



**1st Water JPI
Thematic Annual Programming
(TAP)
Workshop**

**“Developing Approaches for Assessing and Optimising
the Value of Ecosystem Services”**

Lisa Sheils EPA

**June 12th 2019 Dublin
Ireland**



Aims of the Workshop & Agenda

- ▶ What is TAP?
- ▶ What does it mean for us?
- ▶ How will it work?
- ▶ So, what next?



What is TAP?

- ▶ Network of **national projects** focused on specific RDI needs
- ▶ This cluster will allow **coordination between the individual projects**, lead to a greater impact at the European and Global level and create critical mass, addressing research gaps and avoiding duplication.
- ▶ Activities will include annual working meetings which will allow exchange on approaches, methods, data.
- ▶ Theme 1.1 of Water JPI SRIA

2018-2019 – first TAP Water action on
*“Developing Approaches for Assessing and Optimising the Value of
Ecosystem Services”*

1st Water JPI - TAP

▶ Participating countries

- ▶ Finland - 1 project nominated
 - ▶ The Netherlands – 1 project nominated
 - ▶ Spain – 2 projects nominated
 - ▶ Ireland - 2 projects nominated
- ▶ Countries **expressed interest** and have still to investigate how best to join TAP 1
- ▶ France
 - ▶ *Others can still join up to 6 months after the kick-off meeting June 12th 2019 of the TAP*

What does it mean for us?

- ▶ Further our **understanding of ecosystems context, functions and processes**, and safeguard natural resources for **future generations** by **identifying measures** to help the adaptation and reaction to current and future pressures on the aquatic environment.
- ▶ **Develop new tools** in the field of ecological engineering and **early warning systems**.
- ▶ Develop a better understanding of the **socio-economic** aspects, governance and **behavioural changes** associated with this area, including issues of preservation vs. restoration costs and the demonstration of the economic **value and social benefits** of aquatic ecosystem services.

How will it work? No I

- ▶ Network of the TAP project teams will carry out networking and **knowledge sharing** activities **over 24 months timeframe:**
 - ▶ June 2019-June 2021
- ▶ 2 **face-to-face** meetings per year
- ▶ **Online Discussion Forum** –(e.g. a LinkedIn group)
- ▶ **Online Restricted Platform** for sharing documents (e.g. Google docs, Water JPI Intranet Section, etc.)
- ▶ **Public dissemination** of its activities and outputs via a dedicated webpage on the Water JPI website

How will it work?

- ▶ Remote interaction in between meetings (e.g. Video-Conferencing, WebEx).
- ▶ Members' costs for attending meetings Travel & Accommodation Costs will be covered by the respective national Funding Organisations – or within their national project budget

Table 2: Water JPI TAP network members

Project Co-ordinator Name	Title of National Project	Project Co-ordinator Organisation	Nominating Funding Agency	Nominating Funding Agency Country
Anna K. Kuparinen	Complex eco-evolutionary dynamics of aquatic ecosystems faced with human-induced and environmental stress	University of Jyväskylä	Academy of Finland (AKA)	Finland
Prof Mary Kelly-Quinn	ESDecide: from Ecosystem Services Framework to Application for Integrated Freshwater Resources Management	University College Dublin (UCD) Ireland	Environmental Protection Agency (EPA)	Ireland
Dr Kathryn Schoenrock	The Diversity and Resilience of kelp ecosystems in Ireland	National University of Ireland Galway (NUIG)	Environmental Protection Agency (EPA)	Ireland
Joost Bakvis	TBC	Rijkswaterstaat	IENW	The Netherlands
Vicenç Acuña	Spatial and temporal flow intermittency in fluvial ecosystems: effects on structure, function and ecosystem services	Fundació Institut Català de Recerca de l'Aigua	Ministerio de Economía, Industria y Competitividad	Spain
José María Botas del Pozo	Design of a methodology to increase flood resilience compatible with improved status of water bodies and sustainable management of water resources	University of Castilla-La Mancha (UCLM)	Spanish National Plan for Scientific and Technical Research and Innovation (MINEICO/AEI/FEDER, UE)	Spain
				France tbc
				Others tbc



How will it work? No 2

- ▶ TAP will be chaired by a Scientific Coordinator elected by the members of the network.
- ▶ Ensure the Scientific **coordination** of the TAP activities
- ▶ Lead the work in developing the TAP **Action Implementation Plan**
- ▶ Lead the work in **developing** the proposed scientific TAP outputs
- ▶ Travel cost covered his/her respective national funders
- ▶ Honorary fee of c. €10,000 – to cover time etc.

How will it work? No 3

- ▶ TAP **Steering Committee** is composed of:
 - ▶ Funding Organisations,
 - ▶ Members of the Water JPI
 - ▶ Countries that have projects taking part in this activity
 - ▶ Chaired by the EPA (Ireland)

Country	Organisation
Ireland	EPA(Chair)
Finland	AKA
France	ANRWW2015 Secretariat ³
France	ANR Water JPI ⁴
Spain	AEI
The Netherlands	<u>lenW</u>
<i>Others tbc</i>	

How will it work?

TAP Steering Committee

Support + Assistance

- ▶ Identify relevant national projects to take part in the first Thematic Annual Programming ✓
- ▶ Oversee and support the activities of the Thematic Annual Programming – *on-going*
- ▶ The TAP Steering Committee will have an important role in decision making where relevant *on-going*
- ▶ Ensure their full integration in & complementarity with the overall Water JPI activities *on-going*

How will it work? No 4

TAP Administrator - EPA Ireland

- ▶ Supporting the TAP [Coordinator](#) and the network group
- ▶ Organising meetings (agenda, documentation, minutes)
- ▶ Facilitating communication within the [TAP members](#) and with the [Steering Committee](#)
- ▶ Supporting the preparation of TAP **Implementation plan**
- ▶ **External Communication:** Disseminating and creating dissemination leaflets / webpage contents for Water JPI website

DRAFT Expected Outputs

Increasing synergies of national-funded projects

- ▶ Fostering coordination and sharing of results
- ▶ Fostering mobility and sharing of infrastructure
- ▶ Providing input into the update of the SRIA
- ▶ Preparing policy briefs, Joint scientific publications, Harmonisation of protocols etc.
- ▶ Developing databases
- ▶ Developing common and cohesive practices / methodologies
- ▶ Presenting at Water JPI events including carrying-out foresight exercises, and
- ▶ Lead new research projects



What will our TAP outputs be?

- ▶ Policy Brief
- ▶ Hot Topics
- ▶ Infographics
- ▶ State of the Art/ Knowledge Report
- ▶ Implementation Plan
- ▶ International workshop
- ▶ Input to new SRIA – submission as a group
- ▶ Other ideas???



Examples from Water JPI KHCEC

Water JPI and Emerging Pollutants

KNOWLEDGE TRANSFER

FROM NEW KNOWLEDGE ON EMERGING POLLUTANTS IN WATER RESOURCES TO KNOWLEDGE TRANSFER

Emerging substances: substances that have been detected in the environment, but which are currently not included in routine monitoring programmes at EU level and whose fate, behaviour and (eco)toxicological effects are not well understood.

Emerging pollutants: pollutants that are currently not included in routine monitoring programmes at the European level and which may be candidates for future regulation, depending on research on their (eco)toxicity, potential health effects and public perception, and on monitoring data regarding their occurrence in the various environmental compartments.

According to the NORMAN network, at least 700 substances (categorised into 20 classes) have been identified in European aquatic environments.

WATER JPI ACTIVITIES IN THIS AREA

Projects funded by the Water JPI address several scientific questions related to emerging pollutants in water resources: fate and transport of pollutants; impact on aquatic ecosystems and human health and prediction of evolution; water purification; control, mitigation and method for water treatment and removal, including the sustainability improvement of the existing technologies; and possible risks for the agriculture or the freshwater aquaculture sectors.

Considering the huge challenge represented by these compounds, it was decided to launch a thematic network consisting of selected research groups within a defined area of research targeted at stakeholders - so called **knowledge hub** - in order to increase the efficiency of the research and innovation community.



- ▶ 3 joint transnational calls completed in 2013, 2015, and 2016
- ▶ 20 funded projects addressing emerging pollutants challenges

CONTACT INFORMATION

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Contaminants of Emerging Concern – an emerging risk in our waters

Climate change and rising demands to satisfy human and economic needs put increasing pressure on our water resources. The amount of chemicals used in our daily life has increased tremendously over the last decades and new chemical substances are regularly put on the market. During or after their use, these compounds find their way into our water bodies and into our environment.

Designated as Contaminants of Emerging Concern (CECs) or Emerging Pollutants (EPs) these substances are not regulated and therefore not included in routine monitoring programmes. Their continuous input and widespread occurrence in the environment raises specific concerns because their potential adverse effects on environmental and human health are not yet fully understood. The concern is not limited to chemicals, but involves other emerging concerns, such as antibiotic resistance, (micro)plastics and novel pathogenic organisms. Our knowledge of their fate and behaviour in the environment as well as their effects and potential risks to environmental and human health is still limited.

Certain CECs have been detected at 'effect-triggering' concentrations in surface and ground water bodies, and are causing environmental and ecological stress, effects on human and animal reproduction, cancer, antibiotic resistance, to name only a few. However, by far not all correlations between the occurrence of CECs and their effects are understood, new chemicals are detected on a regular basis and we do not know what effects they could trigger in the environment and in humans.

Findings also indicate that effects from CECs take time to have an impact on environmental systems. Decreases in fertility and reduction of resilience, for example, may not affect an individual, but result in a steady weakening of the populations in the environment and human society over time. This is even amplified by the situation that both, in the aquatic environment and in the urban water cycle, we observe a multitude of different CECs, at the same time. This results in exposure to a complex mixture of CECs which can boost impacts exponentially.

Knowledge of emerging pollutants in our society must be improved – it is assumed that the CECs and related risk potential we are aware of today are just the tip of the iceberg.

We need to use a precautionary principle to protect future generations. Research on how these substances behave, their toxicity and environmental/health impact is crucial.

- There are still existing knowledge gaps to be filled by scientific research, there is a need to set immediate actions to reduce the occurrence and risks of CECs in the aquatic environment.
- The implementation of new technologies for monitoring, wastewater treatment and leach leach sludge handling and risk assessment are all interventions measures that need to be considered as precautionary principles.
- New technologies and approaches will only be developed if there is supporting policy measures and legislation in place that allows structures such as preliminary interventions measures.



Knowledge Hub on Contaminants of Emerging Concern Who's Who

KNOWLEDGE HUB ON EMERGING POLLUTANTS IN DETAILS

Seed group – 24 scientists involved in projects funded by the Water JPI, National Agencies or European Frameworks

Participating countries – Belgium, Cyprus, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Norway, Portugal, South Africa, Spain, Sweden and United Kingdom

Start date – March 2018, for 24 months with possibility of enlargement

First expected outcomes – Policy Briefs on exposure assessment, source control, risk management, as well as new scientific partnerships for upcoming actions

2018 WATER JPI CONFERENCE

- ▶ Emerging pollutants are a major issue for human health and ecosystems
- ▶ A lot done on characterizing the situation, monitoring
- ▶ More to do on solutions for:
 - reducing impacts
 - changing the landscape, in particular in consumption
 - bridging with citizens, economic sectors and policy-makers

IN THE NEAR FUTURE...

- ▶ A special issue of the open access Water Journal on "Pharmaceutical compounds, as emerging organic contaminants, and their occurrence and transport in groundwater: sources, reactions and fate" (May 2019)
- ▶ Three JPIs Water, Oceans and Anti-Microbial Resistance joining efforts for developing knowledge for reduced risks posed by emerging pollutants to waterbodies and related ecosystems and food chain, and reduced risks to human health via these ecosystems

Actions needed:

- Consolidation of knowledge on CECs, and development of strategic approaches for research and information management.
- Improve existing monitoring strategies to address CECs and implement new ones to establish a sound database for risk assessment, prioritization, trend observation and success control.
- Implementation of advanced technologies in wastewater treatment and reuse, to significantly decrease the number of and impact of CECs.
- Development of environmental quality standards for surface water, drinking water, wastewater reuse and sludge disposal, following new approaches such as effect-based methods that consider toxicity of a mixture of substances.
- Joined up legislation on with regard to registration of chemicals, biocides, water quality, human health and others.
- Courage and confidence to implement new approaches in policy and legislation.
- Setting up appropriate communication and raising awareness of the impact of CECs on a broad societal base including industry, policy makers and politicians.
- Further financial support for targeted research on various aspects of CECs.

Advances in sustainable energy production and mobility, health care and resilience, IT and digitalisation will all become compromised and meaningless, if we do not react to the proven indications of the environmental and human health effects of CECs. As successful as we have been in handling traditional water quality issues such as organic pollution and nutrients, we are facing even much greater challenges today, that urgently need to be tackled in a changing world leaving its footprint in the water we rely on for drinking for economic activities and for the future generations towards which we have a huge responsibility.

What is the Water JPI Knowledge Hub?

The purpose of the Water JPI Knowledge Hub is to share knowledge that can be used by regulatory authorities and environmental scientists, and that will allow professionals to make informed decisions. Another purpose is to raise awareness of these issues among the public.

The Water JPI Knowledge Hub brings together experts from several research areas to collaborate and communicate across different scientific disciplines and with decision makers. It closely works together with other European Networks such as the NORMAN Association, Contaminants of Emerging Concern is the first research area developed within the Water JPI Knowledge Hub.

Internet sources
Water JPI: <http://www.waterjpi.eu/>; Water Framework Directive 2000/60/EC: http://ec.europa.eu/environment/water/water-framework/index_en.htm; Common Implementation Strategy (CIS) for the Water Framework Directive: http://ec.europa.eu/environment/water/water-framework/cis/objectives/implementation_en.htm; The NORMAN network: <https://www.norman-network.net/>; Strategic Development Goals of United Nations: <https://sustainabledevelopment.un.org/?menu=1300>

Literature
Water JPI Open project database: Link, Berendonk, T.U. Mondot, C.M. Merlín, C.M. Patta-Ramos, D. Cizyn, E. Vissán, F. Burgommo, K. Sarum, N. Nørstebom, M. Forns, M.N. Krautzberger, N. Huuvinen, P. Stefan, S. Schwartz, T. Kivand, V. Bozova, F. Morinas, J.L. Topking antibiotic resistance: the environmental framework, *Nature Reviews Microbiology* 13 (2015) 317-317.

More information and contact:
• www.waterjpi.eu/
• implementation@thematicactivities.waterjpi.eu

So, what next? - TODAY

- ▶ Select our **TAP Coordinator**
- ▶ Select our **TAP acronym and name**
- ▶ Agree some **realistic TAP outputs** for the next 6 months
- ▶ Start the discussion and drafting of the Implementation Plan
- ▶ Agree on a communication platform
- ▶ **Who's Who** – bio-template to be circulated – ALL TAP project members to be included (photo included also)
- ▶ SRIA Consultative workshop – Dublin October 22/23
- ▶ Next meeting, end of **November 2019** in Brussels (date TBC)