IC4WATER Coordination and Support Action

H2020-SC5-11-2016: Supporting international cooperation activities on water

D 5.1

Water JPI SRIA and UN Sustainable Development Goals report

(WP 5, Task 5.1)

July 2018

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List of Abbreviations

AB:	Advisory Board
AKA:	Suomen Akatemia (Academy of Finland)
CEH NERC :	Centre for Ecology and Hydrology, National Environmental Research Council, UK
CONFAP:	Conselho Nacional Das Fundaçoes Estaduais de Ampara A Pesquisa (Brazilian National Council of State Funding Agencies)
CSA:	Coordination and Support Action
CSC:	Call Steering Committee
DCU:	Dublin City University
DIT:	Dublin Institute of Technology
DKIT:	Dundalk Institute of Technology
EFR:	Emergency First Response
EIFAAC:	European Inland Fisheries and Aquaculture Advisory Commission
EPA:	Environmental Protection Agency, Ireland
EU:	European Union
EWR:	Environmental Water Reserve
FACCE JPI:	Agriculture, Food Security and Climate Change
FAO:	Food and Agriculture Organization of the United Nations
FCT:	Fundaçao Para A Ciência E A Technologia (Portuguese National Funding Agency for Science, Research and Technology)
FP7:	Seventh Framework Programme
F.R.S.-FNRS:	Fund for Scientific Research, Belgium
GB:	Governing Board
GEMI:	Integrated Monitoring of Water and Sanitation Related SDG Targets
GLAAS:	UN-Water Global Analysis and Assessment of Sanitation and Drinking Water
H2020:	Horizon 2020
IFD:	Innovation Fund Denmark
IRD:	Institut de Recherche pour le Développement (French National Institute for Research for Sustainable Development)
JPI:	Joint Programming Initiative
JMP:	Joint Monitoring Programme
JTC:	Joint Transnational Call
KIT:	Karlsruher Institut für Technologie (Karlsruhe Institute of Technology)

LATTS CNRS:	Laboratoire Techniques Territoires et Sociétés, France
MINECO:	Ministerio de Economia Y Competitividad (Ministry of Economy, Industry and Competitiveness)
MoU:	Memorandum of Understanding
NGO:	Non-Governmental Organisation
OECD:	Organisation for Economic Co-operation and Development
RCN:	Norges Forskningsråd
RDI:	Research, Development and Innovation
RoI:	Research and Innovation
RTD:	Research, Technology and Development
RVO:	Rijksdienst voor Ondernemend (Netherlands Enterprise Agency)
SDG:	Sustainable Development Goals
SAG:	Stakeholders Advisory Group
SRIA:	Strategic Research and Innovation Agenda
STB:	Scientific and Technological Board
STO:	Council of Foundations, Vietnam
SUEN:	Turkish Water Institute
TAB:	Transdisciplinary Advisory Board
UN SDGs	United Nations Sustainable Development Goals
WFD:	Water Framework Directive
WP:	Work Package
WRC:	Water Research Commission, SA

Executive Summary

The Water Joint Programming Initiative (Water JPI) (www.waterjpi.eu) entitled "Water Challenges for a Changing World" was launched in 2010 and later formally approved by the European Council in December 2011. The Water JPI membership comprises a total of 20 Member States and 4 observer countries, which together represent 88% of the European public research, development and innovation investments in water resources. The Water JPI is dedicated to tackling the ambitious challenge of achieving sustainable water systems for a sustainable economy in Europe and abroad.

This report is a review and an assessment of the water JPI Strategic Research and Innovation Agenda (SRIA) in the light of the United Nations Sustainable Development Goals (UN SDGs). Its aim is to identify:

- The possible gaps in the Water JPI SRIA, which should be considered for future revision as a basis for the next version of the SRIA (Version 3.0) to be published in 2019.
- Possible priority topics for a Joint Transnational Call.

A Water JPI SRIA & UN SDGs workshop was held in Dublin on the 24th March 2017. A total of 44 participants attended the workshop including Water JPI Governing Board members, Strategic Advisory Group members, Water JPI partners and invited speakers. The aim of the workshop was to address the above two points and this report contains the outcome of this event.

The workshop was very successful in achieving its objectives to identify a number of SRIA gaps in relation to the UN SDGs and to propose possible thematic priorities for the Joint Transnational Call on SDGs.

The gaps identified during the workshop were analysed for inclusion in the next SRIA V3.0. Coupled to this, the thematic priorities identified and call text for the Joint Transnational Call, launched in October 2017 was on the agreed for the "Water resource management in support of the United Nations Sustainable Development Goals".

Introduction

The aim of Task 5.1 of WP 5 is to review and assess the Water JPI Strategic Research and Innovation Agenda (SRIA) in the light of the UN SDGs. For this purpose, a workshop was held in Dublin on the 24th of March 2017. The objectives of the workshop were two-fold: 1) to identify major gaps in the Water JPI SRIA V2.0 with regard the United Nations Sustainable Development Goals (UN SDGs) and 2) to propose thematic priorities for a Joint Transnational Call (JTC) on UN SDGs to be launched within the timeframe of IC4WATER (2017 – 2021).

The thematic priorities were selected among the UN SDG topics already addressed in the Water JPI SRIA, meaning that new topics to be proposed at the workshop for inclusion in the JPI SRIA should not be the basis for proposals on topics for the 2017 JCT.

This report contains the outcomes of the workshop based on the gaps identified in the Water JPI SRIA. The presentations on the possible gaps in the Water JPI SRIA vis-a-vis the UN SDG goals are to be found on the Water JPI website. Addressing the gaps in the Water JPI SRIA contributes to the understanding of what is currently in the in line with the UN SDGs, therefore giving some background knowledge for identifying thematic priorities for the JTC.

The report on the workshop is prepared based on the presentations and the notes kindly provided by the Water JPI secretariat and Louise Vaast (Irstea) during the workshop.

1. Water JPI in brief

The Water Joint Programming Initiative (JPI) (www.waterjpi.eu), entitled "Water Challenges for a Changing World", was launched in 2010 and later formally approved by the European Council in December 2011. The Water JPI membership comprises a total of 20 Member States and 4 observer countries, which collectively represent 88% of European public Research, Development and Innovation (RDI) investment in water resources. The Water JPI is dedicated to tackling the ambitious challenge of achieving "sustainable water systems for a sustainable economy in Europe and abroad".

The Water JPI provides an opportunity for broader cross-border cooperation, greater collaboration and a more unified focus on water RDI across Europe. The European water sector has a wide diversity of stakeholders and is highly fragmented, and water resources, water supply and wastewater treatment are often separately managed.

The Water JPI RDI agenda has five clear European dimensions:

1. Aligning the national RDI agendas, optimising their scope and the resulting funding efficiency; effectively covering the wide variety of European water environments.
2. Increasing cooperation among European professionals.
3. Designing, building and sharing large research and development facilities (e.g. experimental treatment plants).
4. Creating, maintaining and co-operatively exploiting networks of open-field experiments and scientific observatory systems (e.g. experimental watersheds).
5. Multiplying the scientific impact of European research, increasing its relevance and scientific leadership.

The Water JPI will produce science-based knowledge and evidence, leading to the support of implementation by informing of European Water policies, for example the Water Framework Directive

(WFD) . It aims at identifying and quantifying issues and problems and developing feasible technical and managerial solutions. It will coordinate water RDI in the participating countries and provide a powerful tool for international cooperation in the water area.

For more information, please refer to the **Water JPI Key Achievements 2011-2016** document.

2. Organisation of the Water JPI SRIA & UN SDG Workshop

The workshop entitled "Water JPI SRIA and UN SDGs" was organised by the task leader of WP5, Task 5.1, the Innovation Fund Denmark (IFD), in cooperation with the Environmental Protection Agency (EPA, Ireland), and with the support of the IC4Water WP 5.2 task leader, Norges Forskningsråd (RCN) and the task partners, as well as of the Water JPI Secretariat.

3. Workshop Objective

The objective of the workshop was to identify gaps in the Water JPI SRIA in relation to the UN SDGs achievement and to discuss and identify possible thematic priorities for the Joint Transnational Call for IC4WATER.

The outputs form the latter has informed the discussions of the IC4WATER Call Steering Committee (CSC) meeting held in Bonn June 22th 2017 with potential funding agencies.

4. Workshop Attendees

To provide a background and stimulate the discussions on the two aims of the workshop, eight speakers were invited to give presentations in the plenary session as the first part of the workshop, three from UN organisations dealing with the SDGs, one from CONFAP (National Council of State Research Support Foundations), one from the French governmental institution (IRD) working with water in an international context; and four from the Water JPI Stakeholders Advisory Group. The second part of the workshop consisted of breakout sessions around three groups addressing specific questions prepared by the organisers (cf sections 7 and 8).

The Workshop on the Water JPI SRIA in the context of UN SDGs was open to all Water JPI Advisory Boards members, the Water JPI Governing Board members, as well to the IC4WATER consortium partners. In addition, a number of invited speakers attended the workshop, and each Water JPI member was asked to nominate two experts to attend the workshop.

Categories of attendees:

- Water JPI Community: Water JPI Coordinator, Co-Chair, Secretariat, Water JPI Governing Board members, Advisory Boards and IC4WATER partners.
- Invited speakers: invited experts to present their views on the two selected topics for the workshop, among them notably several from the UN community involved in the outreach of the UN SDGs.
- Nominated national experts: Invited experts to attend the workshop and contribute in the discussions.

Annex I provides the list of the 44 attendees.

5. Workshop Programme

The workshop included two plenary sessions, as well as three breakout sessions running in parallel.

The IC4WATER Task 5.1 and Task 5.2 partners organised the three breakout sessions together with the Water JPI secretariat, including nominating conveners and rapporteurs from the group work.

The Programme is available in **Annex 2**.

6. Plenary session summary

Opening session

Bjørn Kaare Jensen (BKJ), IFD, WP5, Task 5.1 leader, opened the meeting and welcomed the participants.

Matt Crowe (MC), director of the Irish EPA, presented the strategic documents covering the research area and presented the historical background for the SDG's starting with Rio in 1997, where the concept of sustainable development emerged for the first time. Many countries agreed to sign the agreement, which was renewed in Paris 2015. He then raised a few key questions as a starting point for the discussions to take place during the workshop.

Plenary Session 1. General introduction

Introduction of the Water JPI by Dominique Darmendrail –Water JPI Coordinator

The EU Joint Programming Initiatives (JPI) are a new way to address grand challenges, by better coordination of existing RDI programmes and for reaching a critical mass. The Water JPI is one of the latest approved by the Council of Competiveness in 2011. Activities launched in 2012 were grouped with 20 members, four observers and the EC. These partners represent 88% of the public RDI investment on water in Europe. The Water JPI now has partnerships with South Africa (since 2015), Canada, Tunisia, Egypt, a Taiwan and Brazil.

The Water JPI has a number thematic activities, including the development and the update of the Strategic Research and Innovation Agenda (SRIA), Exploratory Workshops, Joint Transnational Calls, and Knowledge Hubs.

The Water JPI started by sharing a SRIA, produced a mapping exercise and launched a knowledge hub. A research platform and access to key research infrastructure, training (e.g. Webinar with EIP water) has been established.

The Water JPI has coordinated three Joint Calls on i) Emerging pollutants, ii) Waste Water Treatment and Water Reuse, and iii) Water challenges in Agriculture, Forestry and Freshwater Aquaculture. Two additional are planned (October 2017, February 2018). The SRIA is the reference document for these calls and has five themes:

- Ecosystems,
- Water system for citizens,
- Promoting competition in water industry,
- Wastewater bio-based economy,

- Closing the water cycle gap – Sustainable Water resources Management.

When starting the Coordination and Support Action (CSA) on International cooperation, the Water JPI decided that the UN SDGs should be the core of our activities. Water is central in SDGs 6 but also connected to other goals.

Water JPI is starting with a knowledge hub on Emerging contaminants and will aim to have a second one dedicated to UN SDGs' targets.

The view of the European Commission on the UN SDGs by Bjørn Kaare Jensen, IFD

In 2015 an EC position paper was prepared by an independent expert panel, which evaluated how the UN SDGs were aligned with the European programmes. There is a firm commitment at policy level to integrate the UN SDGs in EU policies and related programmes, while involving international partnerships. An example is how the SC5 Programme Committee of Horizon 2020 has integrated the UN SDGs in the H2020 Work Programme 2016 – 17 in a way that it cannot be ignored by the RDI community when applying for projects. The UN SDGs are also heavily influencing the text of the H2020 Work Programme to be launched for 2018-2020.

The Water JPI SRIA in brief, by Seppo Rekolainen, Finnish Ministry of Agriculture and Forestry

There has been major achievements and developments were met in the past, thanks to the Millennium Development Goals (MDG's). The Water JPI SRIA involves a significant participatory process (consultative Stakeholders Workshop, public consultation) and a transdisciplinary approach to develop it. It is not a guideline for research agendas but for the overall activities in the Water JPI. The Water JPI comprises currently five themes and cross cutting issues within the themes, but gaps still exist and the question is what is missing.

Water is a cross-cutting issue in the SDGs, an interconnector, a multiplier, as illustrated by the UN SGDs publication "Water and Sanitation Interlinkages in the 2030 Agenda". It is also a top risk priority for the World Economic Forum since 2015.

The Water in Agenda 2030, by Peter Koefoed Bjørnsen, UNEP-DHI Centre for Water and Environment

UN Water was quite active in the process of formulation of the SDGs. In order to understand the 2030 agenda, there is a need to go back to the Rio+20 outcomes document (published in 2012) with its processes feeding into the post-2015 Development Agenda. Compared to the Millennium DGs, the UN SDGs represent a simpler process, and are now relevant to all countries. Measurability also needs to be more precise.

The UN SDG 6 related to Water and Sanitation has six different targets and two crossing-cutting ones.

At first, there is no framework for their implementation. There is a need to try to establish a list of indicators, a timeline, and a way to monitor the activities, this process must be driven by the involved countries. The UN are responsible for collecting data and reporting. Some of the indicators are already covered by UN programmes. Some are monitored by the Joint Monitoring Programme (JMP), others are now being covered by the GEMI (Integrated Monitoring of Water and Sanitation Related SDG Targets) or GLAAS (UN-Water Global Analysis and Assessment of Sanitation and Drinking Water) programmes.

The global reporting will require the initiation of dialog with countries to identify the barriers, communicate around best practices and develop tools/guidelines.

The Food – Water – Energy nexus is crucial to address. The social dimension (poverty), the economic pillar, and the environmental dimension (the use of water) to appreciate the value of water should also be considered, in particular the social dimension of the interlinkages: water/health/poverty.

Plenary Session 1 - Comments and questions:

Q1: In China, one of the means to avoid water scarcity is the reuse of water. Is this covered by any of the Goals? Target 6.3 mentioned this option, but there is no indicator on that.

Q2: How close are the indicators? How will they be developed? Core indicators represent the minimum (approved by the statistical commission of the UN), there will be additional indicators for specific cases.

C1: The strategy document is about vision and agenda. I have worked in Mozambique, which is a typical city, with many people without water, relying on dry sanitation. Much work is needed in this field.

C2: Water architecture should also be addressed. There is an on-going debate about global water architecture. March 2018-March 2028 will be a new water decade.

C3: There is some shortage of data and methods on indicators. The research community and programmes could be informed and involved.

Plenary session 2. SRIA gap analysis in relation to UN SDGs

SRIA gaps in relation to UN SDG 6.4 by Ricardo Biancalani, Food and Agriculture Organization of the United Nations (FAO)

This presentation focused on the SDG process and the data flow from national to global level. Meta data structure has been created. It also questioned the capacity and preparedness of countries.

There are economic, environmental and social issues in the same target (6.4).

SDG steps: Information /Implementation (Projects & Policies) / Monitoring (Data).

- To choose what to do, we need the knowledge & information.
- Main issue & challenge is to come from data to knowledge.
- There is a need for decision support tools.

In this context, the Food and Agriculture Organization of the United Nations (FAO) has the three following main activities:

- GEMI – Integrated Monitoring of Water & Sanitation related SDG targets. A proof of concept in five countries producing the indicators. 65 countries identified, some no answers, answers from countries not identified (flexible). Goal, accelerate the achievement of the SDGs.
- Using remote sensing in support of solutions to reduce agricultural water productivity gaps.
- Water scarcity in agriculture.
    - Provide countries with support for their policy to implement agricultural initiatives through action and support capacity development, and promote initiatives that bring countries together.

FAO is leading the work on UN SDG target 6.4, with the two indicators. FAO is in charge of 6.4.1 and 6.4.2, but there is a new proposition for a 6.4.3 that would be dedicated to the number of people affected.

In terms of SRIA gaps, the followings were identified:

a) Look at it as a part of the information process:

- Proportion of agricultural output produced under rain fed conditions
- Irrigation requirements
- Policy support tools

b) Regarding Implementation:

- Farmers application

c) Regarding Monitoring:

- Data collection tools.
- Upgrading AQUASTAT.
- EFR determination at country level.
- Links between the research and the UN.

Q1: Monitoring parameters – are you looking at the quality of the water? For example, the impact of agriculture on the quality of the Water, which is important for policy makers.

We have it in mind but these are quantitative. Qualitative are under water quality target. GEMI initiative aims at monitoring and coordinating different indicators of different sectors to consider interlinkages.

SRIA gaps in relation to UN SDG 6.a.1 and 6.b.1 by Oriana Romano, Organisation for Economic Cooperation and Development (OECD)

The OECD is a co-custodian of the means of implementation targets 6.a and 6.b.

The SDGs, in particular SDG 6, call for a whole of government and a whole of society approach posing question on who does what, how and why.

OECD countries nowadays face several challenges, such as obsolete water infrastructures, extreme water-related events and water pollution. Megatrends such as growing population, climate change, urbanisation are likely to affect water quality and quantity in the future. The OECD has for long argued that water crises are governance crises: in view of implementing the SDGs, it is crucial to make sure that roles and responsibilities are clearly allocated, stakeholders informed and sectoral policies are coherent, amongst others.

Effective, efficient and inclusive water governance, as highlighted by the OECD Principles on Water Governance (OECD, 2015) is key for SDG 6implementation. In order to help countries identify strengths and weaknesses in their water governance systems, as well as what can be improved for the future, the OECD is developing an OECD Water Governance indicator Framework. It will support countries in carrying out a self-assessment on the existence and level of implementation of key governance dimensions. Indicators related to Principle 10 on stakeholder participation will inform target 6.b on local participation.

Comments and questions:

C1: Engagement of all stakeholders is often a top down approach, and the problem is to reach the less well represented in an inclusive way and how their interests can be voiced.

SRIA gaps in relation to UN SDGs 6.5 and 6.6 – Research & Innovation, Needs & Opportunities, Environment perspective by Peter Koefoed Bjørnsen, UNEP-DHI Centre for Water and Environment

If we do not meet the UN SDGs by 2030, we will have a more precarious situation.

3.9 trillions of US dollars is the annual investment needs to achieve the SDGs by 2030, 1.4 trillion being current investments.

We need to speed up the innovative solutions. What can be an effective tool to support UN SDGs?

Some themes of the Water JPI are relevant to look at:

- SDG 6.1 – Water harvesting and purification technologies.
- SGD 6.2 – Eco sanitation without water. Separation of urine and faeces.
- SDG 6.3 – Reuse of domestic and agriculture wastewater / emerging pollutants / industrial WWT techno /Nature based solution for wastewater treatment / Water quality standards.
- SDG 6.4 – Water use efficiency technology / method to quantify Environmental Water Reserve (EWR) / Methods to quantify available water resources / Scenario-projection tools for drought and water scarcity.
- SDG 6.5 – Water information system incl. big data, citizen science, EO / Decision support system / Early warning systems / Methods to estimate costs of actions versus no-action / Environmental sociology.
- SDG 6.6 – Earth Observation based monitoring / valuation of ecosystem goods and services / Ecosystem restoration system.

Many of these themes are in the SRIA. There is need to look at the larger area where knowledge has to be provided.

An international opinion on the call topics to be included in the IC4Water UN SDG call by Marie Christine Cormier Salem, French National Institute for Research for Sustainable Development (IRD)

IRD has a long-standing network of partners in French speaking countries of Africa, having focussed on Mediterrean and Tropical countries. A Strategic Orientation Plan has just been adopted with SDG at the heart. More than 7000 people are working on water actions and challenges. Field works are extended from the ocean to the river, and with a large spectrum of scientist. A consortium is built on multidisciplinary (environmental, biological and social sciences) in Southern countries (Inter-national Joint laboratories). Accumulation of a huge amount of data from Mekong Delta has taken place in Vietnam.

One example is a transect in Tanzania depending on the season (to compare water quality and quantity) to understand landscape organisation with the uses and knowledge.

If compared with the SRIA, there are no real gaps and needs to be explored. Nevertheless, some scientific challenges remain, such as:

- Local and extended knowledge to be combined, i.e. on discontinuity and continuity of freshwater resources.
- The link between science, policy and society to be strengthened.

An international opinion on the call topics to be included in the IC4Water UN SDG call by Claudio Furtado, Conselho Nacional Das Fundaçoes Estaduais de Ampara A Pesquisa (CONFAP)

2,5 M€ in innovation, 5% of public investment in safe water.

Interests for the Brazil:

- Sanitation – 16 % of BR people have sanitation.
- Water governance is crucial between states / regions to monitor
- Water for Forest and agriculture sectors– desalinisation of water. Need of development of innovation technologies.

Plenary Session 3 - Summary of findings of questionnaire concerning the IC4Water UN SDG call and the work of the Call drafting group by Johannes Holmen (RCN)

RCN is responsible for and holds the secretariat for the 2017 Water JPI Joint Call on UN SDGs. The presentation highlighted the outputs of the Working Group and, in particular the feedback from the questionnaire on suggestions for call topics as well as partners' preparatory and financial commitment.

Financial commitment was indicated from the following partners: CY, FR, SE, NO, MD, IE, EG, DE – adding up to a total of between €5- €7 million. A deadline for final commitment was set to the 12th of May 2017, one week before the Joint Call consultative meeting in Rome. Some partners argued in the questionnaire that a one-step procedure might be feasible if the total financial commitment was moderate.

Funders feedback:

- Funding principles (additional call costs need to be specified and to be agreed upon during preparation of the call Memorandum of Understanding - MoU);
- Implementation (Innovation and stakeholders' involvement should be encouraged in the call text);
- Evaluation process: it was suggested to include/strengthen an evaluation criterion for impact. The importance of a good and experienced chair for the evaluation panel meeting was emphasized. It was further suggested to involve relevant UN organisations in the evaluation process.

An anticipated schedule for the call and associated meetings was presented:

- 19 May 2017: Consultative meeting (Rome)
- 30 May 2017: Call pre-announcement
- 22 June 2017: CSC meeting 1 - Call Announcement and MoU finalisation (Bonn)
- 30 June 2017: Call launch
- 18 October 2017: CSC meeting 2 - eligibility check (Madrid)
- 13 December 2017: CSC meeting 3 - evaluation step 1 (Oslo)

Workshop attendees commented on the two Steps procedure:

- useful in a lot of applications,

- the number of Call Steering Committee meetings - are 4 CSC meetings really necessary?? -,
- the role of the workshop in generating ideas to be included in the call and in the H2020 work programme process.

In conclusion the Water JPI should make a position paper that is more concrete and have more content.

7. Breakout Sessions

The aim of the breakout sessions were to address two questions:

1) Identify gaps in the Water JPI SRIA in relation to the UN SDGs

2) Propose thematic priorities for the joint transnational call.

Identified gaps in the Water JPI SRIA in relation to the SDGs

There are a number of UN SDGs which are relevant to the water area, but the focus of goal 6 in particular identifies potential SRIA gaps.

UN SDG 6, targets and indicators

Below, the different targets of SDG 6 are listed to give a background to identify the gaps in the Water JPI SRIA. It should, however, be born in mind that other SDGs other than the SDG 6 also address water issues.

- 6.1. By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- 6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- 6.3. By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated waste water and substantially increasing recycling and safe reuse globally.
- 6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- 6.5. By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- 6.6. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.
- 6.a. By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, waste water treatment, recycling and reuse technologies.
- 6.b. Support and strengthen the participation of local communities in improving water and sanitation management.

Group discussions and outcome on SRIA gaps

During the breakout sessions, a number of gaps were identified based on the presentations and on the existing knowledge among the group participants. The outcome and conclusions from the discussions were to a certain degree characterised by the fact, that not all of the participants had an in depth knowledge about the content of the existing SRIA, for which reason a number of the gaps identified were in fact only partly missing from the SRIA. In the bullets below, it is indicated in brackets and italics whether the SRIA already to a certain degree covers this point.

The gaps identified in the three groups were as follows:

Group 1:

- Eco-sanitation with no/less water (SDG 6.2)
- Early warning systems (SDG 6.5)
- Awareness (citizens/institutions/governing bodies), i.e. about the water foot print concept for influencing the consumer behaviour (SDG 6.4, 6b)
- Water management and governance (6.5, 6b) (*SRIA 5.2.3 Promoting new governance and knowledge management*)

Group 2:

- Transboundary management (SDG 6.5)
- Alternative water sources for water supply (rain water, reclaimed wastewater) and purification for the purpose (SDG 6a)
- Source separation (SDG 6.2)
- Quantification and assessment of available water resources for water supply (groundwater and surface water) (SDG 6.4)
- Sociological aspects of water management and use (SDG 6b) (*SRIA 5.2.2 Connecting socio-economic and ecological issues*)
- Evaluation of water governance efficiency (SDG 6b) (*SRIA 5.2.3 Promoting new governance and knowledge management*)
- Interactions between policy and science for absorption of new knowledge in regulation and politics (various targets) (*SRIA 5.1.1 Promoting water RDI infrastructures for a better understanding of the water hydrological processes on different scales*)
- Water efficiency in industry, agriculture and domestic use, including water saving behavioural and technological aspects (SDG 6.4) (*SRIA 4.1.5 Ensuring the efficient use of water resources in the bio-economy sector; SRIA 4.2.3 Promoting reuse of water in irrigated agriculture and forestry*)

Group 3:

- Water reuse fit for the purpose (SDG 6.4) (*SRIA 4.2.3 Promoting reuse of water in irrigated agriculture and forestry*)
- Water efficiency in utilities and industry (Non Revenue Water) (SDG 6.4) (*SRIA 3.1.7 Developing and demonstrating water reuse and recycling concepts; recovering products and energy from treatment plants, SRIA 5.1.4 Innovating on practical, low-cost technologies treating wastewater to produce resources safe for reuse)*

- Innovative water infrastructure (SDG 6.1) (*SRIA 2.2.1 Processing towards flood-proof cities; SRIA 2.2.2 Improving the performance of water systems; SRIA Subtheme 3.1 Developing market-oriented solutions for the water industry)*
- Water rights (6.5, 6b)
- Groundwater in general in comparison with other water resources (SDG 6.4) (*SRIA 5.1.1 Promoting water RDI infrastructures for a better understanding of the water hydrological processes on different scales*)
- Impacts on climate change (quantity and quality) (xxxx) (*SRIA 5.1.2 Promoting adaptive water management for global change; SRIA 1.3.2 Developing innovative (or improved) tools for adaptation to hydro-climatic extreme events, especially floods; 1.3.3 Improving water management to mitigate the harmful impacts of extreme events (extreme weather events, impaired water quality*)
- Sustainable use of water/water savings, including awareness and concepts for promoting behavioural changes among users and organisations (6.4, 6b)
- Geographical holistic view on water management including urban, peri-urban and rural interactions (SDG 6.5)
- IWRM (SDG 6.5) (*SRIA Subtheme 5.1 Enabling sustainable management of water resources*)
- Geopolitical aspects (SDG 6.5)
- Translating data/big data into policy (SDG 6a) (*SRIA 1.1.5 Adapting and integrating our water/-ecosystem management planning and governance systems with better environmental data and information*)

From the group work and subsequent analysis, the following gaps can be derived and recommended for inclusion in the SRIA:

1. Use/reuse of alternative or recycled water (rainwater, reclaimed domestic wastewater, stormwater, desalinated sea water) and/or more diverse (groundwater) water sources for water fit for the purpose to mitigate water stress and water scarcity and the implications thereof in terms of water quality and new infrastructure
2. Water efficiency in industry (non-revenue water, water saving technologies and processes)
3. Behavioural and awareness aspects for sustainable water management
4. Smart data acquisition systems/ early warning systems

8. Thematic priorities for the Joint Transnational Call on SDGs

During the breakout sessions the following thematic priorities for the Joint Transnational Call were identified by the three groups:

Group 1:

- Multi-pressure under the context of climate change. Impact on water quality and ecosystems services
- Mitigation solutions
- Applying innovating solutions in a multi-pressure context
- Protecting ecosystems and their services in a multi-stress environment

Group 2:

- Water resilience (climate change effects)
- Water quality for different purposes
- Assess the 12 core indicators to 45 identified sub-themes (see Ricardo's presentation)

- How projects can feed into indicators (by 2021)

Group 3:

- Governance/ where and which aspects
- Water and health
- Behavioural changes in all sectors, including domestic use

As can be seen, the different groups identified quite different thematic priorities, although different aspects of effects on ecosystems and water quality and water management seem to be a priority for all groups coming from different angles.

It was noted that governance needs to be more precisely defined, and there was consensus in the plenum that it should be from a capacity development perspectives that this priority should gain attention. It was further noted that behavioural changes is in good correspondence with the unfolding of the UN SDG, and that it should not be restricted to the public and domestic domain, but also cover industrial and other private stakeholders activities.

Conclusions

The workshop was successful in achieving its objectives to identify SRIA gaps in relation to the UN SDGs, which were:

1. Use/reuse of alternative or recycled water (rainwater, reclaimed domestic wastewater, stormwater, desalinated sea water) and/or more diverse (groundwater) water sources for water fit for the purpose to mitigate water stress and water scarcity and the implications thereof in terms of water quality and new infrastructure

2. Water efficiency in industry (non-revenue water, water saving technologies and processes)

3. Behavioural and awareness aspects for sustainable water management

4. Smart data acquisition systems/ early warning systems

The workshop also proposed a number of thematic priorities to be part of the joint transnational call on SDGs, of which there was consensus on two areas to included, namely climate change effects on and protection of ecosystems and water quality. Also themes focusing on water governance and water management were recommended to be addressed.

The presentations were all relevant to the topics of the workshop, and the audience was very active during the whole workshop.

Annex 1: List of Attendees

Name	Last Name	Organisation / Country
Juliette	Arabi	Water JPI Secretariat
Riccardo	Biancalani	FAO
Bart Jeroen	Bierens	RVO, The Netherlands
Peter Koefoed	Bjørnsen	UNEP-DHI Centre for Water and Environment, Denmark
Marie-Christine	Cormier-Salem	IRD, France
Matt	Crowe	EPA, Ireland
Dominique	Darmendrail	Water JPI Coordinator
Harm	Duel	Deltares, The Netherlands
Agathe	Euzen	Water JPI STB, LATTS-CNRS
Patrick	Flammarion	Allenvi-Irstea, France
Miguel	Gilarranz	MINECO, Spain
Alan	Gilmer	DIT, Ireland
Joël	Groeneveld	F.R.S.-FNRS, Belgium
Prisca	Haemers	IenM, Netherlands
Johannes	Holmen	RCN, Norway
Eleanor	Jennings	DKIT, Ireland
Bjørn Kaare	Jensen	IFD, Denmark
Margaret	Keegan	EPA, Ireland
Mary	Kelly-Quinn	UCD, Ireland
Padraic	Larkin	Water JPI Co-Chair
Kristina	Laurell	Formas, Sweden
Antonio	Lo Porto	Water JPI SAG, EurAqua
Alessandro	Lotti	ISPRA, Italy
José	Matos	Water JPI SAG, EWA
Sibongile	Mavimbela	WRC, South Africa
Rui	Munha	FCT, Portugal
Áine	Murphy	EPA, Ireland
Dörfliger	Nathalie	AllEnvi-Brgm, France
Le Toan	Nguyen	STO, Vietnamese embassy in France
Elif	Okumus Oksuz	SUEN, Turkey
Fiona	Regan	DCU, Ireland
Seppo	Rekolainen	Water JPI STB, Finish Min. Agriculture and Forestry
Oriana	Romano	OECD
Andrea	Rubini	Water JPI SAG, WssTP
Claudio	Silva Furtado	CONFAP, Brazil
Charlie	Stratford	CEH NERC, UK
Osman	Tikansak	SUEN, Turkey
Louise	Vaast	Irstea, France
Bertrand	Vallet	Water JPI SAG, EurEau
Kata-Riina	Valosaari	AKA, Finland
Teppo	Vehanen	Water JPI SAG, EIFAAC
Alice	Wemaere	EPA, Ireland
Saskia	Wohlgemuth	Jülich, Germany
Leif	Wolf	KIT, Germany

Annex 2: Programme

Water JPI SRIA & UN SDGs WORKSHOP, 9:00 – 16:30, 24 March 2017, Herbert Park Hotel, Ballsbridge Terrace, Dublin, Ireland

9:00 REGISTRATION AND COFFEE

OPENING SESSION

9:30 Bjørn Kaare Jensen, IFD: Welcome and introductory remarks

9:40 Matt Crowe, Director of Irish EPA: Water JPI and EPA

PLENARY SESSION 1; General introduction

9:50 Dominique Darmendrail, Water JPI Coordinator: Introduction of Water JPI

10:15 Bjørn Jensen, IFD, Presentation of the view of the European Commission on the UN SDG 6

10:30 Seppo Rekolainen, SYKE and Water JPI Advisory group: Water JPI SRIA in brief

10:45 Peter Koefoed Bjørnsen, UNEP Centre on Water and Environment: UN SDG on water and water across the SDGs in brief

11:10 COFFEE BREAK

PLENARY SESSION 2; SRIA gap analysis in relation to UN SDGs

11:30 Riccardo Biancalani, FAO Land and water: SRIA gaps in relation to UN SDG 6.4

11:50 Oriana Romano, OECD: SRIA gaps in relation to UN SDG 6.a.1 and 6.b.1

12:10 Peter Koefoed Bjørnsen, UNEP Centre on Water and Environment: SRIA gaps in relation to UN SDG 6.5 and 6.6

12:30 LUNCH

PLENARY SESSION 2 cont.

13:15 Marie Christine Cormier Salem (IRD): An opinion of a national research organization on the call topics to be included in the IC4Water UN SDG call

13:35 Claudio Furtado (CONFAP): An international opinion on the call topics to be included in the IC4Water UN SDG call

13:45 Johannes Holmen, Research Council of Norway (RCN), IC4WATER WP 5 leader: Summary of findings of questionnaire concerning the IC4Water UN SDG call and the work of the Call drafting group

14:10 COFFEE BREAK

3 BREAKOUT SESSIONS to discuss and suggest recommendations for revising SRIA

14:30 Bjørn Jensen, IFD, Introduction to breakout sessions

14.40 Group discussions chaired by IC4WATER WP5 partners

PLENARY SESSION 3; Findings

15:45 Presentation of findings of breakout sessions

CLOSING SESSION

16:15 Dominique Darmendrail, Water JPI Coordinator; Bjørn Kaare Jensen, IFD: Conclusions, next steps, and closing remarks

16:30 END OF MEETING