implementation (2014-2016). The results and project examples illustrated show the enormous potential in Europe for excellent research and innovation, and how in turn this can have a real impact on our economy and society.

#### SCIENCE FOR ENVIRONMENT POLICY WATER MANAGEMENT ON FARMS ASSESSED BY NEW TOOL, FLANDERS

The article, published on "Science for Environment Policy", shows that researchers have developed a new model that highlights how agricultural practices impact on water availability in the wider landscape. The model, AquaCrop-Hydro, could be used to inform agricultural management decisions and policy related to water and land use, to ensure best allocation of water resources. Such tools are not only useful currently, but will be especially important in future in areas where climate change impacts on water availability and affects crop productivity.

#### FINAL REPORT SUMMARY WATER4CROPS

Through its 7th Framework Program the European Commission on 2012 provided about six million euro in co-fundingto the project "Integrating biotreated wastewater reuse with enhanced water use efficiency to support the Green Economy in EU and India" whose acronym is "Water4Crops" (W4Cs). The main objectives of W4Cs can be summarized as follows: a)valorizing agro-food-industry wastewater by recovering and/or producing valuable substances; b) increasing water availability by treating and reusing treated wastewater in agriculture; c) saving water in agriculture by improving water use efficiency (WUE) at field level through: improved agronomics, plant breeding and locally adapted innovative irrigation strategies and techniques; d) enhancing stakeholders participation by their real involvement in co-creation processes with the help of two innovative tools developed just in W4Cs. Here the final report summary.

### EXPLORING SYNERGIES BETWEEN PUMPED STORAGE HYDRO AND RENEWABLES

Significant potential exists for pumped storage hydro facilities to meet grid flexibility needs and energy resources, such as wind and solar.





The <u>report</u> shows that there are synergies between pumped storage hydro sites and optimum locations for wind and solar resources. The few projects already underway demonstrate the benefits of pairing these technologies. This special report showcases those projects and the place pumped storage hydro holds in the energy storage conversation.

## **BINGO PROJECT**

The Horizon 2020 project <u>BINGO</u>, Bringing INnovation to onGOing water management - a better future under climate change (2015-2019), aims at providing practical knowledge and tools to end users, water managers, decision and policy makers affected by climate change to enable them to better cope with all climate projections, including droughts and floods.

#### SEDIMENT TRANSPORT USING WATEM/SEDEM

The JRC in collaboration with University of Basel and Universite Cathilique de Louvain quantify the potential spatial displacement and transport of soil sediments due to water erosion at European scale. The greatest amount of gross on-site erosion as well as soil loss to rivers occurs in agricultural land (93.5%).

By contrast, forestland and other semi-natural vegetation areas experience an overall surplus of sediments which is driven by a re-deposition of sediments eroded from agricultural land.

Here is all of information.

# **OPPORTUNITIES**

## PUBLICATION OF PRIMA CALL FOR PROPOSALS 2018

PRIMA, the new Partnership on Research and Innovation in the Mediterranean Area has preannounced the Section 1 and 2 Call 2018. The calls for proposals are part of the <u>PRIMA Annual</u> <u>Work Plan 2018</u>, which covers the priorities described in the PRIMA Strategic Research and Innovation Agenda (<u>SRIA</u>) under the PRIMA thematic areas.

Here follows the topic of the calls:

• Call <u>SECTION 1</u>: Management of water, Farming system, Agro Food Value chain: Deadline: Stage 1 Pre-proposals - 17th April, 2018; Stage 2 Full proposals - 15th September, 2018.

• <u>Call SECTION 2</u>: Multi Topic.: Deadline: Stage 1 Pre-proposals - 27th March, 2018; Stage 2 Full proposals - 4th September, 2018.



Water

### 7-30 NOVEMBER 2018, FRANKFURT, GERMANY, INDUSTRIAL WATER 2018

Industrial Water conference and exhibition is the biennial platform for all experts in industrial water management, from applied research, technology development, application - solution providers and industrial water users.

The topics of the conference are: from raw water to waste water treatment; from sensoring to digitization in industrial water management; from alternative water resources to zero liquid discharge and integrated management.

It is possible to <u>submit</u> contributions to the congress until 26 March 2018.



# **EVENTS**

## 21 MARCH 2018, BRUSSEL, BELGIUM, WATER MARKET EUROPE

Water Market Europe is the new event cycle that WssTP has set up to create a unique innovation and business environment, where state of the art water knowledge and research results can meet with market actors within and outside the water sector to create value and new business opportunities. Water Market Europe's main edition is hosted in spring every year but smaller editions of WME are being organised during the whole year, back to back to other conferences, trade fairs and conventions. <u>Here the agenda</u>.

## 21 MARCH 2018, PARMA, ITALY, LABIRINTO D'ACQUE INTERNATIONAL CONFERENCE

The University of Parma, in cooperation with the United Nations Commission for Hydrology of the World Meteorological Organization, World Water Assessment Programme (WWAP) of UNESCO, Italian National Institute for Environmental Protection and Research and Po River Basin District Authority announced the first edition of the Labirinto d'Acque International Conference that will be held at the Labyrinth of Franco Maria Ricci near Parma on the occasion of the UN-Water World Water Day celebrations.

The international leading actors will be recurrently convened in the labyrinth to address the challenge of the century: the Global Water Crisis and its Connections with Climate Change, Sustainability, Innovation.



The conference will be followed by three days of cultural events open to the public that represent the Italian focal point for the UN-Water World Water Day celebrations.

#### 22 MARCH 2018, WORLD WATER DAY 2018

World Water Day, on 22 March every year, is about focusing attention on the importance of water. <u>Nature for Water</u> is the theme for World Water Day 2018, focusing on how we can meet the water challenges of the 21st Century by applying nature-based solutions.

#### 11-12 APRIL 2018, SUNTEC, SINGAPORE, INTERFLOOD ASIA CONFERENCE

The first InterFLOOD Asia conference will be dedicated to the technical, engineering and financial solutions needed to mitigate and manage the risks and impact of flooding, and the potentially catastrophic consequences for life, business and the economy. The conference overview is shown here.



### 15-17 APRIL 2018, PARIS,FRANCE, GLOBAL WATER SUMMIT 2018

The <u>Global Water Summit</u> is an important event, attracting high-level executives from industry, municipalities and international water companies; the Global Water Summit gives the opportunity to connect with industry and companies. The event will focus on how crosscutting issues emerging from the boundaries of the sector may drive performance and generate new opportunities for businesses that are ready to build and engage with the new models and

stakeholders. Click  $\underline{here}$  more information.

## 02-05 MAY 2018, SOUSSE, TUNISIA, 3RD ICIEM 2018

The Committee of International <u>Conference</u> on Integrated Environmental Management for Sustainable Development (ICIEM) programme solicits fundamental or applied research papers on the following topics: a) environmentally sustainable innovative approaches and methods; b) water resources; c) pollution prevention strategies; d) environmental and health risk assessment.

## 23-25 MAY 2018, ROME, ITALY, SLUDGE MANAGEMENT IN CIRCULAR ECONOMY (SMICE)

This<u>event</u> is part of the IWA Specialist Group on Sludge Management (SGSM) conference series, conceived as an international forum discussing state-of-art, practical applications and problems around sewage sludge.



Europe is now world promoter for the transition from the linear to the circular economy. Six new directives are about to be approved by the European Parliament and this will drive Member States to the adoption of new strategies and politics to maximize waste recycling. One of the objectives of the Conference is to give answer to questions like "it is possible to adopt this policy also in sludge management?"

#### 14-17 OCTOBER 2018, LISBON, PORTUGAL, 6TH PARTICLES IN EUROPE CONFERENCE

The Particles in Europe (PiE) conferences are typically 3-day gatherings of scientists and engineers working with water for research or monitoring. This <u>conference</u> focuses on measurement, dynamics, impact and other scientific or monitoring implications of particles in water – coasts, ports, harbours, streams, rivers, sedimentation in hydropower.

Particle in Europe, or PiE, is a bi-annual conference on the measurement, monitoring, impact, and managing of in situ particle size and concentration in the aquatic environment. The meeting is sponsored by Sequoia and the Instituto Hidrografico Marinha of Lisbon, Portugal. Specialists from many fields but with a common interest in particles in water attend in an intimate, informal environment and exchange ideas on phenomena, dynamics, and technologies. PiE brings together some of the world's experts in studies on particles in water. The presentations cover dynamics, measurement, monitoring, and impact of particles in oceans, ports, coasts, rivers, lakes, streams, and wastewater





#### FOCUS ON 2ND WATER JPI CONFERENCE

The 2nd Water IPI Conference will be held in Helsinki on 6th -7th June 2018. The aim of the international conference is to attract some 200 experts in emerging pollutants to meet and discuss common challenges and share their recent discoveries and knowledge. The conference is targeted at both researchers and end-users, especially policy-makers. Come and contribute towards reaching our common goal of developing safe water systems for citizens! Millions of Europeans receive high-quality drinking water every day. However, the provision of safe water for drinking purposes is threatened by, for instance, the improper disposal of chemicals, animal and human waste, pesticides, emerging pollutants and emerging risks from "established" pollutants, aged water supply infrastructures, sub-optimal water management, and natural hazards.

"Emerging pollutants in freshwater ecosystems" is a very topical theme. The two-day conference will include keynotes and presentations about, for instance, what kinds of pollutants threaten our drinking water and how chemicals and pesticides end up in the water cycle. The programme also includes topics such as the effects of pollutants on ecosystem function and human health as well as

## The 2<sup>nd</sup> Water JPI Conference Emerging pollutants in freshwater ecosystems

6–7th of June, 2018 | Helsinki, Finland





innovative methods for monitoring and remediation. A subject of special interest will be the announcement of brand new Policy Brief on Emerging Contaminants, prepared by the projects of the very first Water JPI -funded research call. This Policy Brief will be the first in the series of forthcoming Water JPI Policy Briefs. Within the UN Sustainable Development Goals, the place of water-related issues is strong. Water is at stake not only in Goal 6 to "Ensure availability and sustainable management of water and sanitation for all", but in almost all of the 17 SDGs. Achieving set objectives by 2020 and 2030 will require innovative solutions easily transposable in all countries. This requires significantly rethinking and, as a crucial part of the conference, will be the theme of UN Sustainable Development Goals related to water challenges.

By bringing together stakeholders from research and industry as well as policy-makers and relevant organisations, the conference contributes to filling knowledge gaps regarding the environmental behaviour of pollutants and their effects on human health. Specific topics to be covered include development of analysis and detection systems, water treatment opportunities, impacts of wastewater reuse on human health, new water management practices and risk predictions.

# PREPARATION OF CONFERENCE

The Council of the European Union decided to launch a Joint Programming Initiative (JPI) in water research in December 2011. The aim the Water JPI is to have a joint European view of how to achieve sustainable water systems for a sustainable economy both in Europe and worldwide. "Finland has been a member of the initiative since its launch in 2010. "A key objective of the Water JPI is to strengthen the impact and relevance of research, and to promote the use of research knowledge in policy-making", says Laura Raaska, Director of the Academy of Finland's Biosciences and Environment Research Unit.





"We are actively involved in assessing and promoting the societal impact of research and in increasing its exposure. Organising this conference is part of that mission" Raaska says. "In this conference, for the first time, funded projects from the Water JPI Pilot research call on emerging contaminants, will publish their brand new key scientific results and recommendations for policymakers", says Science Advisor Harri Hautala, who has acted as the Call Secretary for this call. "We are expecting to gather a wide audience of representatives from researchers to end-users in Helsinki and the conference will be as such an important corner stone increasing the visibility and the impact of the Water JPI" continues Kata-Riina Valosaari, Senior Science Adviser, who has been involved in Water JPI activities from its beginning.

#### **PRELIMINARY CONFERENCE PROGRAMME**

Day 1 Wednesday, 6 June	
8:30-9:30	Registration and Coffee
9:30-10:00	<b>OPENING CEREMONY</b> <i>Kimmo Tiilikainen,</i> Minister of the Environment, Energy and Housing <i>Heikki Mannila</i> , president of the Academy of Finland
10:00-10:45	<b>OPENING SESSION</b> Position of the Water JPI in a global world <i>Maurice Heral,</i> Water JPI Chair DG Research (TBC)
10:45-11:30	<b>SESSION I: Emerging pollutants: environmental effects and risks</b> Keynote: Water fingerprinting to inform the state of the environment and public health. <i>Barbara Kasprzyk-Hordern</i> , University of Bath, UK
11:30-12:15	Lunch
12:15-13:15	SESSION I continues Oral presentations
13:15-14:15	SESSION II: Pilot Call projects showcase the Policy Brief Launch of the Policy Brief Panel discussion on Emerging Pollutants Policy Brief
14:15-14:45	Taste Break (Coffee)
14:45-17:30	Session III: UN SDG, emerging pollutants & the role of Water JPI? - Challenges in countries beyond Europe Invited speakers: Seppo Rekolainen, Finnish Ministry of Agriculture and Forestry, Vice-Chair of Water JPI Scientific and Technological Board and Bjørn Kaare Jensen, Geological Survey of Denmark and GreenlandPanel discussion
18:00-21:00	POSTER SESSION WITH WINE & SNACKS

Day 2 Thursday, 7 June	
9:00-9:15	SECOND DAY OPENING WORDS Mari Walls, President & CEO of Natural Resources Institute Finland
9:15-10:00	<b>SESSION IV: Options and strategies for monitoring and remediation of pollutants</b> Keynote: Technical solutions and strategies to monitor and reduce pollutants <i>Fiona</i> <i>Regan,</i> Director of the DCU Water Institute, Prof. of Chemistry at Dublin City University, Ireland
10:00-10:30	Coffee
10:30-12:00	SESSION IV continues Oral presentations
12:00-13:00	Lunch
13:00-14:00	SESSION V: Tackling emerging pollutants: joining forces for greater success Capacity building and Cooperation: Water JPI Knowledge Hub vs. Cost action – What is needed Introductory talk and panel discussion
14:00-16:30	<b>SESSION VI: Water quality and human health: the challenge for the future</b> Oral presentations
16:30-17:00	Concluding words

#### **KEYNOTE SPEAKERS**

Keynote speaker Professor Fiona Regan will focus on Technical solutions and strategies to monitor and reduce pollutants. We asked Professor Regan to tell us about herself and what water means to her professionally and in everyday life.



Fiona Regan is Professor in Chemical Science at "As the world's population and economy grow, Dublin City University and Director of the DCU there will be an increase in pressure on water Water Institute. She studied Environmental Science resources. For many years the World Economic and Technology and later completed a PhD in Forum has identified the global water crisis analytical chemistry in 1994. In 1996 she took as one of the top three risks. It is really critical up a lecturing position at Limerick Institute of that we can identify ways that we can share this Technology. In 2002 Prof Regan joined the School really important freshwater resource. Water of Chemical Sciences as a lecturer in analytical management is an issue of policy and governance chemistry, in 2008 she became senior lecturer and the world over and we all need to work together in 2009 became the Beaufort Principal Investigator to ensure a safe, secure water resource for in Marine and Environmental Sensing. everyone."

"My research focuses on environmental monitoring and I have a special interest in priority and emerging contaminants as well as the establishment of decision support tools for environmental monitoring using novel technologies and data management tools. I established the DCU Water Institute at a time when water governance and management in Ireland was experiencing huge challenges and in a backdrop of a global water scarcity and quality crisis.



There are real opportunities for leaders to change the way that we manage our water to provide a clean, safe and secure resource for everyone.

As Director of the DCU Water Institute I think about the aquatic ecosystem every day and the importance of this resource in our lives in Ireland and across the world. We all have a role to play in managing this resource for the benefit of everyone on the planet. Understanding the value of the resource is key to that. In Ireland you are never far from rivers and lakes. Our freshwater forms our landscape and provides an important resource for drinking water and leisure. "

# What do you see as the biggest water-related transboundary challenge?

# What are the most crucial research needs in terms of emerging pollutants?

"Emerging pollutants are a topic of concern because of the growing numbers of chemicals in our waters and the lack of knowledge of their impact on human and ecosystem health. The current monitoring approaches deal only with spot sampling and do not consider the



synergistic effects, the toxicity of chemicals, their level of occurrence and residence time in the environment. Research is needed to establish new and innovative monitoring approaches that take into account the toxicity of the water in relation to the occurrence of emerging contaminants. We need to understand the breakdown of the chemicals and the effects of these metabolites or degradation products. A strong approach linking sources of the chemicals and their occurrence in freshwaters is needed along with a study of toxic effects."

The Keynote speaker Professor Barbara Kasprzyk-Hordern will focus on Water fingerprinting to inform the state of the environment and public health.



Professor Barbara Kasprzyk-Hordern comes from the University of Bath, UK, where she leads the Environmental Chemistry Group. Their principal research interests fall into the three interrelated research areas of environmental, analytical and water sciences. Especially the group is interested in water pollution and novel technologies used to decrease contamination of water as well as urban water and human epidemiology.

synergistic effects, the toxicity of chemicals, their *What brought you to your current position?* 

"Genuine passion for furthering knowledge and strong desire to make our environment better for all. I grew up next to a river. Water runs through my veins!"

What are the most crucial research needs in terms of emerging pollutants?

"We need to engage more with interdisciplinary research, cross research boundaries to provide more comprehensive, less target driven risk assessment."

What do you see as the biggest water-related transboundary challenge?

"It's easier to do research globally than ever before but it is still difficult to get research enabling global partnerships funded. This also concerns interdisciplinary research as many focus on narrow aspects and do not engage with the process holistically. International collaboration is paramount to the success of projects trying to tackle water challenges."

#### THOUGHTS FROM THE INVITED SPEAKERS AND OTHER ATTENDANTS ON THE CONFERENCE TEAM

Conference organisers went and asked our invited speakers and other key persons on their ideas concerning the conference topics and freshwater ecosystems in general. All experts stressed the importance of collaboration and share of information and resources. Water-related challenges are global and do not respect national borders, so we need to join the forces and work together towards common goals. Water plays a big role for us not just as a resource but also as a source of well-being and recreation.

You can find longer interviews from conference webpage: <u>www.aka.fi/waterjpi2018</u>

#### Dr. Matt Crowe, Director, Irish EPA's Office of Evidence and Assessment, Ireland

What are the most crucial research needs in terms of emerging pollutants?

"We have to be always on the lookout for emerging pollutants so a key research need is to be continuously identifying what is likely to be the next problem. In a world where we keep inventing new chemicals and processes there are many opportunities for anthropogenic substances to find their way into the water environment and we need to be highly vigilant about this. Microplastic pollution is a particularly important issue at the moment as we come to grips with the potential impacts of so much plastic making its way into the environment and the potential implications for both human and ecosystems health. We also need to get much better at preventing the entry of potentially polluting substances into the water environment in the first



place – prevention is always better than cure."

What role do lakes and rivers have in your life? "I live on an island endowed with some of the most beautiful rivers, lakes and beaches in the world. I grew up in Dublin within walking distance of the Irish sea and have been close to the sea all my life so I cannot imagine living in a world without the constant and calming presence of water. Water has an almost mystical importance to many Irish people and it is a privilege to be able to do something to help with the overall protection and management of this most precious resource."

#### Dr. Nonhlanhla Kalebaila, Water Research Commission, South Africa

# What do you see as the biggest water-related transboundary challenge?

"Water stress due to a decline in water quality (and availability of usable water) is one of the significant challenges in inter-state water relations, and more so, where there are discrepancies in the governance of water quality, thus impacting on spatial targeting and implementation of harmonized water quality policies. Water quality changes are dynamic and erratic, thus, require forward thinking policies and agreements, that are flexible enough and adaptive in order to deal with emerging water quality conflicts."

#### What is the added value of international cooperation in solving water-related challenges? "Water is a shared resource, thus, solving any related challenges, being it access, quantity or quality, require cooperation. and capacity to respond to these challenges much faster."



#### Prof. Olli Varis, Water and Development Research Group, Aalto University, Finland

What is the added value of international cooperation in solving water-related challenges? "International co-operation in terms of knowledge and information sharing, policy integration, cost and benefit sharing etc. should be the baseline in solving waterrelated challenges. This is most stringent with transboundary waters, but also crucial in all water issues since water problems and solutions are intrinsically shared through the hydrological cycle."

## What are the most crucial research needs in terms of emerging pollutants?

"Addressing the ever-growing knowledge gaps and linking them to policy and public awareness."

#### European Innovation Manager Prisca Haemers, Ministry of Infrastructure and Water management, the Netherlands

What do you see as the biggest water-related transboundary challenge?

"The fact that water does not stop at boarders and it is vital to all is recognized by the United Nations and translated in the Sustainable Development Goals, makes that we have to tackle all water challenges simultaneously. That is the biggest challenge of all."

#### What is the added value of international

cooperation in solving water-related challenges? "The added value of international cooperation is the shortage off safe water is a global threat. By uniting our knowledge, we will be able to help ourselves and others." What role do lakes and rivers have in your life?

"I grew up near the lakes in North of Italy. During the economic boom in the 60 ties and 70 ties, industries used the water of the rivers and lakes without any consideration on the effects of pollution. I remember a story about a river where if you would throw a burning match in the stream, the match would continue to burn due to the high levels of pollution. The whole summer we used to play and swim in the lakes, over the years many beaches closed due to pollution. Some lakes became dead, due mainly to heavy metal pollution. Our family was lucky that the smaller lake in our village is fed by a natural spring, no polluted rivers entering the lake. So "our" lake was saved by nature and we could continue to swim and enjoy ourselves. Over the past decades it took a lot of efforts to clean all the lakes in Northern Italy and they are now on the right track. The degradation of the lakes and rivers in the 60 ties and 70 ties was with known pollutants. What scares me is that we do not know the new materials we use and whether they will be toxic and if so we do not know enough how to clean our rivers and lakes. We might see new signs on the beaches that bathing is prohibited.

It is good to see that researchers around the world are looking together for solutions to tackle also these emerging pollutants so our children can safely swim. "

