

Water



International Cooperation

**Proceedings from the Workshop on
Future Cooperation in Research and Innovation
with countries beyond Europe**

Lisbon, Portugal – 4th December 2019

www.waterjpi.eu/international-cooperation/international-cooperation-workshop/

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Disclaimer

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Acknowledgements

The Water JPI has received funding from the European Union’s Horizon 2020 Programme for Research, Technological Development and Demonstration under Grant Agreement n°730264 (**IC4WATER**). We also wish to acknowledge the invaluable contribution from all of the invited workshop speakers and attendees, the **IC4WATER** CSA partners, the Water JPI Governing Board, as well as the European Commission funding.

List of Abbreviations/Acronyms

| | |
|---------------|--|
| ANR | French National Research Agency |
| AUB | American University of Beyrouth |
| BAT / BATNEEC | Best Available Technology / Best Available Technology Not Entailing Excessive Cost |
| CEWP | China–Europe Water Platform |
| EC | European Commission |
| EurEau | European Federation of National Associations of Water Services |
| FCT | Fundação para a Ciência e Tecnologia |
| GPC | Groupe de Programmation Conjointe |
| GDPR | General Data Protection Regulation |
| IC | International Cooperation |
| IPR | Intellectual Property Rights |
| JPI | Joint Programming Initiative |
| NSF | National Science Foundation, USA |
| RDI | Research, Development and Innovation |
| PRIMA | Partnership for Research and Innovation in the Mediterranean Area |
| SA | South Africa |
| SDGs | Sustainable development Goals |
| SMEs | Small and Medium Entreprises |
| UN | United Nations |
| WRC | Water Research Commission, South Africa |
| Water Europe | Former Water Supply and Sanitation Technology Platform |

Executive Summary

The Water Joint Programming Initiative, Water JPI (www.waterjpi.eu), entitled “Water Challenges for a Changing World”, was launched following a decision of the Competitiveness Council on 6 December 2011.¹ As of June 2019, the Water JPI membership includes a total of 23 member countries and three observer countries, which collectively represent 88% of European public research, development and innovation investment in water resources. The Water JPI is dedicated to tackling the ambitious grand challenge of achieving “sustainable water systems for a sustainable economy in Europe and abroad”.

The Water JPI, as part of its supporting Coordination and Support Action [IC4Water](#),² is looking at opportunities to develop a common strategy for International Cooperation (IC) with other European initiatives. IC4Water was launched in January 2017 and is funded by the European Commission under Horizon 2020. IC4Water aims to implement joint activities in a dedicated effort to reinforce IC in research, development and innovation to address global water challenges.

The present report contains the proceedings of the “Workshop on Future Cooperation in Research and Innovation with countries beyond Europe” which took place on 4 December 2019 in Lisbon, Portugal. This workshop, hosted by the Portuguese Research Funding Agency (Fundação para a Ciência e Tecnologia - FCT) followed two workshops held under [WaterWorks2015](#) and two workshop held under [IC4WATER](#). It was designed to elaborate a common strategy with other relevant EU and international initiatives on international cooperation in the context of research, development and innovation (RDI) activities. The first [IC4WATER](#) workshop took place in September 2018 with the participation of 15 different key initiatives, organisations and stakeholders and with the European Commission (EC), the United Nations (UN), the Groupe de Programmation Conjointe (GPC) and the Water JPI partners. The second [IC4WATER](#) workshop, held in June 2019, was addressed to researchers and was attended by 42 participants. The first two [IC4WATER](#) workshops were organised by T2.4 (see below for objectives and outputs). This third [IC4WATER](#) workshop on IC models was targeting funders beyond EU and was attended by 40 participants representing international funding agencies, international initiatives (PRIMA, CEWP, Belmont Forum) and representatives of the Water economic sector. It aimed at:

- collecting the views from International / non-European initiatives,
- better understanding the difficulties faced to join JPI activities,
- proposing models for further cooperation with different types of partners.
- considering how to deal with possible different preferences from the economic sector (in cooperation with WP3).

This should help establishing, when possible, alliances with selected RDI international programmes. For preparing the workshop and get broader feedbacks, a survey was undertaken in the frame of the discussions to be held.

The master presentation is available from the Water JPI website: <http://www.waterjpi.eu/international-cooperation/international-cooperation-workshops/workshop-on-future-cooperation-in-research-and-innovation-with-countries-beyond-europe>

The workshop discussions highlighted the needs to co-construct a Research and Innovation agenda and related implementing actions, to co-define the priorities, to share the global objectives and means to achieve them, to have flexible procedures, an equitable approach and some incentives to overcome the barriers on IC.

¹ [Council conclusions](#) on the launching of the joint programming initiatives on “Healthy and Productive Seas and Oceans”, “Urban Europe – Global Urban Challenges, Joint European Solutions”, “Connecting Climate Knowledge for Europe”, “Water Challenges for a Changing World” and “The Microbial Challenge – An Emerging Threat to Human Health” – Adoption 17424/11 of 29 November 2011.

² <http://www.waterjpi.eu/implementation/supporting-projects/csa-ic4water>

Water JPI Workshop on Future Cooperation in Research and Innovation with countries beyond Europe, 4 December, 2019, Lisbon

1. Introduction

The Water Joint Programming Initiative, Water JPI (www.waterjpi.eu), entitled “Water Challenges for a Changing World”, was launched following a decision of the Competitiveness Council on December 6th 2011³. As of June 2019, the Water JPI membership includes a total of 23 member countries and three observer countries, which collectively represent 88% of European public research, development and innovation investment in water resources. The Water JPI is dedicated to tackling the ambitious grand challenge of achieving “*sustainable water systems for a sustainable economy in Europe and abroad*”.

Water challenges are global as recognised by UN Sustainable Development Goals (SDGs) or the World Economic Forum⁴ (since 2015 - nearly 900 experts took part in the Global Risk Perception Survey) as the most important risk in terms of impacts to the economy and society in the upcoming years. Water crises, associated with the failure of climate change adaptation, are also perceived as more likely to occur and having an impact than the average risk. Global water requirements are projected to be pushed beyond sustainable water supplies by 40% by 2030⁵.

In this context, the outreach and opening of the Water JPI to third country partners is increasingly raising interest among the latter (with increasing activities of the beyond Europe countries in Joint Transnational Calls). Now the Water JPI, as part of its supporting Coordination and Support Action [IC4Water⁶](#), is looking at opportunities to develop a common strategy for international cooperation, in cooperation between the Water JPI members, European initiatives (such as the other JPIs) and International partners (such as the Belmont Forum, the Global Water Research Coalition, or targeted non-EU countries). [IC4WATER](#) therefore concentrates its activities on developing a strategy for IC development and on contacting the targeted countries, as identified during different workshops, to discuss possible cooperation models.

To date, the Water JPI has set up contacts and initiated Joint Actions, including Joint Transnational Calls, with several international partners, as outlined in **Figure 1**. There have been several Water JPI activities on IC, including two mapping exercises of international activities (2015 and 2019 - further details are available from the [Water JPI website⁷](#)).

³ [Council conclusions](#) on the launching of the joint programming initiatives on 'Healthy and Productive Seas and Oceans', 'Urban Europe - Global Urban Challenges, Joint European Solutions', 'Connecting Climate Knowledge for Europe', 'Water Challenges for a Changing World' and 'The Microbial Challenge - An Emerging Threat to Human Health' – Adoption. 17424/11 of 29 11 2011.

⁴ <http://reports.weforum.org/global-risks-2015/part-1-global-risks-2015/introduction/>

⁵ 2030 Water Resources Group, 2009.

⁶ <http://www.waterjpi.eu/implementation/supporting-projects/csa-ic4water>

⁷ <http://www.waterjpi.eu/international-cooperation>

Water JPI Workshop on Future Cooperation in Research and Innovation with countries beyond Europe, 4 December, 2019, Lisbon

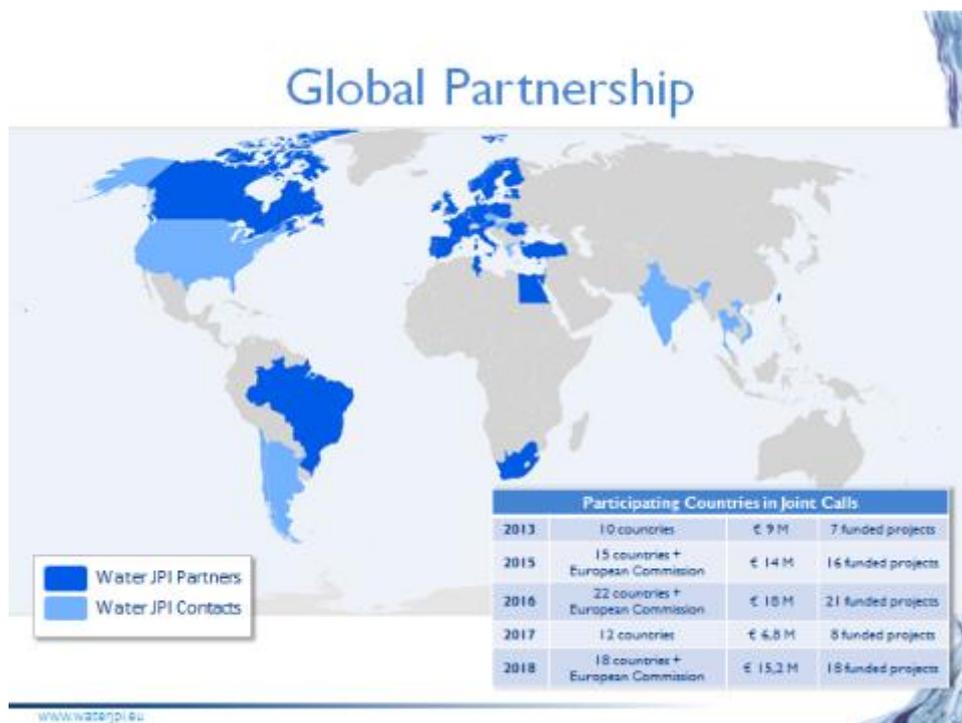


Figure 1. Water JPI current Joint Calls, partners and contacts.

Two workshops to develop “International Cooperation in RDI for tackling global water challenges” were organised in 2017 to discuss regional specificities and cooperation opportunities:

- Workshop dedicated to [Africa and the Mediterranean area](#) (Tangier, March 2017); and
- Workshop dedicated to [America](#) (Montreal, April 2017).

More recently, the Water JPI organised different workshops targeting various IC audience in the context of Joint Actions developed by European initiatives:

- Workshop with [European peer initiatives “Towards a Common Strategy on International Cooperation”](#), Vienna in September 2018; and
- [Workshop targeted at the research community](#) (from both EU/Associated and non-EU countries) participating in the Joint Actions implemented by these initiatives involving international cooperation, Paris in June 2019.

This additional workshop aims at exchanging with peer international institutions interested in joint initiatives on a voluntary basis in order to increase the value of relevant Research and Development funding through joint planning, implementation and evaluation of national research programmes, and contributing to elaborate the overall strategy for developing the Water JPI international network, building on the connections already / to be achieved. Strengthening the national / European knowledge position should be an important criterion for achieving policy objectives within their defined timeframe (e.g. UN SDGs for 2020 and 2030).

Building on the previous workshops with European initiatives and researchers and on the geographical workshops hold in 2017, this workshop aims at collecting the **views from International / non-European initiatives and better understanding the difficulties faced to join JPI activities.**

2. Methodology

2.1. Preparatory survey

A survey on international cooperation development and progress was sent to different stakeholders:

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- Public Research funders / network of Public Research funders / Public – Public Partnerships
- Private Research funders / network of Private Research funders
- International initiatives and institutions
- Foundations involved in Water related actions
- Public – Private Partnerships

The results of the 23 collected contributions, presented at the workshop, gave a state of the play on International multilateral cooperation from the International organisations / initiatives perspective, main barriers for such cooperation. Responding institutions suggested also possible Joint Actions that could be considered for making progress. These contributions complemented the background document compiling outputs of the four workshops hold with different stakeholders and supported discussion.

2.2. Synthesis of previous Water JPI workshops related to International Cooperation

A note of the four previous Water JPI workshops summarising discussions on “International multilateral cooperation in Research and Innovation programmes with countries beyond Europe” was provided to the participants prior to the workshop, in order to support the discussions with peer international institutions interested in joint initiatives. The main outputs issued by research and innovation funders and researchers’ communities (cf. Annex 1) were:

- Incentives for developing IC
- Added values and advantages of IC
- Barriers encountered in the context of IC
- Proposed suggestions and solutions

2.3. Lisbon Workshop objectives

This workshop aims at:

- Collecting views from International / non-European initiatives and better understanding the difficulties faced to join multi-lateral activities as developed by JPIs
- Connecting to needs already identified
- Identifying possible solutions for overcoming barriers of international cooperation in Research and Innovation programming.

2.3. Workshop Audience

Participants included Water JPI partners and RDI programme managers, as well as few researchers and economic sector representatives invited to provide a perspective on IC challenges. Annex 2 provides a list of all attendees and the initiatives they represented in the workshop.

There were 40 attendees at the workshop, both physically and virtually. The attendees represented international funding agencies, international initiatives (PRIMA, CEWP, Belmont forum) and the water Economic Sector (EurEau).



2.4. Workshop Programme

The workshop programme is available in Annex 3. The workshop included a plenary session followed by two breakout sessions.

During the **morning plenary session**, the state of international cooperation in water RDI and the results of the meeting preliminary questionnaire were presented. The international initiatives gave a brief presentation on their perspectives on international cooperation. The keynote speakers' biographies are available in Annex 4.

During the **afternoon's breakout sessions**, the attendees being divided into two groups and asked to discuss different topics:

- 1) Specific needs for innovation / connection to economic sector
- 2) Possible Models for Cooperation

For the breakout group on "Specific needs for innovation / connection to economic sector", the following questions were asked to start discussions:

- Connecting current activities / programmes to Innovation for enhanced development and uptake?
- Identifying and prioritising activities
- Which activities could be developed jointly between public funding agencies and companies?

For the breakout group on "Possible models for cooperation" a synthesis note of the four past workshops and the following first questions were provided prior to the meeting discussions:

- Do you agree with the statements? The proposals of further actions?
- Is something important missing? E.g. connection research funding and development funds?
- What to prioritise for progressing?
- What to do different?

3. Proceedings

The [Master presentation](#) is to be considered as part of these proceedings.

3.1. Welcome and Introduction

The FCT host, Rui Munhà, opened the workshop by welcoming the participants.

The **Water JPI coordinator, Dominique Darmendrail**, presented the [aims of the workshop](#), the general Water JPI activities, including the Water JPI mapping of research, development and innovation activities in seven targeted countries (Brazil, Canada, China, India, South Africa, USA and Vietnam) and first contacts which lead to participation in Water JPI transnational calls with contributions from South Africa, Brazil, Canada, Egypt, Taiwan and Tunisia. She also provided a brief overview of the outcomes of the first workshops dedicated to International Cooperation (IC), which took place in 2017, 2018 and 2019 with different targeted audiences. She highlighted the expectations for identifying actions for developing internationalisation in close cooperation with the Water JPI members and identified networks and institutions.



Prior to the planetary discussions, the [results of the online survey](#) on the state of international cooperation within the Water JPI partners was presented. The questionnaire highlighted that the main barriers and difficulties for international cooperation include:

- Differences on the RDI strategies and priorities depending on the countries
- Differences of national rules - administrative procedures and obligations - common evaluation process, selection criteria, impact, etc.
- Trust between partners
- General rules on Open access, GDPR, IPR
- Absence of alignment in procedures, practices.

3.2. Plenary Session

Antonella Autino (PRIMA Foundation) chaired the plenary session. The workshop participants were asked to share their experiences in terms of involvement to date in International – EU cooperation but also with economic sectors in this context, perceptions of cooperating in the international context of the JPI and their

recommendations, issues/obstacles to be considered. She introduced the speakers on their perspectives from Third Countries.

John Dini (Water Research Commission - WRC) shared the [South Africa \(SA\) experience and feedbacks](#) on the international cooperation in the Water JPI framework. He pointed out the following key challenges for WRC:

- Asymmetries in research agenda setting especially North/South asymmetries: “European leadership”, “valorising European know-how” vs. “mutual benefit and equal footing”, “co-construct joint RDI action”
- Misalignment of systems, procedures between SA and JPI: timeframes, evaluation procedures, contracting, reporting, travel plan approval
- SA is not seeing full potential benefits of projects it co-funds
- Limited financial resources to allocate to Joint Calls

He suggested to:

- Broaden Water JPI membership and cooperation (developing countries, other water-related EU platform),
- Identify sufficiently overlapping areas of mutual benefit
- Better coordination between co-funding partners
- Set more streamlined administrative processes
- Use technology optimally to support collaboration (remote connections to key meetings)

PRIMA expressed sharing the same experience and views from north-south perspectives.

Diana Carlos and Ana Mendes (Portuguese Environmental Ministry), representing the China Europe Water Platform (CEWP), explained that [CEWP goals](#) are to strengthen cooperation with international organizations and programmes, and therefore explore possibility for joint action with Water JPI. They highlighted the problem of **alignment of programmes** between European countries and China, since each country has their own internal rules and procedures. They would contribute for definition of key priority areas of cooperation between Europe and China in the Water Sector.

In April 2019 in Budapest a workshop was held over experts from both China and Europe to identify thematic areas for potential EU-China water research structural projects on Water Management and Ecological Security, Water and Energy, Water and Urbanisation, Water and Food Security.

In addition, in November 2019, the CEWP expressed its willingness to explore initiatives to enhance joint research. Their priority areas are: water savings, smart water conservation, sustainable hydropower, ecological protection, source to sea management. Their funding support desk studies and workshops organisation for in-depth roundtable discussion.



Rabi Mohtar (American University of Beyrouth - AUB, Lebanon) presented the [South perspective on challenges in international cooperation](#), from a researcher perspective.

He highlighted some international actions with:

- Partnerships for International Research and Education as the ones done at the AUB, as the Water – Energy – Food – Health Nexus
- Key global challenges, such as the virtual Water trade or the impacts of some energy sector trade, in particular their trade-offs with local water competition and global food security
- How these are addressed by RDI programmes, such as some examples from the American National Science Foundation (NSF) on:
 - Accelerating Research through International Network-to-Network Collaborations
 - Research Coordination Networks
 - Innovation as the Nexus of Food, Energy and Water Systems
- Belmont Forum, where cooperation partners not covered by participating funding agencies are eligible to join consortia at their own expenses,
- Future Earth programmes, such as the one hold by the Cyprus Institute covering the Middle East and North Africa including the eastern Mediterranean and the Gulf States
- The difficulties of South Countries in succeeding in PRIMA calls which include EU countries, EU associated countries and South countries (non necessarily EU associated).

Bertrand Vallet (EurEau) presented the [perspective from economic sector side](#), highlighting barriers and bottlenecks for the participation of water services companies in such cooperation:

- Lack of national resources to allocate for joint action and to networking,
- Difficulties to coordinate participation nationally,
- Absence of national strategies/priorities or of alignment of these national priorities with international agenda
- Joining national resources at international level for creating a critical mass necessary to tackle global challenges

However, they see added value. Their motivations are:

- Accessing to existing knowledge, good practices and experiences to progress more rapidly
- Contributing to increased and faster knowledge transfer from research results to public policies/policy-makers
- Extension of market opportunities in a shorter time line

The lessons they learned were:

- Legal difficulties in establishing collaboration agreements
- Benchmarking is to improve

Alessandra Nauditt (Water future / Future Earth) presented another inputs from international research performing organisations initiatives: [Sustainable Water Future programme](#). She presented the Water JPI Workshop on Future Cooperation in Research and Innovation with countries beyond Europe, 4 December, 2019, Lisbon

Programme of Future Earth, a scientific, policy-relevant and solution-oriented global water research programme for sustainable development integrating research, stimulating innovation and building capacity.

The International Conference “Towards a Sustainable Water Future” (September 2019, Bengaluru, India) and the Budapest Water Summit (October 2019, Budapest, Hungary) recommended:

- Creating a digital environment and architecture
- Promoting novel data and tools in a digital architecture
- Developing capacity to deliver digital transformation in the water sector

Moving forward to these objectives requires engagement of a broad community of stakeholders to understand specific needs and considerations. The Water JPI is a nice opportunity to reach out multilaterally to different stakeholders. Future Earth and the Water Future programmes can also help identify specific research needs in developing the integrated digital water management framework.

Dominique Darmendrail chaired the **plenary discussion session on common barriers** instead of Maria Uhle (NSF / Belmont Forum), who was delayed. The discussions included:

- Equal footing vs. multilateral actions (e.g. China and EU) but also in the way we are proceeding and integrating new partners
- Cofounding limitations (e.g. for South and under development countries)
- Participation of new participants/partners in multilateral activities
- Facilitating mechanisms of participation: synchronisation, transactions costs
- Effective co-construction on “Agenda/Actions” (equal considerations)

The necessity of incentives to overcome the barriers on international cooperation was emphasized as well as to have converging priorities to define common priorities and work. However, it is currently still difficult for European incentives to fund other regions research.

Synchronizing funding programmes must also be a priority to develop actions or projects.

As it is important to know the partners’ procedures and actions, if regularly procedures, strategies and programmes change, it takes some time to researchers to adapt and learn new info and procedures and need to restart the process again. This will also impact motivation of research and activities. Therefore, long-term funding and cooperation strategies from different countries and different regions would be a benefit, in particular for complex issues (e.g. Nexus as a good example). Nevertheless, with annual budget setting, It is very difficult for all organisations to look at longer-term cooperation and activities.

It was suggested that involving organisations that are well ranked and known from the society can also help communities to get involved and include resources that in other way would not be possible.

To conclude the plenary session, **Panagiotis Balabanis (EC, DG Research and Innovation)** presented the [progress regarding negotiations of Horizon Europe with international cooperation](#). The Commission proposal is based on a € 100 billion research and innovation funding programme for seven years (2021-2027). Feedback from web-based consultation and on the European Research and Innovation Days (September 2019) highlighted the importance of:

- Strengthening international cooperation to effectively address global challenges such as those related to climate change
- Supporting and facilitating the mobility of researchers and international knowledge production and exchange
- Supporting industrial leadership and achieving sovereignty in key technologies
- Science diplomacy
- Promoting shared values and principles in our scientific and technological relations with other countries

Cluster 6 related to “Food, Bio-economy, Natural resources, Agriculture and Environment” also aims at promoting leading international cooperation activities in the field of water challenges.

He raised some issues for discussion:

- How to balance the sectorial/geographical policy perspectives?
- How to align with the new Commission's priorities and international commitments?
- What type of collaborative projects and funding mechanisms for international cooperation (e.g. joint calls, co-funding mechanisms...)?
- How can we concretely 'step-up' our actions with respect to business as usual?
- What synergies should we seek between Horizon Europe and other EU programmes

3.3. Breakout sessions

During the afternoon's breakout sessions, the attendees were divided into 2 groups and asked to discuss the following topics:

1. Specific needs for innovation / connection to economic sector
2. Possible models for cooperation

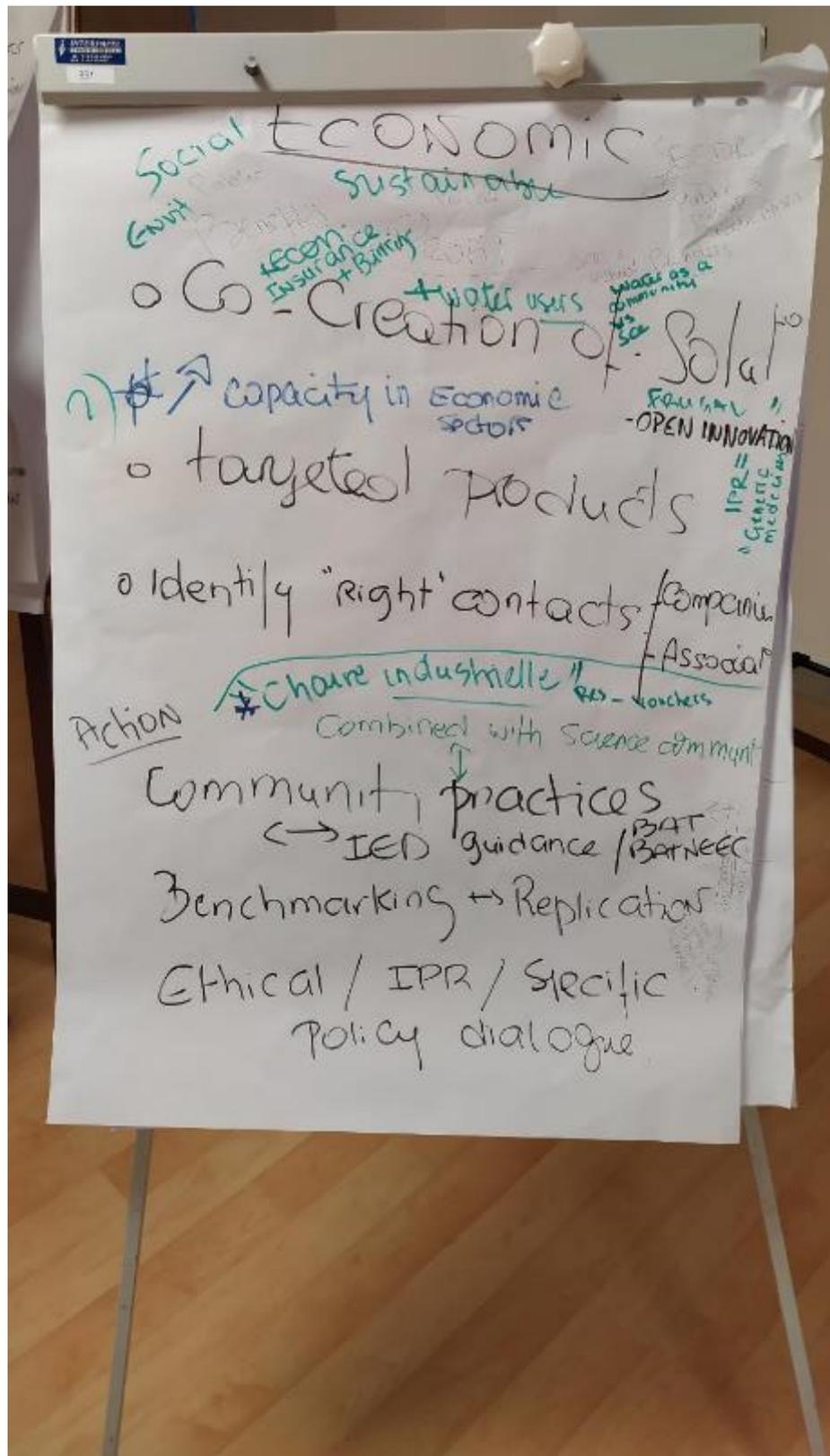
Each group was given the chance to contribute to both topics, based on the synthesis of the four Water JPI workshops. The Synthetic note summarising previous discussions on "International multilateral cooperation in Research and Innovation programmes with countries beyond Europe" was provided to the participants together with specific questions:

- **For the group " needs for innovation and economic sectors:**
 - Connecting current activities / programmes to innovation for enhanced development and uptake?
 - Identifying and prioritising activities
 - Which activities could be developed jointly between public funding agencies and companies?
- **And for the group "models of cooperation":**
 - Do you agree with the statements in the document? What are the proposals of further actions?
 - Is something important missing? E.g. connection research funding and development funds?
 - What to prioritise for progressing?
 - What to do different?

A) Outputs of the Innovation and economic sectors breakout sessions

There are key drivers for the economic sectors for International RDI cooperation (route to market for innovative solutions; increasing Capacity / skills in economic sector staff; or conversion to a more sustainable economic / business model - responsible companies, integration of longer term objectives).

The Water JPI should consider to target the Water economic sector (both public and private which have different drivers: Private – profit driven, Public – Society Benefit driven, Water as a service versus Water as a community), but also other Water users (e.g. energy, beverage ...).



Several types of actions were also suggested, such as:

- Co-creation of solutions (to be closed to the “local” demands)
- Development of targeted products
- Identification of exploitable results, which could be further exploited
- Identification of right contacts (in companies, professional associations),

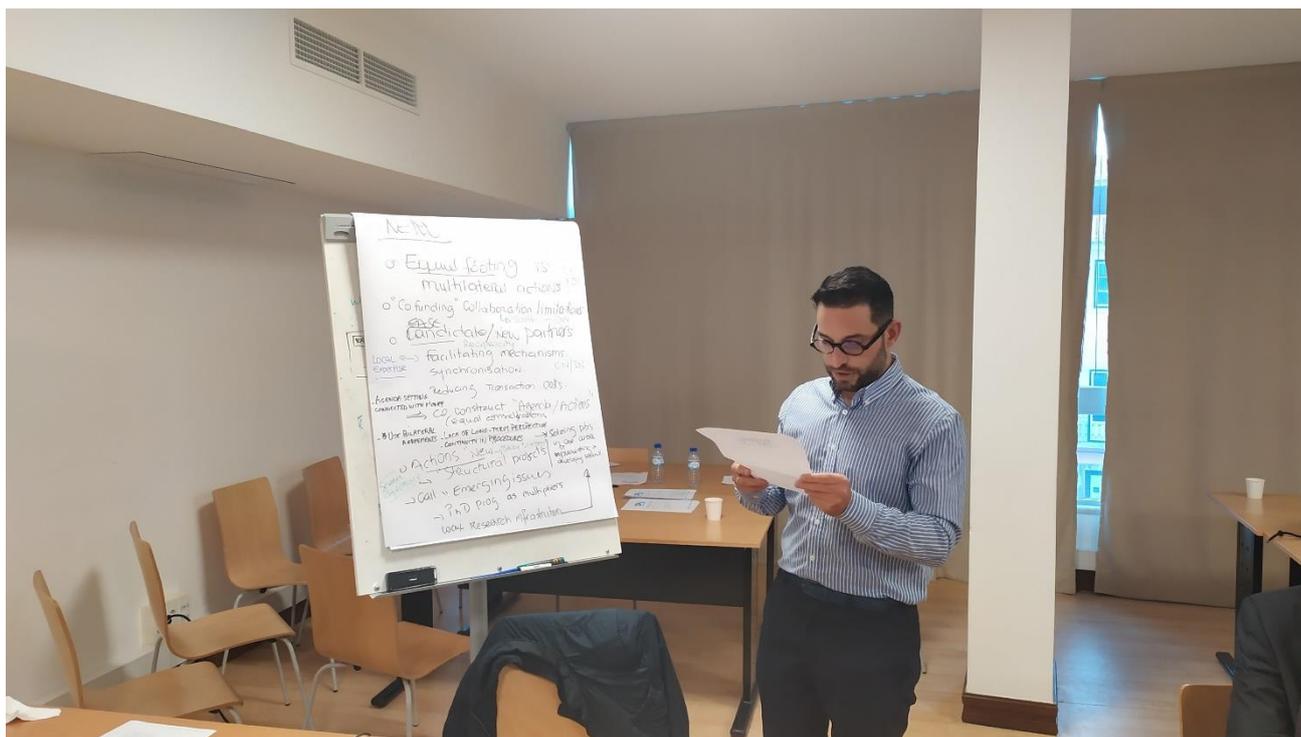
- Opportunities for benchmarking / replication of solutions which are a key barrier identified, as it requires in most cases maturation, transferability assessment (including affordability) / adaptation to local conditions before industrialisation
- Development and launch of specific “RDI instruments” for economic sectors’ contributions (e.g. “Chaires industrielles”, Research vouchers, Incentives for Researcher jobs in Small & Medium Entreprises (SMEs), Industrial PhD sponsorship
- Support of Community of Practices as it’s done in other policy areas (example given : Industrial Emissions Directive – BAT / BATNEEC and related guidance, see existing RDI funding models [ACCELNET](#) and [RCN from US NSF](#))
- Capacity Building on demonstration phase, knowledge brokerage, use of [GEOSS Portal](#).

Industrialisation of existing solutions (vs. valley of death of Innovation) has been a key issue discussed with the two groups. Several missing bricks were identified (Identify what is relevant for innovation transfer, Support from public innovation funders, Fiscal incentives, decreasing risks and acceleration mechanisms for start-up and SMEs, Commercialisation funding to bridge the valley of death). Act on the whole chain (from demand identifications to industrialisation is critical. Nevertheless, the Water JPI members raised the question of the role of the JPI at this level (vs. role of other European actors - EC, European Innovation Platform on Water, Water Europe). This will have to be treated at the JPI Governing Board level.

B) Outputs of the Models of Cooperation breakout sessions

The attendees highlighted that:

- Trust between partners involved in the process, including multilateral calls, is needed, which requires time, effort and interest from all sides (including involvement of policy decision)
- The administrative procedures and obligations are generally important. Common and shared procedures, at both funding and research levels, are necessary to enable joining forces. The systems must be flexible to define and implement models and programmes.
- Acceptation of common process on evaluation, criteria and funding conditions, keeping in mind a common procedure and system.
- A unique submission platform was considered as a plus.
- It is necessary to negotiate with all involved partners at all stages and levels, and to co-define priorities, not only between EU members but also with other countries (e.g. China, India) and with the EC (that may have different priorities from countries). It also requires to co-design with national, European, international, public, private partners. For some countries there is the need to have a high level political agreement. Commitment and planning must be done at a longer term level and perspective.
- Need of general alignment for facilitating participation of different partners, which requires to know more the partners, their procedures and means of acting (from initial contact to pilot action implementation (more initial negotiation, less surprises).
-



The main difficulties for international cooperation are

- The different timelines in programming in the different countries. It is especially difficult for strategic countries (e.g. USA, Canada, China)
- Uncertainties on “Association Status” in the future Horizon Europe Framework Programme, as some European funding supporting is often used for some actions
- The limited financial resources to invite international partners to some events for launching exchanges and therefore difficulties to “properly” connect
- The limitations of the cofunding collaboration models for considering / integrating South countries, developing countries. This will require to develop different forms of cooperation model, to propose different types of activities (from the less demanding – collecting data, implementing proper data management, connecting to global data collection, to the most financial demanding)
- There is a time lag between when research funding is provided and when the countries researchers are present more systematically in funded projects: Previous experiences demonstrated that the efficiency and success of cooperation is reached around 4 years.

Some options for making progress were also mentioned:

- Build on equal-footing basis : multilateral actions vs. demands of some international partners (IN, CN)
- Ease the participation of new / candidate partners while considering a reduction of transaction costs (always higher for such International cooperation). Were suggested:
 - Use of bilateral agreements to prepare / support participation in multilateral agreements
 - PhD programmes as multipliers
 - Connect research infrastructures and « structural projects » (developing and implementing technologies in a dedicated area)
 - Support some researcher – targeting tools such as capacity building actions (skills of researchers for competitive calls, Incentives for local scientists for engaging in international actions, for working where problems are bigger)
- For Equal-footing consideration, it could easily start by the co-construction of the agenda and the actions (equal consideration).

4. Conclusions of the meeting and next steps

The workshop outputs demonstrated the following needs:

- Some incentives to overcome the barriers on IC
- Co-construction of agenda/actions, and co-definition of priorities
- Equal footing (equitable approach) at different levels
- Sharing Global objectives and means to achieve them
- Building trust which requires time, effort and interest from the different sides and involvement of policy decision
- Need of long-term funding and cooperation strategies from different countries and different regions.
- Flexibility of procedures and programmes
- Need / Acceptation of common procedures: process on evaluation, criteria and funding conditions, common submission system.

Additional suggestions were made by the Workshop attendees, such as:

- Take into account lessons learnt from previous calls
- Consider possibilities of specific calls dedicated to some international countries (e.g. India, China), vs. Global multinational calls as currently operated
- Develop linkages and exchanges of best practices for further cooperation
- Strengthen the cooperation with Danube Region countries including Non-EU countries (action at river basin level to maximise impacts).

The **next steps** include:

- Other discussion workshops which will contribute to the elaboration of the Water JPI IC strategy:
 - o Workshop “Public Private Partnerships Business models » -
This workshop, delayed due to Covid19 crisis From April to September 2020, aims at establishing modalities of action plan for possible Public – Private Cooperation in RDI programming
 - o Workshop with JPI Members (October 2020), which aims at discussing and progressing towards a draft Common Strategy document
 - o Workshop with Neighbouring countries (November 2020), which aims et identifying specific needs for International River Basin conditions (water diplomacy)
- Progressing discussions with Belmont Forum to investigate possible ways / mechanisms for cooperation (on-going)
- Integrating inputs from all actions in a draft Water JPI IC strategy
- Final Workshop, to be scheduled in September 2021, with JPI Governing Board, for GB approval and implementation resource decisions on the proposed common strategy on cooperation models, possible status for the associated partners, countries / partners of major interest, ways for future engagements.

Annex 1: Synthesis of previous workshops



“International multilateral cooperation in Research and Innovation programmes with countries beyond Europe” Synthesis of previous workshops

The Water Joint Programming Initiative, Water JPI (www.waterjpi.eu), entitled “*Water Challenges for a Changing World*”, was launched following a decision of the Competitiveness Council on December 6th 2011⁸. As of June 2019, the Water JPI membership includes a total of 23 member countries and three observer countries, which collectively represent 88% of European public research, development and innovation investment in water resources. The Water JPI is dedicated to tackling the ambitious grand challenge of achieving “*sustainable water systems for a sustainable economy in Europe and abroad*”.

Water challenges are global as recognised by UN SDGs or the World Economic Forum⁹ (since 2015 - nearly 900 experts took part in the Global Risk Perception Survey) as the most important risk in terms of impacts to the economy and society in the upcoming years. Water crises, associated with the failure of climate change adaptation, are also perceived as more likely to occur and having an impact than the average risk. Global water requirements are projected to be pushed beyond sustainable water supplies by 40% by 2030¹⁰.

In this context, the outreach and opening of the Water JPI to third country partners is increasingly raising interest among the latter (with increasing activities of the beyond Europe countries in Joint Transnational Calls). Now the Water JPI, as part of its supporting Coordination and Support Action [IC4Water](#)¹¹, is looking at opportunities to develop a common strategy for international cooperation, in cooperation between the Water JPI members, European initiatives (such as the other JPIs) and International partners (such as the Belmont Forum, the Global Water Research Coalition, or targeted non-EU countries). **IC4WATER** therefore concentrates its activities on developing a strategy for international cooperation development

⁸ [Council conclusions](#) on the launching of the joint programming initiatives on 'Healthy and Productive Seas and Oceans', 'Urban Europe - Global Urban Challenges, Joint European Solutions', 'Connecting Climate Knowledge for Europe', 'Water Challenges for a Changing World' and 'The Microbial Challenge - An Emerging Threat to Human Health' – Adoption. 17424/11 of 29 11 2011.

⁹ <http://reports.weforum.org/global-risks-2015/part-1-global-risks-2015/introduction/>

¹⁰ 2030 Water Resources Group, 2009.

¹¹ <http://www.waterjpi.eu/implementation/supporting-projects/csa-ic4water>

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and on contacting the targeted countries, as identified during different workshops, to discuss possible cooperation models.

To date, the Water JPI has set up contacts and initiated Joint Actions, including Joint Transnational Calls, with several international partners, as outlined in **Figure 1**. There have been several Water JPI activities on international cooperation, including two mapping exercises of international activities (2015 and 2019 - further details are available from the [Water JPI website](http://www.waterjpi.eu)¹²).

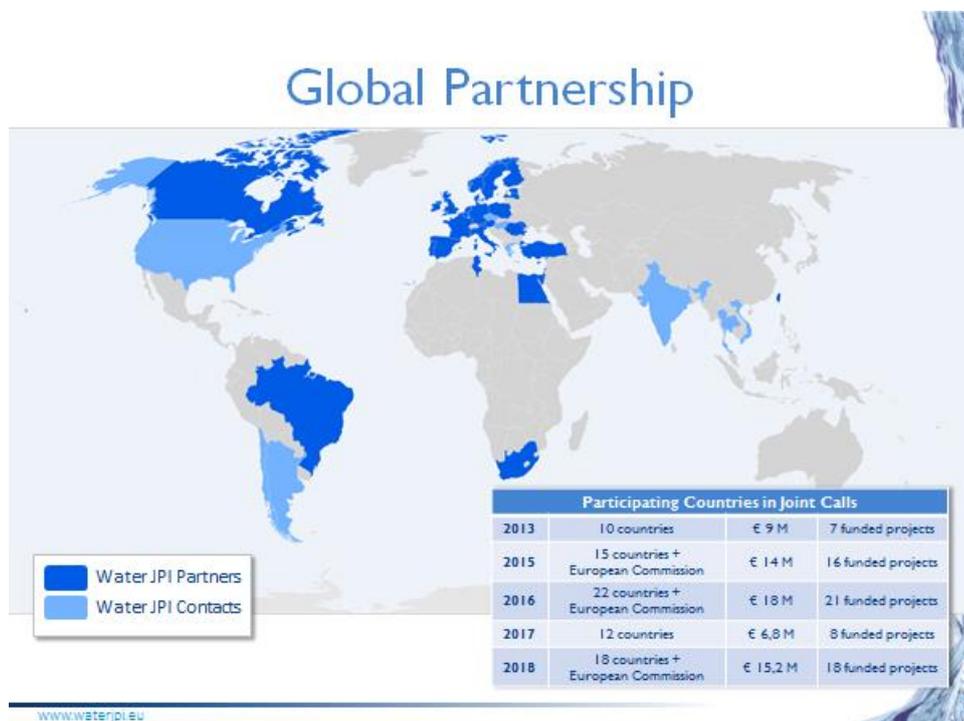


Figure 1. Water JPI current Joint Calls, partners and contacts.

Two workshops to develop “International Cooperation in RDI for tackling global water challenges” were organised in 2017 to discuss regional specificities and cooperation opportunities:

- Workshop dedicated to [Africa and the Mediterranean area](#) (Tangier, March 2017); and
- Workshop dedicated to [America](#) (Montreal, April 2017).

More recently, the Water JPI organised workshops more targeted to International Cooperation in the context of Joint Actions developed by European initiatives:

- Workshop with [European peer initiatives “Towards a Common Strategy on International Cooperation”](#), Vienna in September 2018; and
- [Workshop targeted at the research community](#) (from both EU/Associated and non-EU countries) participating in the Joint Actions implemented by these initiatives involving international cooperation, Paris in June 2019.

This note summarises the main outputs of these workshops, in order to support the upcoming discussions in Lisbon (4 December 2019). The aim of the 2019 Lisbon workshop T is to exchange with peer international institutions interested in joint initiatives on a voluntary basis in order to increase the value of relevant R&D funding through joint planning, implementation and evaluation of national

¹² <http://www.waterjpi.eu/international-cooperation>

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research programmes, to collect the views from International / non-European initiatives and better understand the difficulties faced to join multilateral cooperation activities at international level.

INCENTIVES FOR DEVELOPPING INTERNATIONAL COOPERATION

From the Research Funders' and Researchers' Perspective

- Joining national resources (human, financial) at International level for creating a critical mass necessary to tackle global challenges, which supposes to align national programmes, activities and procedures.
- Creating opportunities for national researchers to partner on a global scale.
- Setting a common and shared R&I agenda (SRIA¹³) on areas of global challenges.
- Ensuring an International agenda that is also relevant to the national context.
- Mutual learning by accessing existing knowledge, good practices and experiences.
- Establishing a set of activities which can be selected in a flexible manner by countries which may not be familiar / experimented with multilateral and co-designed cooperation.
- Contributing to increased and faster knowledge transfer from research results to public policies/policy-makers at a wider scale (i.e. widening the impact / reach).
- Contributing to increased and faster knowledge transfer to a wider range of stakeholders (in particular, the economic sectors).
- Widening/Enlargement of market opportunities in a shorter timeline.
- Taking a leadership worldwide in water-related societal challenge for ensuring development and implementation of R&I activities in line with challenge needs.

MAIN ADDED VALUES / ADVANTAGES OF INTERNATIONAL COOPERATION

From the Research Funders' Perspective

- Solving global issues and it allows for testing the transferability and robustness (in different geographical and climate contexts, usage practices) through collaboration.
- Co-design and co-production of inter-transdisciplinary Research and Innovation.
- Creating larger and more impactful opportunities for EU researchers to partner on a global scale.
- Larger portfolio of activities (from knowledge creation, to knowledge transfer, development of strengthened research communities, ...).
- Leverage effect of research funding and greater cost-efficiency leading to increased impacts of national funding programmes and outputs.
- Mutualising R&I funders' efforts, in particular for activities with no immediate or large return on funding investments (innovation solutions development requires time – ca. 20 years from idea to solution ready for implementation).

¹³ Strategic Research and Innovation Agenda

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- Providing access to wider pool of existing R&I outputs allowing for a more comprehensive state of the art.

From the Researchers' Perspective

- Access to funding and critical mass of researchers thus providing opportunity to widen networking.
- Opportunity to collaborate with other expert groups (different expertise, different regions, ...).
- Access to data on different ecosystems.
- Exchange on research methodologies and harmonisation of protocols.
- Maximise research excellence on a global scale through peer review process
- Provide mobility and career development at a broader scale.

Common Perspectives

- Needed for solving global issues, required for testing and demonstrating in relevant geographical and climate areas (i.e. solutions are fit for purpose in the local context).
- Based on mutual benefits, trusts and knowledge exchange.

MAIN BARRIERS ENCOUNTERED IN THE CONTEXT OF INTERNATIONAL COOPERATION

From the Research Funders' Perspective

- Lack of national financial resources to allocate to Joint Actions and networking / follow-up of activities of interest
 - a. this is particularly true for low- and middle-income countries, which have the same water-related challenges and are interested in joining.
- Lack of human resources for joining actions with international cooperation, which require more time and energy for a successful engagement.
- Difficulties to coordinate participation nationally.
- Complexity of the rules of participation.
- Lack of openness and inclusiveness.
- Absence of national strategies / priorities or of alignment of these national priorities with the International agenda.
- Absence of alignment of funding programmes and procedures (time scales, funding modalities, contracting protocols, evaluation criteria, Open Access requirements, ...).
- Distribution of tasks for implementing joint actions between the involved funders.
- Non-continuity in the RDI value chain (from academic/basic/blue Sky research, to applied and innovation, readiness for market uptake).
- Cultural barriers to cooperation / sensitivity.

- Greater resources constraints in managing International Cooperation vs. national programmes' activities.

It was identified that Africa appears to be missing from (or at least be the focus of) current international cooperation activities between funders, even if the needs for such collaboration are significant; and work / support for excellence centres (and related network) or development / aid actions (through foundations, World Bank, Development bank, ...) is on-going.

From the Researchers' Perspective

- Different mechanisms for funding research and innovation models - Possible competition between different funding programmes (go to the largest? The easiest? The most successful?)
- Funding models based on virtual common pot of this multilateral cooperation, leading to unexpected delays and constraints due to the need for contracting each research institution of project consortia with each national funding agency.
- Different protocols and timing in terms of national regulations for grant awards, payments and reporting (disparities in time scales for making cases through to funding, additional national selection phase for being granted, ...).
- Different evaluation criteria for research projects.
- Variety of interest groups and agendas.
- Communication issues: different languages, different cultures, different time zones.
- Budget cuts from some third country partners after the selection and the grant award, leading to re-negotiation.
- Alignment of personal costs (person-months / daily rates).

Common Perspectives

- Greater risks associated with projects development and implementation.
- Clearer description of the expected impact of the projects and the upscaling of solutions developed, required as part of joint calls.
- Intellectual Property Rights issues to be addressed and implemented in a proper and fair way in this international context (in connection with SMEs and industries participating in projects funded under Joint Transnational Calls, Trade-offs between competition and collaboration, ...)
- Share Ethics charter with funding agencies and researcher communities for implementing multilateral international cooperation.

SUGGESTIONS / SOLUTIONS PROPOSED

International cooperation is a strategic goal for all JPIs which are targeting global challenges. “If we are together, we are stronger”: this, in turn, increases our chances of achieving the goals on a global scale.

It is a long-term investment (understanding each other, building trust, agreeing on modalities of cooperation, allowing commitment at the level of the expectations, aligning priorities and timing, ...) that should be included in the long-term strategies of the JPIs.

For Research and Innovation Funders

Sharing Global objectives and means to achieve them

- **Having a shared Global Research & Innovation Agenda**, in connection to the UN SDGs and other global objectives (e.g. Climate Change), which are the Policy Objectives followed by international institutions and national governments:
 - Most Water JPI SRIA topics are considered as relevant. Some topics of high interest for Non-EU countries can be found to be underrepresented in the Water JPI SRIA or with a too low priority compared to European countries’ priorities.
 - Some European and non-European countries have no national water RDI vision or agenda / programme and could use the Water JPI one as basis for developing their own.
 - There is a critical need to reconnect the research agenda with political agendas (i.e. UN SDGs convention): research should support the country / EU thematic and external policies, and therefore complement the development policies.
- **Mapping the existing knowledge for concentrating on the knowledge gaps:**
 - The collection/extraction and transfer of the knowledge/evidence from previous completed scientific projects (“our treasure”) is considered as a priority action for the future (i.e. build a more comprehensive State of the Art).
 - The creation of Synthesis / Interface – Knowledge Hubs with Knowledge brokers, should then follow.
- **Co-defining the priorities** for the upcoming actions sufficiently in advance for establishing win-win opportunities and allowing planning and decision-making in different national contexts (agendas, calendars, ...).
- **Plan the activities over the long-term** to allow a move from annual budget decision to multiannual planning, which means securing engagement on long-term.
- **Open Access / Open Science / Open Innovation**
 - Good opportunity for mutual learning, data sharing/access to new models/infrastructure.
 - Networking – Added value and benefit for both Europe and third countries.
 - Harmonisation of tools, solutions on global/regional and local scales.
 - Aligning of national agendas/harmonisation procedures/indicators/directives, etc.
 - Sharing best practices/knowledge and excellence.
 - Enlarging the portfolio to solve common problems with common solutions.
 - But potential risks vs. competition should be properly considered when implementing.

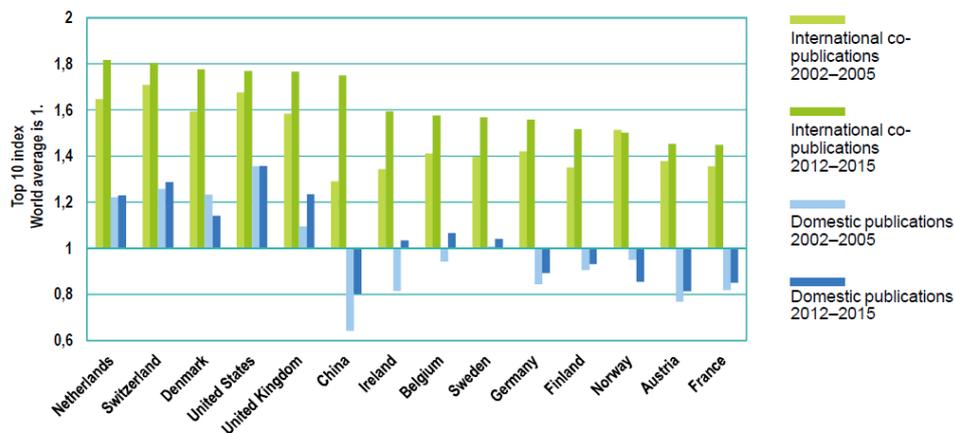
Research and Innovation Funding

- All is about **building trust and respect with** partners, ensuring **mutual benefit and equal footing** while considering the flexibility and variable instruments for allowing participation.
- **Co-construct the joint RDI action** from the start, based on the shared agenda:

- Moving from “knowledge transfer cooperation” to co-design / co-develop / co-implementation.
- Bringing/Ensuring mutual benefits and effective added value.
- If possible, use **complementary mechanisms** facilitating international cooperation, to build capacity and make third countries ready for cooperation in a multilateral / cofunded model.
- **Agreeing on procedures for decision-making:**
 - For moving to co-management on an “equal-footing basis”.
 - For transparency.
- **Maximising the use of the available funds** for the different proposed activities in order to avoid the inability to spend committed budget (e.g. ERANETs)
 - Capacity building to equip the participants with the appropriate skills.
 - Flexibility of the evaluation/monitoring procedures.
- **Learning from past experience**, i.e. Funders to consult with researchers funded on relevant past calls to learn from their experience; Dealing with unforeseen expenses and delays – more flexibility required in terms of reporting back these expenses; Discussion of the proposed funding instruments with the non-EU countries; More flexibility is required in relation to the national regulations); Learning from experience and updating the national regulations
- **Find a funding instrument which bridge the gap between basic / applied research and demonstration:** Planning on how to scale-up the solutions being developed (built into a sustainability plan, exit strategy – funding sustainability)
- **Align and simplify procedures for evaluation / review and grant preparation** for launching projects in due time:
 - Information to be provided on the procedures of the other co-funders (e.g. eligibility validation processes, post-contract re-negotiation in some non-EU countries) – for avoiding re-evaluation, new reviews, budget cuts post project award.
 - Alignment of evaluation criteria (Scientific Excellence, Impact, quality and efficiency of the project implementation, additional criteria such as gender balance, stakeholder’s participation, ...).
- **Consider the added value of a shift of practices in priority setting to address the global challenges!**
 - Measuring the impact of the international cooperation should be very important. Broadening the partnership of the JPI should also generate more impacts of its activities to the research programmes, the research communities and to society as such when addressing in a more integrated and comprehensive way the RDI gaps related to the global Water challenges.
 - Cf. [AKA’s publication](#):

Scientific impact of publications in Finland and in countries of comparison by type of publishing 2002–2005 and 2012–2015

Countries are listed according to Top 10 index of international co-publications 2012–2015.



Source: Clarivate Analytics Web-of-Science-based data, bibliometric computing by CSC Ltd, 2018.
29 © ACADEMY OF FINLAND | STATE OF SCIENTIFIC RESEARCH IN FINLAND 2018



- Developing specific International Cooperation indicators for the impact assessment should be planned in order to be able to report back and to quantify when possible these impacts.

Considering Specificities of International Cooperation

- Benefit from the diversity of the **local conditions**, which provides opportunities for experimentation, piloting and learning from good practices globally.
 - **Identifying the right partners** for such cooperation and, within the institutions, the right contact person who has the capacity and the authority to pull things together: i.e. *with research funders only? With thematic policy ministries which are closer to end goals?*
- Develop **innovative funding solutions** for allowing low- and medium-income countries' participation:
 - In some cases, the question of “sponsoring participation of research bodies from another country” was raised (e.g. example of IDRC’s financial support to NSERC for supporting the participation of researchers of some developing countries in projects with Canadian researchers – WaterWorks2015)
- **Greater complexity** involved in implementing Joint actions:
 - **Management of Risks / Contingencies:** Share experience of “possible delays / extra budgets” and build these into the contingencies; Be aware that some partners may not be able to deliver and that the Grant Agreement may need to be amended (Management of Risks / Contingencies)
 - **Handling Innovation** is more complex due to the competition aspect. There should be clear rules for innovation and how it is handled with benefits to all parties, in the context of international collaborations. It should be acknowledged that the exchange of knowledge / samples across countries may not always be possible.
 - **Clarification on IPR rules used** under the Water JPI activities has been requested several times and could be a pre-requisite for the participation of some countries (e.g. USA, Canada).
 - As example, see the B&M Gates foundation “[Global Access Strategy](#)”)

Connecting to Users

- No single stakeholder can fix global challenges alone. Therefore, multi-stakeholder partnerships (research, policy-making, financing, implementing, monitoring, etc.) are needed to be efficient and impactful.
- **Local Trust:** Have a trusted local partner; Use networking grants to build the trust at local level; Be aware of the language you are using and avoid idiomatic issues
- **Better communicating Research & Innovation results:** Exchange of people - Innovation mobility: have a community of innovators, addressing gaps between innovation communities in different places (Business Hubs?); Policy-makers: “Show-me” approach – considering the Smart Specialisation Strategy, Translation of the research outputs; Project Deliverables: to include specific contribution to policy (consider including a policy analyst in projects for guidance / advisory function); provide access to science to policy translation)
 - i.e. All supporting projects should be required to produce a brief document on how each project can contribute to/inform policy development. This should be made compulsory
 - Creating a joint communication room between all stakeholders (researchers, policy-makers, services providers, water utilities, ...), which is nor a purely scientific conference, nor a policy development event.
 - Consider attendance and presentations at events / conferences outside their own areas
- **Disseminate “Case Studies”** that show the added value of membership / participation in joint activities

The “Data” Challenge

- Do we need more data? Can we better use the existing data? How to deal with big data issues? Going beyond current data repositories (research data, policy monitoring data)?
- **Access to data** collected during funded projects: ensure that research data are transferred / maintained post project completion; transfer to key people mentioned in the context of data observatories; link to Copernicus and/or equivalent programmes
 - Will require mapping of access conditions, background information,
 - Will require harmonisation of data collection / storage / exchanges / interpretation methodologies, larger challenge in International Cooperation Context.
 - Move to interoperable databases? Provide under QA/QC permanent process
 - The key challenge would be to develop a global “research Infrastructure” (from Earth observation to local monitoring).
- Developing Open Access / Open Data in a fair manner.

The possible “Business Models” for Joint Activities

- Any cooperation model should cover all proposed activities (calls, access to infrastructures, mobility schemes, data collection on the long-term, project databases, etc.) and be flexible and open.
 - The preferred option would be to have a continuous, dynamic and adaptive toolbox for enhancing the availability of funds for the different actions.
- Clarify the status of partners for being able to build a long-term partnership agreement (cf. Water JPI member status – full member, associated partner, and observer – presented in the [Water JPI Terms of Reference](#)).
- **Models for different activities** vs. best model for each activity (i.e. ERANET Cofund instrument vs. simple MoU for Joint Transnational Call, TAP for clustering projects funded at

national level, Knowledge Hub vs. Research Community Network, Brokering model / partners offering opportunities to JPI, JPI opportunities ready to implement at various levels, ...).

Suggestions to the Water JPI in relation to the different types of institutions to connect with:

| Type of institutions | Proposal of “business models” |
|---|--|
| Public institutions | <p>Both bilateral vs. multilateral cooperation models have merits: Bilateral for building strong relations between countries, start scientific diplomacy; multilateral for coordination in an international context and optimization of dissemination of outputs.</p> <p>The JPI should use the right model / tool for addressing the right challenge.</p> <p>Working with different countries (different experiences, mandates) is possible if there are common objectives. Countries can have specific and complementary roles.</p> <p>The interested countries need to be aware that their financial commitment should be balanced with the strength of their national RDI communities.</p> <p>Individual agencies should not lose identity / visibility in the multilateral network communication.</p> |
| Industry / Economic sector | <p>How to work with the Industry and economic Sectors should be further detailed, in particular in terms of needs and willingness to contribute to the whole RDI intervention chain.</p> <p>The JPI should also discuss if it wants to invest in commercialisation.</p> |
| Foundations | <p>The JPI should explore further means of cooperation (topics, countries of interest, types of joint activities, and bridging activities)</p> |
| Other networks (Belmont Forum, Future Earth, GWRC, UNESCO, UN Water, ...) | <p>Explore in particular the exchanges of information, the interoperability of projects databases for providing a more exhaustive panorama of the existing treasure and of the research in progress.</p> |

For Researcher and Innovation Communities

How to ease the launch of cooperation between researchers, between researchers and innovators to reach the critical mass?

- **Ease access to research infrastructures (cf. future Water JPI “infrastructures” portal),** as entry point to collaboration
 - For countries where these are missing (due to absence of funding for example), consider developing local research infrastructures?
- Promote capacity building / mobility schemes / training opportunities.
- Provide access to previous water-related projects results (via projects database / platform), including lessons learnt from trials and failures / errors!
- Facilitate the connection to EU partnering communities via different media (i.e. the LinkedIn Water JPI research forum group, exploratory workshops, access to Water JPI project database, support the submission of proposals to COST action or Marie Slodowska-Curie fellowship.

How to continue collaborating beyond the project funding cycle?

- Facilitating leveraging networks (such as COST actions) which are incentive tools for generating new ideas and science.
- Facilitating mobility between research teams.
- Presenting the overall opportunities to facilitate the selection of the most appropriate “funding instrument” for the proposal under development by researchers’ consortia.

How to ease the project funding cycle in an international cooperation context that has more challenges?

- **Simplified portal for accessing funds and applications**, with some supporting guidance documents (e.g. Ethics work package description and related templates) - Ensuring consistency in call applications and related rules.
- **Reduce administrative burdens** (no double reporting, unique joint review process recognised by all agencies) to concentrate on research work and yield tangible added value for the researchers involved and the funding programmes.

How to support local stakeholders’ benefitting from international research programmes?

- **Acceptance of proposed innovative solutions** which may require the involvement of local stakeholders who should contribute to the funded R&I activities. The national funding agencies may have to consider to support financially stakeholders in “testing” countries, even if abroad.

For the Water JPI as Programme

Becoming the gateway for Water related research and innovation funding programmes, to try to overcome the main barriers

- Very complex RDI funding landscape, in particular in Europe, with very different public funding models. Therefore, there is a need to give synthetic and clear information on the different initiatives and on the possibilities of cooperation on a central platform where all information can be accessed.
- Connecting and integrating national, European and International agendas, while associating stakeholders.
- Connecting to all initiatives with a clear distribution of roles & tasks / Supporting to connection (ERANET-LAC, EU LAC-Health, Future Earth, GWRC, UNESCO, UN Water, etc.).
- Keeping the focus on the shared vision during the entire process.
- Connect research and policy, putting research into practice.
- Raising funds for developing activities at the relevant scale and at the most appropriate timing.

Easing the process to access to the network and cooperate as partner for reaching the necessary critical mass

- Overcome low success rates in some low--and middle-income countries which join lately.
- Integrate when possible private / economic sector funds to increase the critical mass.
- Explore partnerships with different actors such as International water associations (IWA, IWRA, INBO) for different types of activities which could complement what is already in place.

More information: ic4watersecretariat@agencerecherche.fr

List of organisations / initiatives involved in previous discussions

European funding institutions / initiatives

- Cyprus – RPF
- Denmark – Innovation Fund Denmark (IFD)
- Estonia – Ministry of Environment
- Finland – Academy of Finland (AKA)
- Finland – Ministry of Agriculture and Forestry (MoAF)
- France – Agence Nationale de la Recherche (ANR)
- Germany - German Aerospace Center (DLR)
- Germany – Project Management Juelich (PtJ)
- Ireland – Environment Protection Agency
- Italy – MIUR
- Moldova – National Agency for Research and Development of the Republic of Moldova (NARD)
- Netherlands- IenM
- Norway – Research Council Norway (RCN)
- Portugal - FCT
- Slovenia - Ministrstvo za Izobrazevanje, Znanost in Sport (MIZS)
- Spain – Agencia Estatal de Investigacions
- Spain - CDTI
- Spain - Instituto Nacional de Investigacion y Tecnologia Agraria y Alimentaria (INIA)
- European Commission – DG Research and Innovation

European initiatives

- BiodivERSA represented by FRB (FR)
- ERA-LEARN represented by FFG (AT)
- Groupe de Programmation Conjointe (GPC) represented by chair (CY) and Vice-Chair (FR)
- INTERREG programme on Danube
- JPI AMR represented by Swedish Research Council (SE)
- JPI Climate represented by JPI secretariat (BE)
- JPI Cultural Heritage represented by National Research Council (IT)
- JPI FACCE represented by coordinator (FR)
- JPI HDHL represented by ZonMw (NL)
- JPI MYBL represented by ZonMw (NL)
- JPI Urban Europe represented by FFG (AT)
- Water Supply and Sanitation Technology Platform (WssTP)

Beyond Europe funding institutions / initiatives

- Argentina - MINCYT
- Brazil - CONFAP
- Burkina Faso - Fonds National de la Recherche et de l'Innovation pour le Développement (FONRID)
- Canada - Global Affairs Canada
- Canada – IDRC
- Canada - NSERC
- Chile - CONICYT
- Egypt - ASRT
- Italy - ISPRA
- Ivory Coast - Ministère de l'Enseignement Supérieur et de la Recherche Scientifique (MESRS)
- Jordan - Higher Council for Science & Technology (HCST)

- Senegal - Ministère de l'Enseignement Supérieur et de la Recherche (MESR)
- South Africa – Water Research Commission (WRC)
- Tunisia – IRESA
- Tunisia - Ministry of Higher Education and Scientific Research (MESRS),
- Turkey - Ministry of Food, Agriculture and Livestock (GDAR)
- United States of America - USDA-NIFA
- United States of America – US Environmental Protection Agency (US-EPA)
-

World Regional networks

- African Continent - LEAP-Agri ERANET Cofund
- American Continent - Inter-American Institute for Global Change Research (IAI)
- China – Europe: China – European Water Platform
- Mediterranean Area - ARIMNet2
- Mediterranean Area – ERANETMED project
- Mediterranean Area - PRIMA foundation
- North Sea – BONUS EEIG

International institutions

- Belmont Forum (BF)
- Bill & Melinda Gates foundation (BMGF)
- Convention on Biological Diversity (CBD)
- UNESCO – IHE – Delft Institute for Water Education
- UN Water

European Researcher networks / projects

- Cyprus – University of Cyprus
- Denmark - Aarhus University
- Denmark – Geology Survey (GEUS)
- Finland – Finnish Environment Institute (SYKE)
- France – Bureau de Recherches Géologiques et Minières (BRGM)
- France - Centre de coopération internationale en recherche agronomique pour le développement (CIRAD)
- France - Institut National de la Recherche Agronomique (INRA)
- France – University of Montpellier – IRD
- France – IRSTEA
- Germany - Helmholtz Zentrum Muenchen GmbH
- Ireland - Dundalk Institute of Technology
- Ireland - MaREI Centre - Environmental Research Institute - University College Cork
- Ireland - RCSI
- Italy – IRSA – CNR, Water Research Institute
- Greece - Hellenic Agricultural Organisation – DEMETER (HAO-DEMETER)
- Romania - Gheorghe Asachi Technical University of Iasi
- European Project PIANO represented by BOKU university (AT)
- IPAG Business School

Beyond Europe Researcher networks / projects

- Brazil - UNESP (São Paulo State University)
- Canada – International Institute for Sustainable Development Experimental Lakes Area (IISD-ELA)

- Canada - Ryerson Urban Water
- Canada – University of Waterloo
- China - Nankai University
- Egypt - Agricultural Research Center (ARC)
- Ghana - Science and Technology Policy Research Institute (STEPRI)
- India – CSRI - NEERI
- Morocco - Institut National de la Recherche Agronomique (INRA)
- Morocco - Institut Agronomique et Vétérinaire Hassan II (IAV Hassan II)
- South Africa – CSIR
- South Africa - University of the Witwatersrand
- Turkey – SUEN
- Vietnam - Institute of Environment and Resources, Vietnam National University - Ho Chi Min
- Mediterranean Area - Centre International de Hautes Etudes Agronomiques Méditerranéennes – Institut Agronomique Méditerranéen de Montpellier (CIHEAM-IAMM)
- Mediterranean Area - Système Euro-Méditerranéen d’Information sur les savoir-faire dans le Domaine de l’Eau (SEMIDE)

International networks

- Future Earth
- UNU-INWEH - Institute for Water, Environment and Health
- Global Institute for Water Security

Annex 2: List of attendees

| Name | Last | Institution | Unit/Position | Country | |
|--------------|-------------|--|---------------------------------|--------------|--------|
| Antonella | Autino | Prima | Project Coordinator | Spain | |
| Panagiotis | Balabanis | European Commission | Policy officer | EC | Online |
| Alessandra | Casali | ISPRA | | Italy | |
| Diana | Carlos | CEWP | Tecnica Superior | Portugal | |
| Simon | Coulet | ANR | Water JPI Secretariat | France | |
| Dominique | Darmendrail | ANR / Water JPI | Water JPI Coordinator | France | |
| John | Dini | Water Research Commission | Research Manager | South Africa | |
| Miguel Angel | Gilarranz | AEI | in-home consultant | Spain | |
| Maurice | Héral | ANR | Water JPI Chair | France | |
| Bjørn Kaare | Jensen | IFD/GEUS | Chief advisor | Denmark | |
| Kevin | McGuigan | Royal College of Surgeons in Ireland | Research Principal Investigator | IRELAND | |
| Ana | Mendes | CEWP | | Portugal | |
| Rabi | Mohtar | American university of Beirut | Dean and Professor | Lebanon | |
| Rui | Munha | FCT | | Portugal | |
| Fernando | Nardi | WARREDOC, University for Foreigners of Perugia | Associate professor | Italy | |
| Alexandra | Nauditt | TH Köln | ITT | Germany | |
| Marco | Orlando | PRIMA | Project officer | Spain | |

| | | | | | |
|--------------|-----------|----------------------------------|---|----------|--------|
| Germana | Santos | FCT, I.P. | Departamento of International Relations/Science officer | Portugal | |
| Maria Chiara | Sole | ISPRA | Researcher | Italia | |
| Awatef | Soltane | MHESR | Director | Tunisia | |
| Sabine | Sorge | Project Management Jülich | Project Manager | Germany | |
| Charlie | Stratford | CEH | | UK | Online |
| Richard | Tavares | ANR | Water JPI Secretariat | France | |
| Osman | Tikansak | Formas | Facilitator | Sweden | |
| Claire | Treignier | ANR | Water JPI Secretariat | France | Online |
| Maria | Uhle | U.S. National Science Foundation | Belmont Forum Co-Chair | USA | |
| Bertrand | Vallet | EUREAU | | Belgium | Online |
| Kata-Riina | Valosaari | Academy of Finland | Senior Science Counsellor | Finland | |
| Alice | Wemaere | Environmental Protection Agency | Manager Research Programme | Ireland | |

Annex3: Workshop programme

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| 08:30 – 9:00 | Registration | |
| 9:00 – 9:15 | Welcome and aim of the Workshop Including tour de table of participants | Dominique Darmendrail, IC4Water Coordinator, ANR |
| 9:15-9:30 | State of International Cooperation within the Water JPI, with feedbacks on meeting questionnaire | Claire Treignier, ANR, per WebEx |
| 9:30-9:35 | Plenary Session: Perspectives from International partners' point of view | Chaired by Antonella Autino, PRIMA foundation |
| 9:35 – 10:05 | International cooperation in Water RDI: Perspective from Third Country funding Agencies (10 min each) | <ul style="list-style-type: none"> • Maria Uhle, NSF / Belmont Forum – confirmed • John Dini, WRC – the South Africa Experience in Water JPI – confirmed • Diana Carlos and Ana Mendes, China Europe Water Platform - confirmed |
| 10:05 – 10:20 | Challenges in International Cooperation: South perspective from researcher side | Rabi Mohtar, American University of Beyrouth (Lebanon) - confirmed |
| 10:20 – 10:35 | Perspective from Economic sector side | Bertrand Vallet, EUREAU, per WebEx - confirmed |
| 10:35 – 11:00 | Inputs from other initiatives (5 min. each) | All Future Earth – Alessandra Nauditt (DE) - confirmed |
| 11:00 – 11:30 | Coffee break | |
| 11:30 – 12:15 | Global Discussion – Common Barriers | Chaired by Maria Uhle, NSF / Belmont Forum |
| 12:15 – 12:45 | Presentation from DG Research on Issues relating to negotiations of Horizon Europe with international cooperation | Panagiotis Balabanis (EC) per Webex - confirmed |
| 12:45 – 13:45 | Lunch break | |
| 13:45 – 14:00 | Introduction to Afternoon Group discussions | |
| 14:00 – 16:00 | Group discussions | |
| | <ol style="list-style-type: none"> 1. <i>Specific needs for innovation / connection to economic sector</i> 2. <i>Possible Models for Cooperation</i> | |
| 16:00 – 16:15 | Coffee break | |
| 16:15 – 16:45 | Recap of Group discussions | Rapporteurs of each group |
| 16:45 – 17:00 | Conclusions and introduction to next steps | ANR |

Annex 4: Biographies of keynote speakers

DARMENDRAIL, Dominique

Since November 2014, she is the coordinator of the EU Water Joint Programming Initiative (www.waterjpi.eu) which aims at increasing coordination in European research, development and innovation (RDI), and address issues such as user participation, attaining targets in the coordinated use of funds and progress in the integration of RDI agendas and activities. She also coordinates the Coordination and Support Actions IC4Water for the development of international cooperation in Research and Innovation in the Water area.

Since July 2014, she become programme manager on Environmental technologies at the French Research Agency (ANR).

She holds a Doctorate on Hydrogeology and Hydrogeochemistry from the University of Bordeaux (France). She has been the Head of BRGM's Environment and Process Division from 1998 – 2007 and, from May 2010 to July 2014, European Affairs representative within BRGM while being the secretary general of the Common Forum on Contaminated Land in Europe (www.commonforum.eu), European network of contaminated land policy experts and of the International Committee on Contaminated Land (www.iccl.ch).



DINI, John

John Dini holds a master's degree in governance and public policy, and has 20 years' experience within the South African public sector, working in the water and environment sectors. He is currently a Research Manager at the Water Research Commission, responsible for leadership of the water governance portfolio. This portfolio focuses on research and innovation in priority focal areas that include intergovernmental relations; law reform and institutional arrangements; the science-policy-implementation pathway; and water, social equity and redress. He is responsible for setting a research agenda for the portfolio aligned to national priorities, managing projects within the portfolio, supporting relevant communities of practice and facilitating the uptake of research outcomes into policy and practice. He is a member of the national Working Group on Sustainable Development Goal 6 (water and sanitation) and leads a task team focusing on the contribution of research and innovation to the achievement of the targets under this goal.

Prior to this he was employed at the South African National Biodiversity Institute and Department of Environmental Affairs where he focused on developing science-based policy tools, implementing pilot projects along the science-policy-practice continuum and supporting policy development in relation to biodiversity and water. He has served as the National Focal Point for the Ramsar Convention on Wetlands and was instrumental in conceptualising, leading and growing a new national programme combining wetland rehabilitation and poverty alleviation, and a national wetland community of practice.

MOHTAR, Rabi H.

Rabi H. Mohtar, Professor and Dean, Faculty of Agricultural and Food Sciences (FAFS) at the American University of Beirut (AUB) and TEES Research Professor at Texas A&M University (College Station), has used over \$16M in funded research grants to address global resource challenges: developing a Water-Energy-Food Nexus framework linking science to policy, characterization of the soil-water medium through thermodynamic modeling, understanding the efficacy of non-traditional water using physical-based methodologies. In more than 400 research articles, book chapters, policy briefs, and conferences within the US and globally, Mohtar addresses Water, Energy, and Food Security Issues through a Holistic Nexus Approach. He has trained 75 PhD and MSc students from the MENA region, Africa, Latin America, and the United States. He founded and coordinated A&M's Water-Energy-Food Resource Nexus Initiative and the Water-Energy-Food-Health (WEFRAH) initiative at AUB. Both initiatives focus on the needed research and education to address global resource challenges and implement the SDGs.

Rabi Mohtar is a Fellow of the American Society of Agricultural and Biological Engineers, Executive Board member of the of the International Water Resources Association (IWRA), and Governor of the World Water Council. He advises the UN Framework Convention on Climate Change (Momentum of Change), and is a Senior Fellow of the OCP Policy Center. He served on the World Economic Forum Global Agenda Councils on Water Security and Climate Change, was founding director of the Qatar Environment and Energy Research Institute, Qatar Foundation. He is adjunct professor at Texas A&M Qatar and at Purdue University, where he was inaugural director of Purdue's Global Engineering Programs and co-founder of the Division of Environmental and Ecological Engineering.

NAUDITT, Alexandra (PhD)

Alexandre Nauditt is a senior scientist at the Institute for Technology and Resources Management in the Tropics and Subtropics (ITT) at the Technical University Cologne, focussing on research and postgraduate education related to drought risk, mountain hydrology, water management and the Water-Food-Energy Security Nexus. Since her start at ITT in 1999, she has been coordinating international and interdisciplinary projects, among them the BMBF funded research projects "Land Use and Climate Change Interactions in Central Vietnam – LUCCI" (www.lucci-vietnam.info) and "Water Use Efficiency in Semi-Arid Central Chile" (www.hidro-limari.info). Currently her research is focusing on drought risk assessment and management in data scarce semi-arid and tropical regions, like addressed in the ADAPTA project (www.adapta.ufc.br), WaterSec and TropiSeca (www.basin-info.net/tropiseca).

UHLE, Maria



Dr. Maria Uhle currently serves as the Program Director for International Activities in the Directorate for Geosciences at the National Science Foundation, where she develops mechanisms and agreements to foster international research collaboration through the Belmont Forum, the Inter-American Institute for Global Change Research (IAI) and Future Earth. She is Co-Chair of the Belmont Forum, Co-Chair of the Governing Board of Future Earth and serves on the Executive Council of the IAI. She works with other US federal agencies on international cooperation through the US Global Change Research Program (USGCRP) where she is the National Science Foundation's Principal to the Sub-committee on Global Change Research and co-Chair of the International Activities, Interagency Working Group of USGCRP. Prior to her appointment at NSF, she served as an International Affairs Officer in the Office of International and Academic Affairs (OIAA) at the National Institute of Standards and Technology

(NIST), where she developed programs to foster research collaboration with NIST's international partners from countries in the Middle East, North Africa and South Asia. Prior to working at NIST, she served as Program Director for the National Academy of Sciences Polar Research Board and the Board on Atmospheric Sciences and Climate. She directed several committees that addressed topics relevant to the Arctic and Antarctic, and focused on reanalysis of historical climate data, and climate projections based on emission scenarios. Before joining the NAS, Dr. Uhle served on the faculty at the University of Tennessee in the Department of Earth and Planetary Sciences. Her background includes degrees in environmental science and geology, and her research focused on investigating the fate of organic matter and contaminants in atmospheric, surface water and soil environments from urban areas and the polar deserts of Antarctica.

VALLET, Bertrand

Bertrand Vallet is an engineer in civil engineering specialized in water and wastewater treatment. He completed his PhD on water quality modelling related to integrated storm water management in 2011 at modelEAU / Laval University (Quebec, Canada). For the last 2 years he worked as Marie Currie Fellow on CSO quality modelling (SANITAS project) at Aquafin (Aartselaar, Belgium). He also worked 3 years in France for a regulatory compliance company on water related projects.

Since 2014, he is policy officer at EurEau, the European Federation of Water Services where he is representing water services towards the European Institutions.