

Water Joint Programming Initiative 2016 Exploratory Workshop



Dublin –
14th November 2016

Welcome

Matt Crowe

Environmental Protection Agency



Plenary Session-I

Chaired by:

Brian Donlon

Environmental Protection Agency



General Introduction on the Water JPI & Strategic Research & Innovation Agenda



Dominique Darmendrail
ANR
Water JPI Coordinator

**2016 Water JPI Exploratory Workshop,
Dublin – 14th November 2016**

Joint Programming

- Is a new way to address RDI problems with (at least) European dimension
 - An initiative of European Member States and the European Commission
 - For tackling major, common, European societal challenges in a coordinated way, through:
 - coordinating national / regional, public, research, development and innovation programmes in Europe
 - Developing Joint multilateral activities
 - **aligning** national research programmes in an effective manner,
 - making better use of Europe's limited public RDI funding
 - and extending links to various international initiatives.
 - A process based on variable geometry

10 JPIs since 2008



Alzheimer and other Neurogenerative Diseases (JPND)



Agriculture, Food Security and Climate Change (FACCE)



A Healthy Diet for a Healthy Life (HDHL)



Cultural Heritage: a Challenge for Europe (JPI CH)



Urban Europe - Global Urban Challenges, Joint European Solutions (Urban Europe)



Connecting Climate Knowledge for Europe (Climate)



More Years, Better Lives - the Potential and Challenges of Demographic Change (MYBL)



Antimicrobial Resistance - The Microbial Challenge - An Emerging Threat to Human Health (JPIAMR)



Water Challenges for a Changing World (Water)



Healthy and Productive Seas and Oceans (Oceans)

The Water JPI

- The Water JPI, entitled “Water Challenges for a Changing World”, was formally approved by the European Council in December 2011.
- The Water JPI is dedicated to tackling the ambitious challenge of achieving sustainable water systems for a sustainable economy in Europe and abroad.
- This will be realised through a multi-disciplinary approach, which includes economic, ecological, societal and technological considerations.

UN Sustainable Development Goals

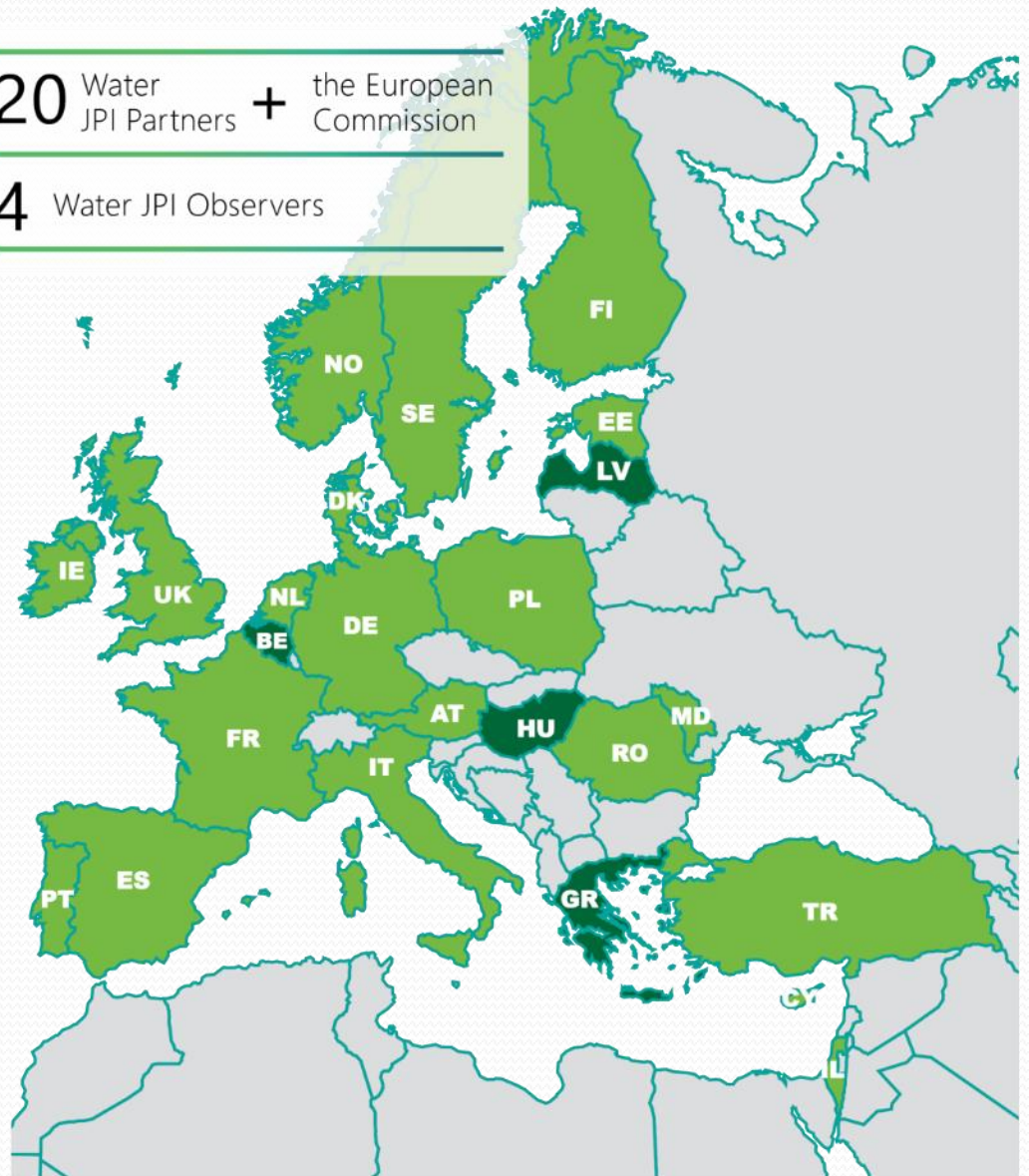


Water is central to many of the UN SDGs

Water JPI Partner Countries

20 Water JPI Partners + the European Commission
4 Water JPI Observers

Water JPI partners currently represent 88% of the European National Public RDI investment on water



Main Objectives of Water JPI and Activities to Realise

OBJECTIVES

Reaching effective, sustainable coordination of European water RDI

Involving water end-users for effective RDI results uptake

Harmonising National water RDI agendas in Partner Countries

Supporting European leadership in science and technology

TOOLS / ACTIVITIES

Joint Call Management for providing and steering **research and innovation** in the water sector

Alignment of Research Agendas (SRIA Document and Implementation Plan) and RDI activities (including mapping activities and infrastructures)

International Cooperation (MoUs, Call Partnerships...)

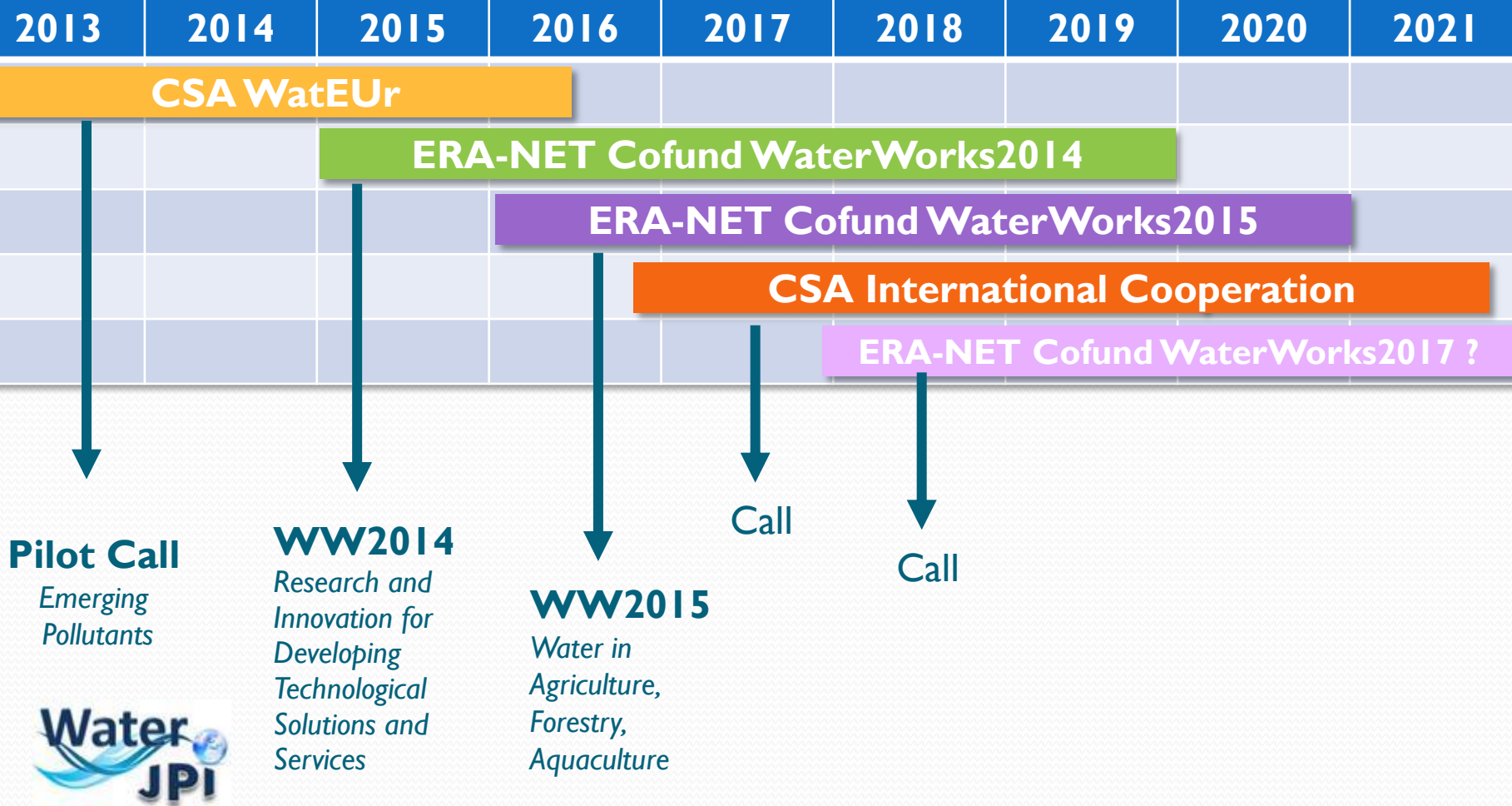
Possible Joint Actions



- Shared strategic research & Innovation agenda
- Mapping exercises
- Joint calls
- Knowledge hub (Including development of policy briefs, innovation factsheets)
- Demonstration programmes or launch of demonstration platforms
- Access to key infrastructures, observatories
- Training and capacity building
- Joint events / conferences / workshops / webinars
- Brokerage events / roadshows
- Mobility schemes (for researchers, for research programmes managers)
- Connections with leading research networks (e.g. COST Actions)

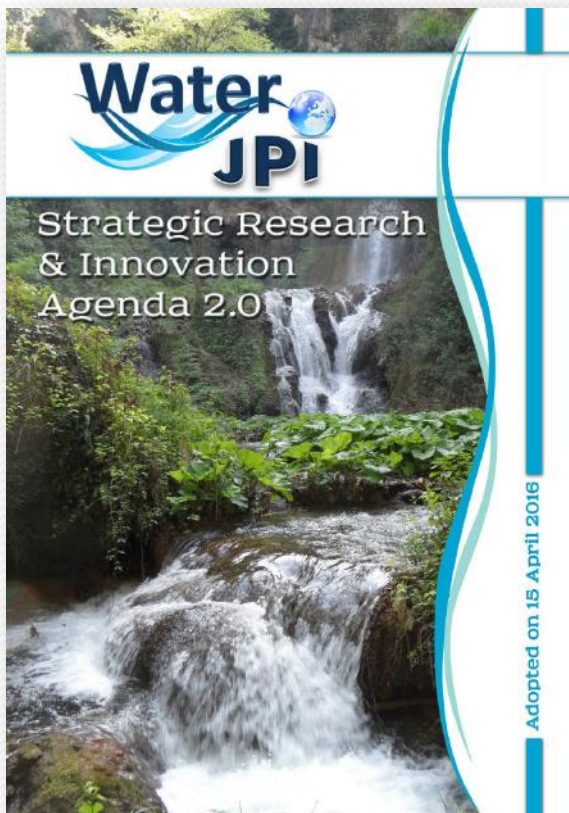
Timeline of Water JPI Joint Calls

Water JPI



SRIA

Strategic Research and Innovation Agenda



- Conceived as a participatory, inclusive, shared and forward-looking strategic document that lays out Research, Development and Innovation (RDI) needs in Europe in the field of water
- Conceived as an instrument to guide European research and innovation

➔ **Objective: to be the European reference document on water stakes that will frame H2020 calls, etc.**

SRIA structure

Vision Document

(5 themes)

Theme 1
Improving
Ecosystem
Sustainability
and Human
Well-being



Theme 2
Developing
Safe Water
Systems for
Citizens



Theme 3
Promoting
Competitiveness
in the
Water
Industry



Theme 4
Implementing
a Water-wise
Bio-based
Economy



Theme 5
Closing the
Water Cycle
Gap
Improving
Sustainable
Water
Resources
Management



SRIA 2.0

(5 themes and 11 sub-themes)

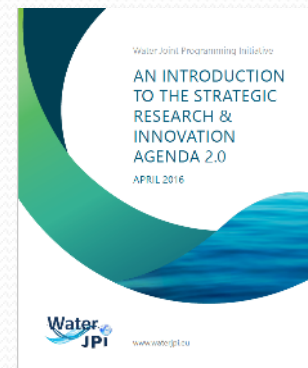
SRIA 2.0 publications

- A technical version



- A public friendly version

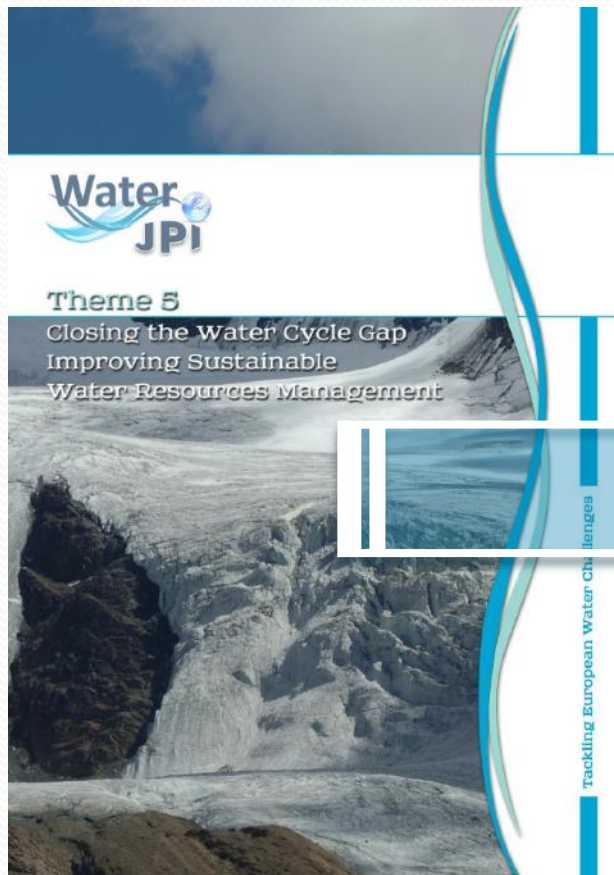
An Introduction to the Strategic Research & Innovation
Agenda 2.0



- An interactive glossary (under progress)

SRIA structure

For each theme and subtheme:
identification of expected theme impacts,
RDI needs and related objectives



Theme 5. Closing the Water Cycle Gap - Improving Sustainable Water Resources Management

In many regions of Europe, it may be difficult to reconcile water supply and demand in both quantitative and qualitative terms. The aim of RDI actions under this theme is therefore to bridge the gap in "supply-demand" by enabling the sustainable management of water resources. Innovative strategies and approaches will be developed where appropriate.

Rationale

Europe is not an arid continent, but water scarcity has become a concern for millions of people. Water scarcity affects at least 11% of the European population and 17% of the territory¹⁷³.

In quantitative terms, the availability of water for different uses is threatened by increasing episodes of drought. According to data provided by the European Commission, droughts since 1980 have cost the European economy about EUR 100 billion. Leakages in the water supply infrastructure, the considerable exploitation of freshwater for agricultural purposes and the lack of appropriate water-saving technologies will increase pressure on limited water resources in many regions. To make matters worse, water consumption for public, industrial and agricultural use is expected to increase by 16% by 2030¹⁷⁴. Although southern regions are more severely affected, central and northern regions are also affected by droughts.

In qualitative terms, water pollution from nutrients, organic matter, heavy metals and other chemical pollutants poses a serious threat to water availability. Despite the efforts of local authorities to curb water pollution, the concentration of nutrients and heavy metals is high in many watersheds.

In response to this situation, legislative measures have been put in place by the European Commission (WFD, Water Blueprint, Water Scarcity and Droughts Strategy). Experience shows that the enforcement of some of the measures and recommendations put forward by these policies is not an easy task (i.e. the case of water pricing in products). Legislative measures need to be coupled with the implementation of measures for appropriate water management, and this is where RDI actions can play a crucial role. As detailed below, there is a need for new integrated approaches to water resources management, including the development of hydrological processes and to analyse and forecast the effect of management measures. Socio-economic approaches are also needed to investigate questions of participation, behaviour and the costs and benefits of proposed measures.

This research will need to articulate knowledge of ecology, social sciences, economics, geography, environmental sciences, geosciences and technology in various space-time dimensions and on different scales and by integrating water policy with other public policies (agricultural, industrial, domestic, urban, regional planning, transport, energy, biodiversity). In the context of increasing tensions around water, tools for monitoring, forecasting, providing information and decision-making are needed to anticipate and manage such tensions and avoid conflict.

¹⁷³ European Commission Directorate-General for the Environment (2010), Water Scarcity and Drought in the European Union. Available at: <http://ec.europa.eu/environment/water/scarcity/pdf/brochure.pdf>

This theme is broken down into two subthemes:

5.1. Enabling sustainable management of water resources;

5.2. Strengthening socio-economic approaches to water management.

The research needs and objectives for each subtheme of Theme 5 are detailed below. It is worth noting that the cross-cutting RDI needs identified in Table 3 are also integral and of relevance to this theme.

Expected theme impacts

Impact	Description
Social	The diversity of pressures and impacts on water bodies suggests that water policy can be effective only if it is implemented in a close "horizontal" dialogue with stakeholders interested in clean water and healthy water ecosystems. The impacts of water crises are not equally distributed in society, and they can be a source of conflict between different water users. Improved water management will alleviate societal tensions
Economic	Economic instruments such as taxes and subsidies can act as incentives for prudent water management. They constitute a vital complement to water regulation, and they can assist in allocating water between competing user demands. Mitigation measures and short-term solutions to overcome water scarcity (e.g. water transfers) will be included in the assessment of costs related to scarcity or drought and the assessment of economic vulnerability of users and assets
Technological	Improvement of the techniques for managing of water resources (aquifer recharge, DSSs, inter alia) with interoperability of databases, sensors and combined socio-economic and physical water models
Environmental	Both water quantity and water quality are key factors in aquatic and riparian ecosystems. A decrease in available water resources jeopardises environmental flows as a minimum requirement for a healthy ecosystem. Other impacts include the loss of biodiversity and the degradation of landscape quality
Policy	Regulatory measures are essential tools to ensure compliance with environmental standards for water quality and quantity. Economic policy instruments contribute to supporting these regulations, as expressed in the 2012 EU Water Blueprint. Understanding the mechanisms leading to improved water management will lead to better policy design and adaptation

Subtheme 5.1. Enabling sustainable management of water resources

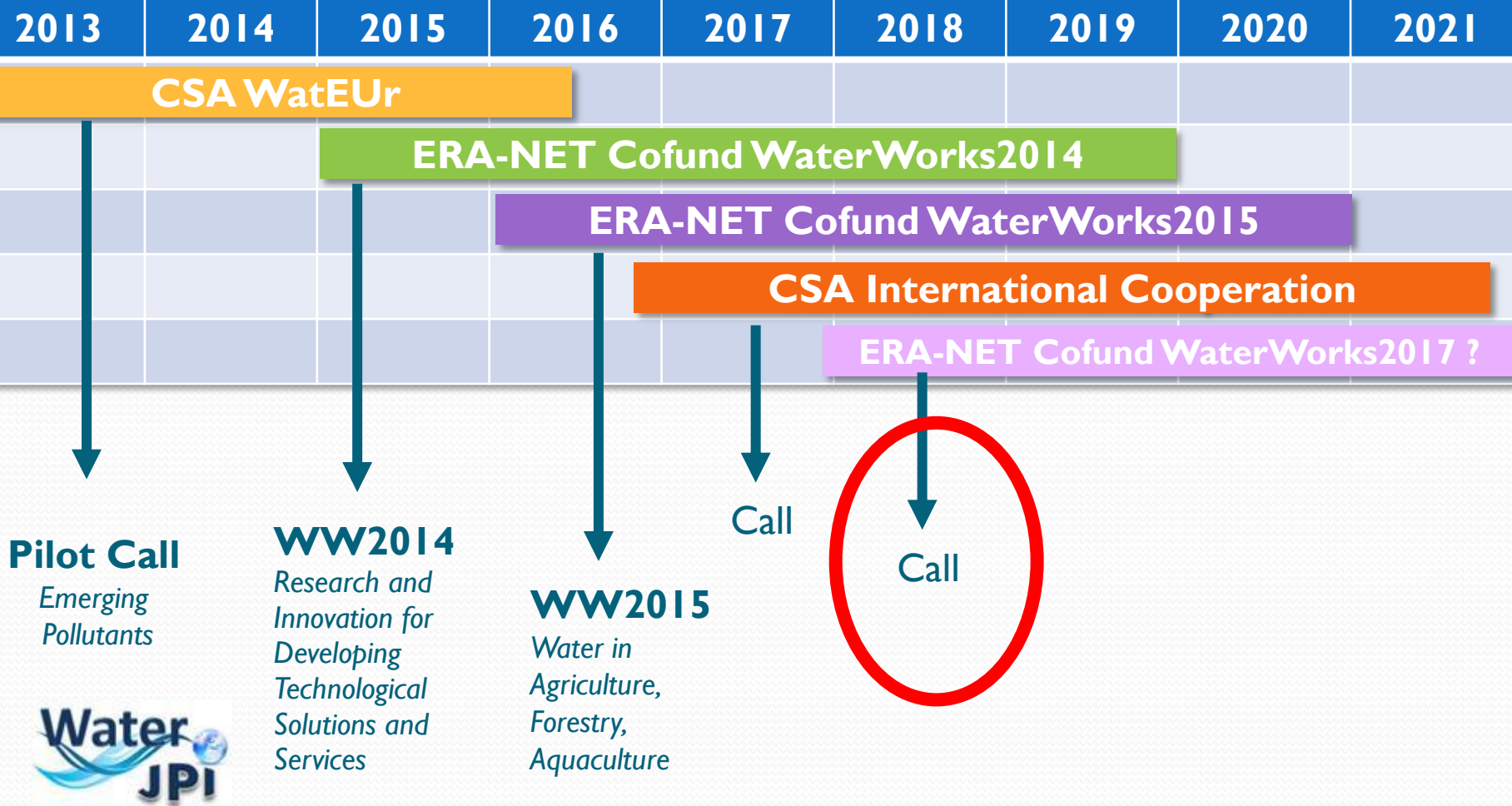
Rationale

Enabling sustainable water management is a prerequisite for achieving water systems fit for a sustainable economy in Europe and abroad. From an RDI perspective, this requires improving our understanding of integrated water management through further analysis involving surface water, groundwater and soil management, erosion and pollution control, flood management and wastewater.

The integrated models of the entire water cycle, including all compartments (surface soil, groundwater) and water use (vegetation, humans), have yet to take into account scenarios of

Timeline of Water JPI Joint Calls

Water JPI

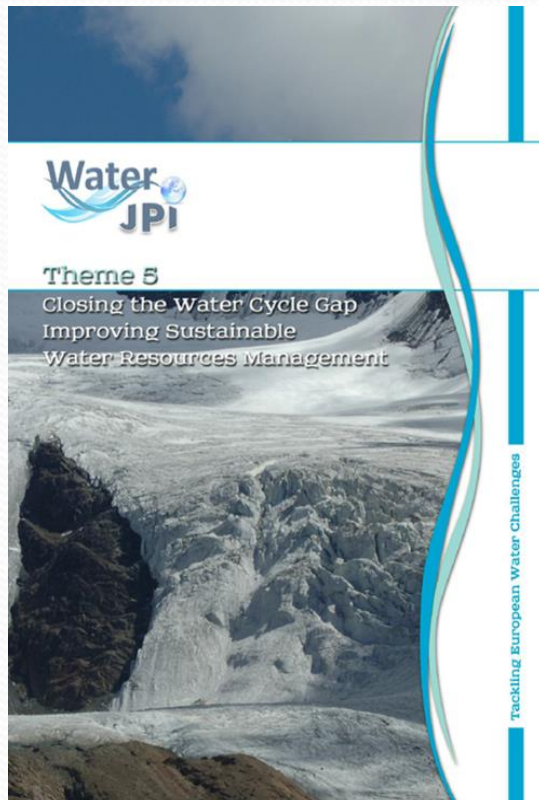


Theme 5

Closing the Water Cycle Gap: Improving Sustainable Water Resources Management

SUBTHEMES:

- ❑ 5.1 Enabling sustainable management of water resources
- ❑ 5.2 Strengthening socio-economic approaches to water management



Social



Economic



Technological



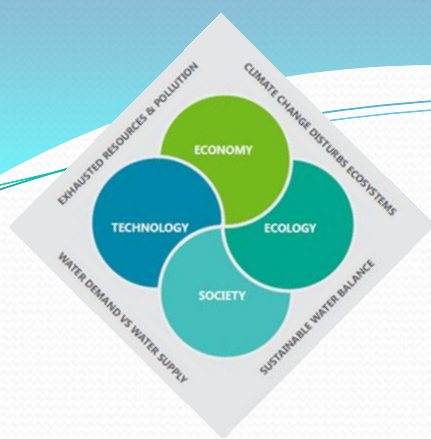
Environmental



Policy

Expected Impacts on

- Public awareness of water-reuse opportunities
- Allocation of water resources between competing user demands, mitigation measures and short-term solutions to overcome water scarcity
- Development of practical and low-cost technologies treating wastewater
- Balance between water availability & demand
- Relevant to EU Regulations & Policies (7th Environment Action Programme, Water Scarcity & Drought Strategy...) and to UN Sustainable Development Goals (6, 11 and 13)

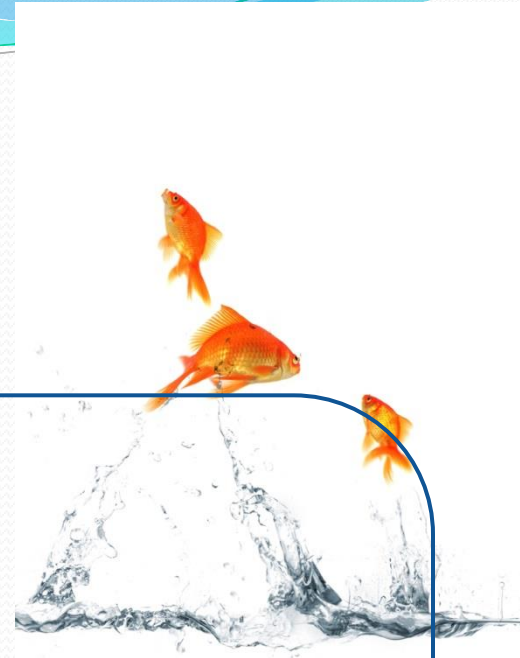


Cross-cutting issues

Bringing forward the cross cutting/horizontal issues in the SRIA in a more holistic/integrated manner and highlighting the links/synergies between some of the needs within the SRIA

	Theme 1 Improving Ecosystem Sustainability and Human Well-being	Theme 2 Developing Safe Water Systems for Citizens	Theme 3 Promoting Competitiveness in the Water Industry	Theme 4 Implementing a Water-wise-Bio-based Economy	Theme 5 Closing the Water Cycle Gap
Ecosystems' ecological status, resilience, services and restoration	+++	+	+	+	++
Pollutants: risks and remediation	+	+++	++	++	+
Water and energy	+	+	+++	+	++
Water and agriculture	+	+	+	+++	++
Water and citizens	+	++	+	+	+++
Water and climate	++	++	+	+	++
Water data (monitoring, citizen participative sciences)	++	++	++	++	+++
Sensors, technologies and smart systems	++	++	+++	++	++
Governance and acceptance Removing barriers (legislation, funding schemes, governance, acceptance)	+	+	+++	++	+++
Developing new tools combining in situ and remote sensing data: models	+	+	+	+++	+++
Integration of water policies in the EU	++	++	++	++	++

Contact Details



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Funding Instruments from the JPI



Alice Wemaere
Environmental Protection
Agency

2016 Water JPI Exploratory Workshop,
Dublin – 14th November 2016

Why are we here today?

- 
- Exploratory Workshop
 - Research needs scoping paper

- 
- Water JPI Governing Board
 - Approval

- 
- Call Funding Agencies
 - Technical Scope

- 
- 2018 Water JPI Joint Call
 - (transnational projects – c. €1.5m – 36 months)

- 
- Knowledge Hub, Connection to the market, Influencing policy making

How?

Group Discussion



1. Key knowledge gaps in the area
2. Identifying the top 3 gaps
3. Completing the template

Template



Key Research Need Title

Challenge

Scope

Top 3 Objectives

Top 3 Expected Impacts

This topic would answer the following End-Users Needs...

Policy Relevance

Geographical/Regional Relevance

How to facilitate Knowledge Transfer?

Type of Instrument (Research project, Research & Innovation project, Coordination project, etc.)

Type of TRLs targeted (basic / applied / innovation)

Additional Information

How?



Panel Discussions

Q1: How can you make calls more attractive to the economic sector and bringing the research outputs to market?

Q2:

(a) What have previous collaborative research options found to be advantageous and what are the pitfalls of these collaborative actions?

(b) Based on your past experience, what are the criteria in making a decision on whether your initiative would/could collaborate with the Water JPI (joint calls/activities)?

Q3: How can you focus to avoid overlaps with other funding instruments?

Scientific Perspective on the Water JPI SRIA RDI needs within Theme 5



Jaap Kwadijk
Deltares /
U.Twente, NL/
JPI-Water - STB

2016 Water JPI Exploratory Workshop, Dublin – 14th
November 2016



Policy perspective on the Water JPI SRIA needs within Theme 5

**Water JPI workshop
14 November 2016, Dublin**

**Dagmar BEHRENDT KALJARIKOVA
Water Unit
Directorate-General Environment**

Water JPI End-Users Perspective on the SRIA RDI needs within Theme 5



Antonio Lo Porto

**Water Research Institute (IRSA-CNR)
EurAqua Chair
Stakeholder Advisory Group Chair**

**2016 Water JPI Exploratory Workshop, Dublin –
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Questions & Answers



Programme

11.15am – 11.45am: **Coffee Break**

11.45am – 1.15pm: **Breakout Sessions**

Session-1: Swift Suite 1 & 2

Session-2: Field Suite 1

Session-3: Field Suite 2

1.15pm – 2.15pm: **Lunch** (Restaurant)

2.15pm – 3.15pm: **Breakout Sessions ctd.**

Breakout Session-I

Enabling Sustainable Management of Water Resources



Chaired by:
Kristina Laurell
(FORMAS, Sweden)

NETLAKE COST Action



Dr Eleanor Jennings
DkIT

**2016 Water JPI Exploratory Workshop,
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TERENO

Terrestrial Environmental Observatories

Water Related Research



Steffen Zacharias
UFZ
Helmholtz Centre
for Environmental Research

**2016 Water JPI Exploratory Workshop, Dublin – 14th
November 2016**

Questions & Answers



Group Discussion



Enabling Sustainable Management of Water Resources.....

1. Key knowledge gaps in the area
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Additional Information

Plenary Session-2

Chaired by:

Padraic Larkin

Water JPI Co-Chair



Review of the Fiches Prepared

Summary from Breakout Sessions:

1. Enabling Sustainable Management of Water Resources
2. Regional Perspectives
3. Strengthening Socio-economic Approaches to Water Management



Group Discussion



Round Table Discussion

- **European Commission, DG Research & Belmont Forum:** Panos Balabanis - **via Video Link**
- **FACCE JPI:** Richard Howell (DAFM, Ireland)
- **JPI Ocean & Climate JPI:** Torill Engen Skaugen (RCN, Norway)
- **Water JPI:** Dominique Darmendrail (ANR, France)



Q1: How can you make calls more attractive to the economic sector and bringing the research outputs to market?

Q2:

- (a) What have previous collaborative research options found to be advantageous and what are the pitfalls of these collaborative actions?
- (b) Based on your past experience, what are the criteria in making a decision on whether your initiative would/could collaborate with the Water JPI (joint calls/activities)?



Q3: How can you focus to avoid overlaps with other funding instruments?

Questions & Answers



Thank You!

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