2017 Water Joint Programming Initiative Alignment Workshop Report

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Disclaimer

Acknowledgments

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Contents

List of Abbreviations

AAL JP:	Ambient Assisted Living Joint Programme
AEI:	Agencia Estatal de Investigación (formerly MINECO)
ANR:	Agence Nationale de la Recherche
Article 185:	Article 185 of the Treaty on the Functioning of the European Union
Cofund:	Co-funding of regional, national and international programmes
CSA:	Coordination & Support Action
DG:	Directorate-General
EC:	European Commission
EPA:	Environmental Protection Agency
ERA 4CS:	ERA-NET Consortium "European Research Area for Climate Services
ERA-LEARN:	Coordination & Support action (CSA) funded by Horizon 2020
ERA-NET:	European Research Area Network
EU:	European Union
FACCE-JPI:	Agriculture, Food Security and Climate Change JPI
FCT:	Fundação para a Ciência e Tecnologia
FORMAS:	Swedish Research Council
FPO:	Funding Partner Organisations
GB:	Governing Board
GPC:	Groupe de haut niveau pour la Programmation Conjointe
IC4WATER:	Coordinating and Supporting Action on "Tackling Water Challenges in the International Context"
JPI:	Joint Programming Initiative
MS:	Member States
NGOs:	Non-governmental organisations
P2Ps:	Public to Public Partnerships
PRIMA:	Partnership on Research and Innovation in the Mediterranean Area
RCP:	Real Common Pot
RDI:	Research, Development and Innovation
RPF:	Research Promotion Foundation
RTD:	Research, Technology and Development
SAB:	Scientific Advisory Board
SME:	Small and Medium Enterprise
SRIA:	Strategic Research and Innovation Agenda
StAB:	Stakeholder Advisory Board
TAP:	Thematic Annual Programming
TRL:	Technology Readiness Level
UN SDGs:	United National Sustainable Development Goals
WFD:	Water Framework Directive
WP:	Work Package

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 countries and four 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".

This report contains the proceedings of the 2017 Water JPI Alignment Workshop of the Water JPI. The workshop took place in Stockholm on the 4th April 2017. 29 people attended: members of the Governing Board, Water JPI partners as well as guest speakers from the European Commission, the ERA-LEARN 2020 project, the JPI on "Agriculture, Food Security and Climate Change" (FACCE-JPI) and the Groupe de haut niveau pour la Programmation Conjointe (GPC). This workshop provided the occasion for participants to discuss and identify activities that can be used by Member countries to modify their national research programmes, priorities or activities to improve the efficiency of investments in research.

The workshop involved three plenary sessions and two round table discussions, which included contributions from the European Commission, GPC, ERA-LEARN, FACCE-JPI and from the Water JPI representatives. The round table sessions facilitated discussion on alignment activities from all involved.

The objectives of the 2017 Water JPI Alignment Workshop were to:

- ⇒ Share good practices;
- ⇒ Exchange views on specific alignment instruments;
- ⇒ Identify the current situation & goals / targets regarding alignment;
- ⇒ Progress Case Study 1 "Identification of Research, Development and Innovation needs / Discussion of mechanisms for Thematic Annual Programme"; and
- ⇒ Progress Case Study 2 "Review of findings from the 2nd Case Study".

1. Introduction

1. 1. Water Joint Programming Initiative

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 countries and four 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 grand 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. It must be remembered that the European water sector has a wide diversity of stakeholders and is highly fragmented; water resources, water supply and wastewater have often been locally managed.

Among the RDI benefits of the Water JPI, five have a clear European dimension:

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

The Water JPI will produce science-based knowledge leading to the support of European policies; comprising the identification of problems, their quantification, and the development of 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 and the Implementation Plan 2017-2019.

1. 2. Water JPI Alignment Workshops

WaterWorks2015 is an ERA-NET Cofund funded by the European Commission (EC), supporting the implementation of the Water JPI.

The WW2015 alignment activities are based on previous Water JPI alignment activities and two previous workshops.

- The First Water JPI workshop on Alignment was organised in Brussels, in October 2014, to discuss challenges, opportunities and recommendations for action.
- The Second Water JPI Workshop on Alignment held in Paris, in November 2015, identified 10 key recommendations for short- medium- and long-term actions.

An Alignment Task Force was established, made up of voluntary delegates, to prepare a Roadmap on alignment activities.

Under WaterWorks2015, two Alignment Workshops are planned. They are:

- 2017 Water JPI Alignment Workshop (Spring 2017): Sharing of good practices –
  - Case Study-1: Thematic Annual Programming (TAP), and
  - Case Study-2: Countries with High-level involvement – Alignment Vs. Role of the Mirror Groups.
- 2019 Water JPI Alignment Workshop (Autumn 2019): Monitoring of Specific Actions - Results of Cases Studies (Report)

The first WW2015 workshop gathered 29 people: members of the Governing Board, Water JPI partners as well as guest speakers from the EC, ERA-LEARN 2020, FACCE-JPI and GPC.

The outputs from the workshops will be used to inform future alignment activities.

In addition, roadshows, to further disseminate the Water JPI; meet with the relevant key stakeholders and present the outcomes of the other Case Studies, will be organised in 2017 in Latvia, Austria and Estonia.

1. 3. Aims of this Report

This document contains the Proceedings of the 2017 Water JPI Alignment Workshop, which took place in Stockholm on the 4th April 2017. All presentations, as well as the workshop documentation, are available from the Water JPI website.

This report is organised as follows:

- Section 2 provides an overview of the methodology in planning the workshop;
- Section 3 provides the proceedings of the workshop; and
- Section 4 provides the key recommendations arising from the workshop.

In addition,

- Annex 1 provides the list of all attendees;
- Annex 2 includes the workshop programme;
- Annex 3 provides the questions for the round table discussions;
- Annex 4 includes the results of the Mirror Group Survey (Case Study-2); and
- Annex 5 includes a copy of ERA-LEARN's Typology of Existing Alignment Actions and Instruments.

This report was prepared based on the presentations and notes provided by the rapporteurs, as well as the feedback received from the attendees on the draft version of this document.

2. Methodology

The 2017 Water JPI Alignment Workshop was organised by the Environmental Protection Agency (Ireland), with the support of the WaterWorks2015 partners, as well as of the WaterWorks2015 and Water JPI Secretariats.

2. 1. Workshop Aims and Objectives

The aims and objectives of the 2017 Water JPI Alignment Workshop are to promote alignment of national research programmes through the following:

⇒ Share good practices;
⇒ Exchange views on specific alignment instruments;
⇒ Identify the current situation & goals / targets regarding alignment;
⇒ Progress Case Study 1 "Identification of RDI needs / Discussion of mechanisms for Thematic Annual Programme (TAP)"; and
⇒ Progress Case Study 2 "Review of findings from the Mirror Group survey".

2. 2. Workshop Attendees

The 2017 Water JPI Alignment Workshop was open to all Water JPI Advisory Boards members, Water JPI Governing Board members, as well to the WaterWorks2015 partners and a selection of organisations involved in alignment including the EC, GPC, ERA-LEARN and FACCE-JPI.

Annex 1 provides the list of all attendees.

2. 3. Workshop Programme

The workshop included three plenary sessions, as well as two round table discussions. The workshop programme and round table discussion questions are available in Annex 2 and Annex 3.

2.3.a. Plenary Session-1

The first plenary session, chaired by Padraic Larkin (Water JPI Co-Chair), provided an insight into the Water JPI alignment past actions; introduced the concept of alignment from different perspectives; and presented examples of good alignment practices which contributed to the round table discussions.
Presentations during the first plenary session were made by:

- Dominique Darmendrail (Water JPI Coordinator, France)
- Padraic Larkin (Water JPI Co-Chair, Ireland)
- Panos Balabanis (DG Research and Innovation, European Commission)
- Leonidas Antoniou (Chair of the GPC, Cyprus)
- Alice Wemaere (Environmental Protection Agency, Ireland)
- Michael Dinges (ERA-LEARN 2020, Austria).

2.3.b. Round Table Discussion-1

Each round table group had one rapporteur and at least one speaker from the morning plenary session.

The expected outcome of this round table discussion was to get feedback on alignment activities, barriers and solutions and indicators to measure alignment; in particular to identify:

- The strengths and weakness of the ERA-LEARN types of alignment;
- How to progress alignment in the absence of a specific water research agenda at national level;
- The practical steps Water JPI can take to ensure that the Water JPI Strategic Research Innovation Agenda (SRIA) is considered during the preparation of national (or regional) research programmes;
- The distinction between alignment of agendas, processes and procedures;

- The main barriers to alignment facing partner countries at the various levels (strategy, planning, implementing national programmes, procedures and processes, on-going and new projects);
- Possible indicators for each type of alignment;
- Targets to be achieved by the Water JPI; and
- Data collection (regional / national / JPI) implications.

This was followed by a summary of the discussions provided by the rapporteur.

2.3.c. Plenary Session-2

The second plenary session, chaired by Padraic Larkin (Water JPI Co-Chair), focused on the TAP action including the FACCE-JPI TAP-Soil experience and the results of a survey, carried out in early 2017, looking at interest in and feasibility of the proposed Water JPI TAP action from the Water JPI members.

Presentations during the second plenary session were made by:

- Alice Wemaere (Environmental Protection Agency, Ireland)
- Heather McKhann (FACCE JPI, France)
- Áine Murphy (Environmental Protection Agency, Ireland)

2.3.d. Round Table Discussion-2

Each round table group had one rapporteurs and at least one speaker from the morning plenary session. The expected outcome of this round table discussion was to develop an understanding of the TAP instrument, discuss the expected outcomes of a Water JPI TAP action and consider the mechanism by which the Water JPI should implement the TAP; in particular to identify:

- A proposed RDI Theme for the first Water JPI TAP;
- Expected outputs and how to measure the impact of the TAP action;
- Possible indicators; and
- Mechanisms
    - Funding models;
    - Timing;
    - Barriers; and
    - Possible solutions.

This was followed by a summary of the discussions provided by the rapporteurs.

2.3.e. Plenary Session-3

Padraic Larkin (Water JPI Co-Chair) led and chaired this session. The third plenary session was an opportunity for the Water JPI members to express their interest in participating in the Water JPI TAP action to plan its implementation.

2.3.f. Workshop Materials

All attendees were provided with a workshop agenda, lists of questions for the round table discussions and the ERA-LEARN's consolidated alignment typology in advance of the workshop. Participants were asked to consider these documents (time permitting) during their discussion.

All presentations are available on the Water JPI website via a dedicated webpage.

3. Workshop Proceedings

3.1. Plenary Session 1

The 2017 Water JPI Alignment Workshop was opened by ***Dominique Darmendrail***, Water JPI Coordinator.

The Water JPI Co-Chair, ***Padraic Larkin***, provided a general introduction to the Water JPI's current experience with alignment (Figure 1). He highlighted the following:

- The aims and objectives of the workshop
- The expected workshop outcomes including progressing alignment further and investigating the Water JPI TAP action
- Previous alignment activities including;
    - The outputs of the alignment workshop in Brussels 2014;
    - The establishment of a Water JPI Alignment Task Force and their activities, including the implementation of a survey; and
    - The short, medium and long term recommendations of the alignment workshop in Paris (November 2015).

Figure 1: Padraic Larkin presenting at the Plenary Session 1

The objective of alignment as explained by Padraic Larkin was to have the five Water JPI Themes that are common in all Member countries and not a multiplicity of unlinked national research topics (Figure 2).

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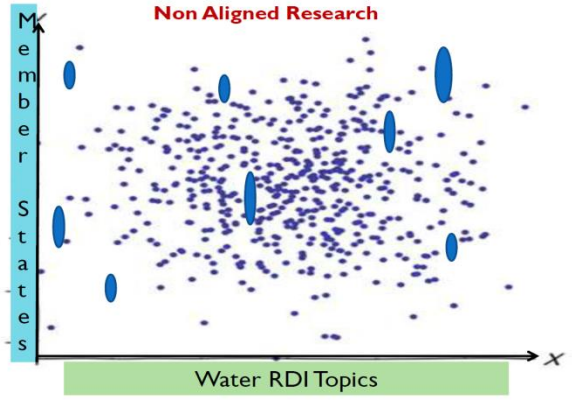

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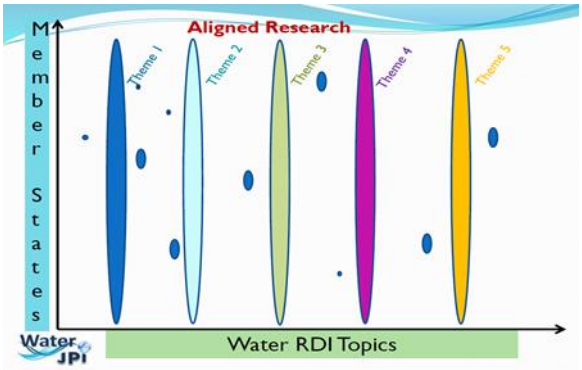

Figure 2: Slides showing alignment of research into defined Themes

As per the 2011 Water JPI Vision, the overall aim by 2020 is to have 20% of national research budgets being allocated to Water JPI activities. The on-going joint Water JPI activities were also presented (e.g. Update of SRIA; Joint Transnational Calls, Mapping Thematic Programming; Knowledge Hubs; Good Practice Workshops).

Discussion:
Following Padraic Larkin's presentation, the discussion centred on the issue of bottom-up national research programmes. Some of the contributions included:

- In France, the JPI Mirror Groups[1] have a role to play in setting the national agenda (in coherence with JPI activities) in addition to communities consultation;
- Some countries, such as Estonia, do not have a national programme;
- The Netherlands do not have a national agenda but can apply alignment tools for different organisations and link to the Water JPI for synergies. Water JPI topics may not always be the priority but could be included;
- In Sweden, there is a national research agenda but responsibility for implementation is split between agencies. However, government policy supports linkages to JPIs and so the national programmes can provide those linkages;
- In Denmark, there is a bottom-up approach where the universities have their own agenda but funding agencies do have influence;
- With a bottom-up approach it is considered to be more difficult to align with the Water JPI SRIA;
- Forces outside of EU research such as the United Nations Sustainable Development Goals (UN SDGs) can also influence research programmes. Alignment of the SRIA and UN SDGs was discussed at the Water JPI Workshop in Dublin on 24th March 2017, where synergies and gaps to be filled were identified; and
- JPI members are encouraged to progress alignment with the Water JPI SRIA when:
    - planning their national / regional calls;
    - setting and participating in Mirror Groups; and
    - mobilising other research programmes.

Link to the presentation:

Panos Balabanis, EC Directorate-General Research and Innovation (DG R&I), presented the EC's perspective on alignment (Figure 3) and the existing complementarity between the EC Framework Programme (FP) and the Water JPI. In particular, he spoke about:

- The development of the meaning of alignment for joint programming initiatives.
- The current issues in progressing alignment including:
    - Impact on national RDI programmes, strategy and funding;
    - The alignment with national and regional policies;
    - Impacts on research capacity: Has the system helped to have more researchers, higher level publications, patents?;
    - Impact at EU level beyond the Joint Calls;
    - Harmonisation and coordination between JPIs; and
    - The impact on stakeholders beyond the RDI community.
- The future issues in progressing alignment:
    - Lessons learned to date;
    - Improved coherence between current alignment instruments for an increased impact and simplified implementation;
    - More stable long-term funding; and
    - Focus on impact-based implementation.

[1] A Mirror Group is defined as a national group set up to disseminate/coordinate water research-related activities at national level.

Figure 3: Panos Balabanis, DG R&I presenting the ECs perspective on alignment

Discussion:
Concerns were raised that there may be too many ERA-NETs and other initiatives (e.g. Articles 185), which may have an impact on the amount allocated for supporting Water JPI activities from the EC. That means that JPIs need to make better use of national funding and be less reliant on EC financial support. Alignment could be used to 'add value' (better research uptake, better competitive teams, higher level of publications). The interaction between research and innovation mechanisms was discussed. The National / Regional programmes ensure both sides are funded. EC alignment in the context of research agendas reflects the RDI requirements and interests. The JPIs must accelerate the uptake and creation of knowledge, e.g. involving the Water WssTP in the Coordinating and Supporting Action on "Tackling Water Challenges in the International Context", IC4WATER. There is a need for alignment between the EC DG Research and DG Environment. For example, work on the Water Framework Directive (WFD) will require policy development to support innovation.
Link to the presentation:

Leonidas Antoniou, Chair of GPC, presented the GPC's perspective on alignment, in particular:

- The evolution of alignment from the Lund Declaration where it was not mentioned to the Dublin Conference in 2013 and most recently its representation as an indicator of JPI performance in the Hernani report;[2]
- The realisation that alignment should be the main priority of Joint Programming;
- The establishment of the GPC working groups to improve the efficiency of investment by having stronger coordination in different countries and between institutions;
- Future Recommendations - There is a need for:
    - Monitoring the alignment at three levels: JPI, GPC and MS;
    - Stronger cross ministry coordination;
    - Co-ordinated approach to institutional and project-based funding;
    - Mobilising of 'in-kind' resources;
    - Aligning actions e.g. joint foresight;
    - Sharing of good practices;
    - An European strategy to address societal challenges and policy development, and for this to be further specified for each JPI;

[2] http://data.consilium.europa.eu/doc/document/ST-1310-2016-INIT/en/pdf

- Potential future alignment targets and in particular implementation of national governance processes, institutional alignment and collaborations with global partners to address global challenges; and
- Development of JPIs into strategic hubs/platform for strategic alignment.

Discussion:

The JPIs need to be aware of what needs to be done at different scales – global and national – in order to align national strategies, instruments, resources and actors. Collaboration through coordination of funding at a national level with funding at European level may not necessarily require more money. Smart alignment will allow MS to jointly identify and address new challenges. The Joint Calls are an example of alignment in action, fostering collaboration on institutional funding to work on synergies among researchers. Other questions arose: i) at what level should we achieve alignment? ii) How could we support countries which have limited human resources?

Water is an International Challenge; the JPI should be broader than H2020 projects to promote countries/countries collaboration. The JPI should try to engage with foundations, such as the Food and Agriculture Organisation of the UN (FAO) or the Organisation for Economic Co-operation and Development (OCDE).

Link to the presentation:

Alice Wemaere, Water JPI partner, presented the results of the Mirror Group Survey. A survey was developed in early 2017 and circulated to six targeted member countries that had Mirror Groups in existence. The survey questions were developed in order to assess the added value of having a national Mirror Group to support and facilitate alignment as well as active participation in the Water JPI activities.

France, Finland, Ireland, Italy, Sweden and United Kingdom have formed Mirror Groups, which are composed of non-governmental organisations (NGOs), RDI funders, Policy makers / national thematic ministries-departments and Researchers.

The survey results highlighted:

- The variation in:
  - Composition e.g. three key groups: Funders / Funders & stakeholders / All relevant stakeholders and end-users (including NGOs);
  - Meeting frequency; and
  - Objectives of the Mirror Groups in the surveyed countries.
- The added value and success factors identified by members of these Mirror Groups which could be used to encourage countries without a Mirror Group to establish one.

The survey results, terms of reference of these groups and conclusions from this Mirror Group case study will be compiled into a report and circulated to all Water JPI members.

The full results of the survey are presented in **Annex 4**.

Link to the presentation:

Michael Dinges, ERA-LEARN, presented the alignment approaches taken in Joint Programming, including in particular:

- The two-part typology: funding agencies and research institutions;
- The topics covered included: Planning; Strategy; Funding; Evaluation; Implementation; Capacity Building; Infrastructure; and Research Dissemination;
- An example of the process of developing a common vision on alignment in Austria; and
- An example of the alignment of national funding in the Ambient Assisted Living Joint Programme (AAL JP).

Discussion:
The JPI members highlighted the need of balance between the continuity of the activities vs. the flexibility principle, and the need of long-term harmonisation of strategic plans at EU and national levels as well as the national / regional rules of eligibility.
Link to the presentation:

3.2. Round Table Discussion-1

This section is based on the rapporteurs' notes provided by the rapporteurs: Maja Kolar (AEI / MINECO), Rui Munhá (FCT) & Anna-Maria Christoforou (RPF).

The attendees were divided into three groups to discuss **how to measure progress in alignment** (Figure 4). A set of questions as set out in Annex 3 were used to inform the discussions:

Figure 4: Attendees in the Discussion Groups

Planning:

- The inventory of national/regional research was considered to be important as it will measure the impact of the Water JPI on research at national level.
- National institutions should be tasked to carry out the national mapping, using a standard set of definitions.
- How mapping should be carried out needs further discussion:
  - ⇒ It might be a good way to mobilise resources;
  - ⇒ The FACCE-JPI held a mapping meeting for exchange of ideas, which may be a useful approach for the Water JPI to take;
  - ⇒ Mapping is very resource intensive and provides only a snapshot in time;
  - ⇒ A national inventory, not just a transnational level, should be developed;
  - ⇒ A level of coordination at a national level is required to get over the problem of fragmentation and to make it less difficult to obtain information;
  - ⇒ Research resources involved and costs incurred, as well as results, should also be included in the annual mapping; and
  - ⇒ There is a challenge to provide a clear understanding from the mapping and therefore terminology needs to be more precise.

Strategy:

- The Water JPI SRIA is a document to be taken "seriously" as it gets high-level sign-off (periodic) on the political level. It, however, requires a long-term commitment mechanism from policy makers to ensure the commitment is embedded within it;

- Work is required to increase the scientific standing of the SRIA and to improve its visibility. The added-value/ benefits should be highlighted to make it more attractive to researchers;
- National coordination is important especially as there is competition at national level for national funds to support the various initiatives;
- In order to measure alignment, a strategic framework is required with as little complexity as possible;
- It is important to map out the research landscape and the various relevant actions and initiatives in the preparation of the research strategy;
- While the challenges may be common, the solutions may not be the same;
- More coordination is required between the EC Directorates;
- The common policy drivers for all Public to Public Partnerships (P2Ps) need to be identified to allow for better cooperation between them. The cooperation should come from the initiative level and move to the national level for approval;
- The new FACCE-JPI Implementation Plan lists all the other actions / landscaping integrated in the process and may be worth investigating further; and
- Big research infrastructure should be an incentive for alignment. The common use of infrastructure is community building as it supports the common interest of researchers and users.

Funding:

- The question on how to integrate with the large amount of funds already in use at research institutions and universities was raised;
- It was suggested that the agenda of Funders, Research Institutions and Universities need to be aligned, e.g. ERA-NET Consortium "European Research Area for Climate Services" (ERA4C services) & TAP action;
- Countries are participating in many different initiatives and it is a challenge to fund them all. Therefore the commonalities between initiatives need to be examined, for example, synergies between the "Partnership on Research and Innovation in the Mediterranean Area" (PRIMA) and the Water JPI' research agenda. If PRIMA was to announce a call with the same subject with a different instrument to another JPI, it may create a risk of duplication. In addition, various EU directives are influencing national (e.g. water; flooding) research agendas;
- Complementarities of national funding, Horizon 2020 and JPIs need to be considered;
- While ERA-NET and Article 185 approach provides a broader picture than the funding of individual research projects (which only provide a patchy approach), there is still a continuity issue. There is a need to build on the momentum, and for a follow-up approach of all joint actions undertaken;
- Embedding policy drivers in the research activities would facilitate long-term commitments.
- A common governance to address societal challenges could be considered while agreeing on a single strategy at broader level. It could be decided which initiative would deal with a specific RDI challenge; and
- Real Common Pot (RCP) could be used for alignment activities. RCP is needed to ensure coordination & administration of joint call and activities; providing financial support for management. However, while the use of the RCP would be ideal, a Virtual Common Pot is more realistic.

Communication:

- Mirror Groups at national level (research community / funders / end-users / economic sector/ policy makers) would be useful means for dissemination.

Research Programmes, Processes and Agendas

Questions

- Based on a Water JPI Survey carried out in 2015, national (or regional) research programmes take up to 2 years to finalise. What practical steps can Water JPI take to ensure that our SRIA is considered during that process?
- Distinction between alignment of agendas, processes and procedures?
- If a country lacks a specific water research agenda, how can we progress alignment?

The above three questions were discussed and the following points were made:

- Greater awareness of the Water JPI SRIA amongst researchers and institutions is needed;
- Involvement in Water JPI needs to be made attractive or of benefit/added value to researchers and institutions;
- Procedures and processes can be aligned with global approaches;
- Clearly defined criteria (eligibility criteria; reporting; procedures; monitoring and evaluation) are required;
- The Water JPI SRIA should be reflective of national priorities, which should, in turn, be aligned with funders, research institutions and universities research agendas;
- Well established funding mechanisms and alignment of institution research programmes are needed;
- The Water JPI could be a repository of all water research projects linked to all ERA-NETs and National and Regional Programmes across all Water-related themes; and
- Infrastructure is quite diverse for the water sector, and therefore may be less an enabler of alignment than in other research areas.

Barriers

Question

- Main barriers in your country/institution for aligning? At the various levels (strategy, planning, implementing national programmes, procedures and processes, on-going and new projects)

There was a lot of discussion around this issue and the main points are listed below:

- There appears to be a lack of awareness of the Water JPI SRIA at all levels from researchers to politicians;
- The research topics are not always relevant to all countries or MS. The topics should be global and sufficiently suitable/beneficial to all Member countries;
- There is a proliferation of ERA-NET Cofund projects and the continuous evaluation, monitoring and amendment of programmes may be seen as a barrier;
- Institutional funding is not aligned nationally. Therefore, there are no collective benefits or institutional incentives to work together for researchers;
- Some research activities have funding from the initiatives, while others do not. This makes it very difficult to get buy-in from the researchers.
- There are multiple funding agencies dealing with the different topics in the SRIA. This may hinder the coordination of research;
- There is a variation in the level of coordination at a national level and a lack of a national research strategy in some countries;
- There appears to be some disconnect between policy implementation, the use of knowledge generated by research, and research funding;
- The national funding systems have not yet adapted to allow for progressing the concept of alignment; and
- When the JPIs are considered as part of the International cooperation strategy of a country, this could create a barrier (i.e. lack of communication between Programme Committee for Horizon 2020 and JPIs priority settings).

How to measure progress in alignment?

Questions

- Possible indicators for each type of alignment
- Targets to be reached for the Water JPI
- Implication in terms of data collection (regional / national / JPI)

The main points of discussion are listed below:

Indicators:

- Level of commitment versus knowledge, in the research community; as well as a mapping exercise may be a way to assess bottom-up approaches;
- The research project outcomes/milestones achieved can be reported and therefore measured;
- The number of relevant organisations involved, the extent of participation in specific activities and the level of collaboration between partners all can be measured;
- Indicators could be divided following the ERA-LEARN typology types, i.e. planning, strategy, funding, etc.;
- How the Water JPI SRIA is informing research funding opportunities at national level, could be tracked by reporting on how many organisations/countries have adapted their research agendas/strategies based on the Water JPI SRIA;
- The impact of alignment on addressing the societal challenges can be measured; and
- The number of researchers (including the number of relevant national institutions) participating in each alignment activity can be tracked.

Targets:

- Update the Water JPI SRIA through bottom-up approaches by asking each Water JPI member country to submit the relevant RDI needs from their own national research strategies for inclusion in the Water JPI SRIA;
- Increase the number of Member countries getting involved and working towards achieving the Water JPI target of 20% increase in funds by 2020

3.3. Plenary Session-2

The plenary session in the afternoon focused on the TAP action, the lessons learned by the FACCE-JPI with the TAP SOIL action on Improving Agricultural Soil Quality and the views of the Water JPI partners on aspects of the TAP.

Alice Wemaere, Water JPI partner, presented the proposed Water JPI TAP action (Figure 5), which is a light alignment tool for the clustering/networking of new and existing National research projects. In particular, she highlighted the following:

- Advantages/Barriers;
- Theme for the 1st Water JPI TAP;
- Expected outputs;
- Coordination of the TAP (within the TAP & by the Water JPI); and
- Impacts.

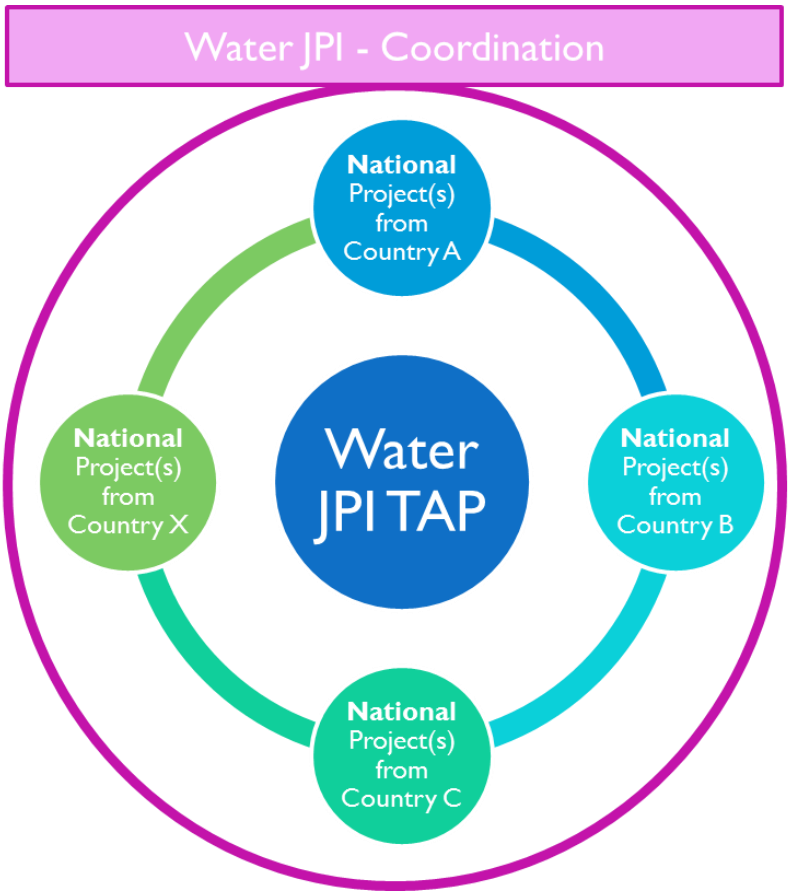

Figure 5: Overview of the Water JPI's TAP action

Discussion:
The TAP action seems very worthwhile as it could allow researchers who may not be part of EU projects to exchange information and network. Therefore the JPI should consider investigating how to integrate countries without national programmes (i.e. full bottom-up approach in Portugal or Italy). There was discussion on how to select the topic and the projects, and how to fund the coordinating costs.
Link to the presentation:

Heather McKhann, FACCE JPI Secretariat, presented the lessons learned from the FACCE-JPI TAP SOIL experience (Figure 6).

Figure 6: Heather McKhann from FACCE-JPI presenting on TAP Soil Pilot action

In particular, she spoke about:

- The need to meet joint programming objectives of alignment, avoiding duplication and fostering synergies and planning research without launching a Call for research proposals.
- The TAP SOIL Pilot action for the FACCE-JPI, including
    - Identification of the research topic;
    - Preparation of the text on the topic in the call documentation of the national research programmes;
    - Evaluation and selection of national project proposals; and
    - Identification of funded projects to form the TAP cluster by the TAP Steering Committee (composed of the funding organisations supporting the TAP action).
- The practical questions such as how to prepare call text; funding; inclusion of existing projects and timing were also presented.
- One open question (Figure 7) remains for the FACCE-JPI TAP SOIL– how to coordinate the cluster (up to 30 projects) and how to financially support the coordination?

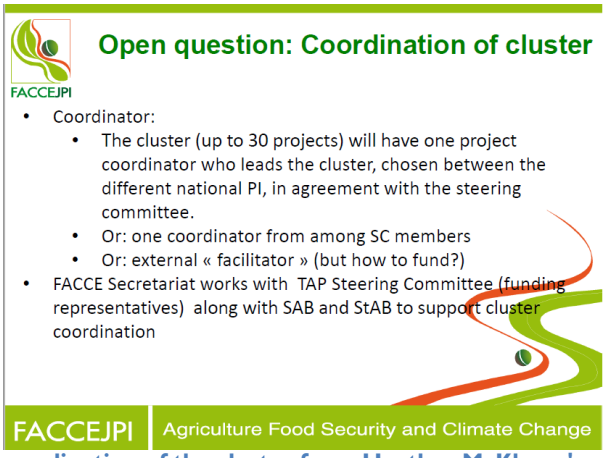

Figure 7: Co-ordination of the cluster from Heather McKhann's presentation

Discussion:

The discussion centred on the practical application of selecting the projects and the funding mechanism. Involvement in the TAP is voluntary. The policy relevance of the selected topic is essential to consider. Existing projects (i.e. already on-going / funded via past national calls) could be considered for the TAP, as long as they had still 12 months remaining in their lifetime.

There is a need for joint coordination to allow exchange of costs/staff/resources. One option to consider is to have one country giving extra funding to projects willing to coordinate

Link to the presentation:

Áine Murphy, Water JPI partner, presented the results of the TAP Survey (Figure 8).

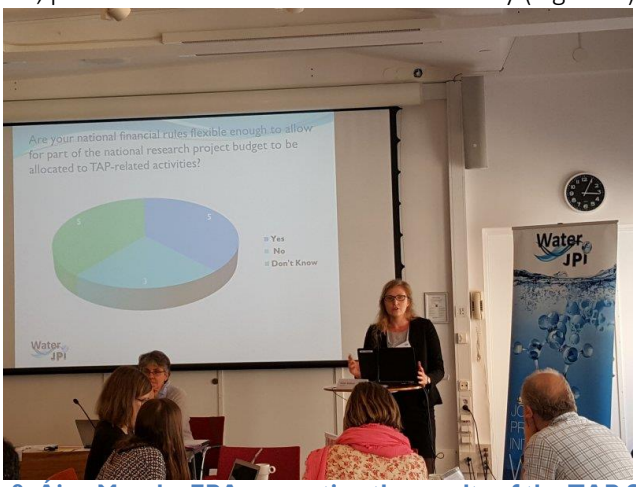

Figure 8: Áine Murphy EPA presenting the results of the TAP Survey

The survey was circulated to all the Water JPI community in early 2017. 15 responses were received. Table 1 provides a summary of the responses received.

Survey Questions	Summary Answers
Would your organisation be interested in taking part of this case study?	"Don't know" and "yes" were the dominant answers dominant answers.
What is the frequency of the national research calls in your organisation?	For the majority, it is annually.
Are your organisation's research calls?	"Mixed" for mostly all organisations.
Would it be possible to include a reference to the Water JPI TAP in your research call?	5 organisations answered yes, 2 no, and 5 others made additional comments
Would it be easier if working with on-going/existing funded projects which are connected to the selected TAP Call content?	The majority of answers were "No
• Are your national financial rules flexible enough to allow for part of the national research project budget to be allocated to TAP-related activities?	Five answered "Yes" and five answered "don't know" with three funders answering "No".
In your view, could the following be difficulties in preparing the Water JPI TAP Call?	⇒ Timing of the TAP call vs. Timing of National Calls (9) ⇒ Level of additional funding to be included in the national fund for supporting the networking activities (6) ⇒ Preparation of Call Text (5) ⇒ Identification of the scope of the TAP (3) ⇒ Other (4)
In your view, what could be the difficulties in coordinating the Water JPI TAP cluster (network composed of the Water JPI TAP national funded projects)?	The two main responses were "Assessing the impact of the cluster" (4) and "Deciding who should co-ordinate the cluster" (3).
In your view, what could be the difficulties in ensuring the Water JPI TAP is representative of: ***Country Distribution (max. number per country, balance between regions)***	Some of the answers included: Selecting research priorities that are relevant to a broad range of participants and the need to attract a wide participation of countries to reach the critical mass.
In your view, what could be the difficulties in ensuring the Water JPI TAP is representative of: ***The Type of Research (from academic to innovation)***	The answers were varied but included differences in TRL levels; a misalignment of focus area and level of research expertise and fitting TAP to research remit of funding agencies.
In your view, what could be the difficulties in ensuring the Water JPI TAP is representative of: ***The Level of Impact (vs. other initiatives in the same area)***	There was a variety of responses, which included: ⇒ ensuring good dissemination, ⇒ monitoring; ⇒ measureable impact; ⇒ different national challenges that require different impact requirements; and ⇒ level of ambition.

Table 1: Water JPI TAP Survey 2017 results

The survey also asked participants to rank in order of priority the most relevant RDI subthemes, which they would like to be considered for the Water JPI TAP. The survey prioritised the Water JPI SRIA subthemes based on current and planned thematic activities of the Water JPI. The subthemes highlighted in Blue below are those which could be considered for the Water JPI TAP action:

⇒ Subtheme 5.1. Enabling Sustainable Management of Water Resources *(Topic of the proposed 2nd Water JPI TAP action, to be started in 2018/19)*

⇒ Subtheme 2.1. Emerging Pollutants and Emerging Risks of Established Pollutants: Assessing Their Effects on Nature and Humans and Their Behaviour and Opportunities for Their Treatment *(Topic of the proposed 1st Water JPI Knowledge Hub to be launched in 2018)*

⇒ Subtheme 1.1. Developing Approaches for Assessing and Optimising the Value of Ecosystem Services

⇒ Subtheme 4.2. Reducing Soil and Water Pollution

⇒ Subtheme 4.1. Improving Water Use Efficiency for a Sustainable Bio-economy Sector

⇒ Subtheme 3.1. Developing Market-Oriented Solutions for the Water Industry (not all Funding Partner Organisations (FPOs) can fund Enterprises)

Link to the presentation:

3.4. Round Table Discussion-2

This section is based on the notes provided by the rapporteurs: Áine Murphy (EPA), Margaret Keegan (EPA) & Kristina Laurell (FORMAS). The attendees were divided into three groups to discuss the proposed Water JPI TAP action (Annex 3).

Select RDI Themes

There was no clear preference arising from the discussions of the three groups.

- Some subthemes, such as Subtheme 5.1 '*Enabling Sustainable Management of Water Resources*', were thought to be too broad for a TAP action.
- Projects under Subtheme 4.2 may have linkages to the projects funded under the 2016 Water JPI Joint Call (in collaboration with the FACCE-JPI) and the question was raised regarding timescales between Water JPI-funded projects and the proposed TAP action.
- Some subthemes have common elements, such as 'extreme events', i.e. Subthemes 1.3 and 2.2.
- There was some interest in Subtheme 1.1: *Developing Approaches for Assessing and Optimising the Value of Ecosystem Services.*

Further discussion will be required in order to agree on the final theme/subtheme for the proposed Water JPI TAP action.

Expected outputs and how can we measure impact of a TAP action?

Outputs:

- State of the art research, high impact joint scientific publications/review papers, mutual learning, cohesive practices and methodologies;
- Joint Synthesis reports on the topic;
- Common /shared infrastructure;
- Presentations at Water JPI events;
- Information exchange and data exchange; and,
- Comparative studies which identify different issues when comparing one country to another.

Impacts:

- Forming new transnational consortia on specific topics;
- Sharing of experience of participation in Research Call outside of EU;
- Self-sustaining cluster without the financial support of the Water JPI, e.g. COST Action proposal / Horizon 2020;
- Contributing to the identification of common national priorities to be included in the Water JPI SRIA updates and Joint Calls;
- Creating a leveraging network or a 'Think Tank';
- Participation in the TAP action by researchers, who would not usually be involved in transnational activities; and,
- Funding model for meetings and coordinating activities.

Possible indicators

The indicators may be qualitative or quantitative in nature and suggestions are summarised below:

- The number of publications that acknowledge the TAP;
- The level of researchers' mobility;

- The number of shared data infrastructure/interfaces/data exchange;
- The number of standard methods/standards developed; and
- The extent of researchers' participation in foresight exercises, Water JPI events, and Water JPI workshops.

Mechanisms

The mechanisms for setting up the TAP were discussed and the main points are summarised below:

Funding Models

- For Bottom-up programme: existing national projects to be considered for the TAP, while for Top-down funders, new projects via new call for research proposals could be considered
- In the case of a multi-partner call, the call description must specify that some of the national project budget will be allocated to cover the costs of participation in the TAP action. The national rules may need to be adapted to allow for this;
- The cost associated with participation in the TAP action should be relative to project size of the project, with the maximum cost being €10,000 per project;
- In the FACCE-JPI model, the funding is part of the national call funding;
- The provision for having a networking budget for transnational expenses as well as national expenses must be decided by the national funders; and
- The inclusion of existing projects into the TAP action is to be on a voluntary basis.
- Coordination:
  - It may prove difficult for an existing project to take the lead. Where funders have a top-down approach it would be useful that one of the project coordinators would volunteer as the Cluster Coordinator;
  - One of the national funders could provide additional funding to one of their national project co-ordinators to be the Cluster Coordinator, as was done in TAP Soil; and
  - Peer-Coordination of networking activities is another possible approach but this would require support from the Water JPI Secretariat.

Timing:

- It usually takes 12 months from the announcement of a research call to a project award (top-down approach);
- The Water JPI TAP action is planned to be advertised at JPI-level. There is a need to ensure that the researchers are aware that they can participate;
- New projects participating in the TAP action are considered to be those who have started for at least 3 months in order to make their participation more efficient/active;
- Existing projects could be considered for participating in the TAP action, as long as the projects still have at least 1 year left;
- A staggered start for projects joining the TAP should be facilitated;
- Existing projects may require no-cost time extensions for the participating in the TAP action; and
- The call content relating to the TAP action must be developed during 2017 / early 2018 in order to launch the TAP action at the beginning of 2019.

Barriers:

- Not all countries are interested in the topics selected;
- There is competition between researchers for funding and so they may not be prepared to work together;
- The researchers may not be interested in participating as they do not see the benefits/added-value for themselves;
- There are differences in scale of project between countries and funders, which may result in an inequality;
- In some countries, the national funding regulations do not allow for international cooperation; and

- Some contracts are inflexible and therefore will not allow changes to be made to include the TAP action for existing projects.

Possible solutions:

- The Call text could be drafted so that it will attract all researchers using a top-down procedure. However, the researchers' needs should be understood;
- The right Coordinators must be selected for coordinating the TAP action;
- Existing projects can be allowed to participate but this will require that a funding mechanism for direct funding will be worked out; and
- Flexible contracts could be put in place, which would allow the transfer of funds to cover extra travel costs.
- An evaluation of the cluster at its closure should be done (not only under the willingness of the PI).

3.5. Plenary Session-3

The third and final plenary session was chaired by Padraic Larkin (Water JPI Co-Chair). This session focused on the funders declaring their interest in the proposed Water JPI TAP Pilot Action.

All in attendance were supportive of the proposed Water JPI TAP action, and a large majority expressed their interest to progress the TAP action. They indicated that there would be potential interest by their funding agencies to support the TAP action for particular projects. This included the following countries: Belgium, Cyprus (to be confirmed), Denmark (to be confirmed), France, Germany (to be confirmed), Ireland, the Netherlands, Portugal, Spain, and Sweden (Estonia and South Africa (no mandate to vote) did not indicate their interest).
Link to presentation:

4. Recommendations

4.1. Sharing of Good Practices

One of the aims of the 2017 Water JPI Alignment Workshop was to gather Water JPI partners interested in progressing Alignment in the Water JPI both nationally and internationally and to share good practice.

The 29 attendees provided a very good coverage of the Water JPI membership. Fifteen countries were represented and the EC also participated (Figure 9).

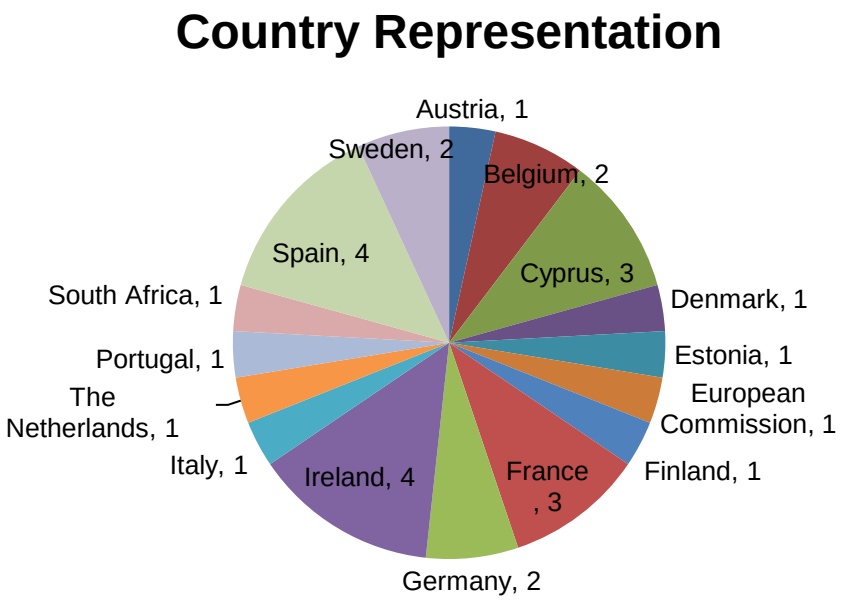

Figure9: Illustration of the Water JPI membership participating in the workshop

4.2. Key Recommendations

Discussions from the workshop identified the following key points regarding alignment and how to further progress it:

- To encourage partners to progress alignment with the Water JPI SRIA when planning their national Call and consider setting up Mirror Groups;
- For partners to mobilise their research programmes to ensure due consideration of Water JPI SRIA;
- Further alignment between DG Environment and DG R&I especially for WFD policy development to support innovation;
- To consider what is being undertaken at the global and national level scale to align strategies, instruments, resources and actors;
- If at the political level, countries would re-commit their support for the Water JPI SRIA;
- If actions were taken to increase awareness of the Water JPI SRIA amongst researchers and institutions;
- To align the commonalities between various JPIs; and
- To consider the two-part typology on alignment approaches developed by ERA-LEARN and the lessons learned from the FACCE-JPI TAP SOIL in developing the proposed Water JPI TAP action.

Overall the feedback on the TAP action was positive and there is potential interest by funding agencies to participate in this action. The selection of the theme/subtheme for the 2017/2018 Work Programme and the development of a TAP procedure is the next priority for the Water JPI.

Annex 1: List of Attendees

Name	Organisation	Country
Leonidas Antoniou	Research Promotion Foundation (RPF)	Cyprus
Juliette Arabi	Agence Nationale de la Recherche (ANR)	France
Panagiotis Balabanis	DG Research	European Commission
Anna Maria Christoforou	Research Promotion Foundation (RPF)	Cyprus
Rebecca Chrysafi	Research Promotion Foundation (RPF)	Cyprus
Olga Clevering	Ministerie van Infrastructuur en Milieu (IenM)	Netherlands
Dominique Darmendrail	Water JPI Coordinator	France
Gema del Rio	Centre for the Development of Industrial Technology (CDTI)	Spain
Michael Dinges	ERA-LEARN	Austria
David Gonzalez Martinez	Agencia Estatal de Investigación (AEI/MINECO)	Spain
Kathleen Goris	Flanders Innovation and Entrepeneurship (VLAIO)	Belgium
Margaret Keegan	Environmental Protection Agency (EPA)	Ireland
Ivo Krustok	Ministry of the Environment (MoE-EE)	Estonia
Maja Kolar	Agencia Estatal de Investigación (AEI/MINECO)	Spain
Padraic Larkin	Water JPI Co-Chair	Ireland
Kristina Laurell	Swedish Research Council (FORMAS)	Sweden
Steffi Lehmann	Forschungszentrum Jülich (JÜLICH)	Germany
Heather McKhann	FACCE JPI	France
Rui Munhá	Fundação para a Ciência e Tecnologia (FCT)	Portugal
Áine Murphy	Environmental Protection Agency (EPA)	Ireland
Vineela Pillay	South African Embassy, Department of Science and Technology	South Africa
Joaquin Serrano Agejas	Agencia Estatal de Investigación (AEI/MINECO)	Spain

Mats Svensson	Swedish Agency for Marine and Water Management (SWAM)	Sweden
Teppo Vehanen	European Inland Fisheries and Aquaculture Advisory Commission	Finland
Gert Verreet	Flanders Department of Economy, Science and Innovation (EWI)	Belgium
Roberta Volpi	Ministero delle Politiche Agricole, Alimentarie Forestali (MIPAAF)	Italy
Alice Wemaere	Environmental Protection Agency (EPA)	Ireland
Saskia Wohlgemuth	Forschungszentrum Jülich (JÜLICH)	Germany
Carla Garcia Dumay	Institut national de recherche en sciences et technologies pour l'environnement et l'agriculture (IRSTEA)	France
Bjørn Kaare Jensen	Geological Survey of Denmark and Greenland (GEUS)	Denmark
Maurice Héral	Water JPI Chair	France

Annex 2: Programme

9.00am:	**Welcome**	Dominique Darmendrail, Water JPI Coordinator / Chair (ANR, FR)

Plenary Session 1 (view master presentation)

Chaired by: Padraic Larkin (Water JPI Co-Chair)

9.10am:	**Where are we at within the Water JPI?**	Padraic Larkin (Water JPI Co-Chair)
9.30am:	**What is alignment? EC's perspective**	Panos Balabanis (DG Research)
9.50am:	**What is alignment? GPC's perspective**	Leonidas Antoniou (Chair of GPC)
10.10am:	**Sharing of good practices (Review of toolbox) – Mirror Group Survey**	Alice Wemaere (EPA, IE)
10.30am:	**How to do Alignment?**	Michael Dinges (ERA-LEARN)

Questions & Answers after each Speaker

Round Table Discussions

Rapporteurs: Maja Kolar (AEI / MINECO), Rui Munhá (FCT) & Anna-Maria Christoforou (RPF)

11.15am:	**How to measure progress in alignment?**
12.45pm:	**Short Summaries per round table provided by the Rapporteurs**

Plenary Session 2

Chaired by: Padraic Larkin (Water JPI Co-Chair)

2.00pm:	**Water JPI TAP Instrument**	lice Wemaere (EPA, IE)
2.15pm:	**Lessons learned from FACCE TAP**	Heather McKhann (FACCE JPI)
2.35pm:	**Presentation of the TAP Survey**	Áine Murphy (EPA, IE)

Questions & Answers after each Speaker

Round Table Discussions

Rapporteurs: Áine Murphy (EPA), Margaret Keegan (EPA) & Kristina Laurell (Formas)

2.45pm:

- Select RDI Themes
- TAP model – Expected Outputs and how can we measure impact? (Indicators)
- Funding Models, Timing, Barriers

4.00pm: Short Summaries per round table provided by the Rapporteurs

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Plenary Session 3

Chaired by: Padraic Larkin (Water JPI Co-Chair)

4.15pm:	Declaration of Interest from funders	Padraic Larkin (Water JPI Co-Chair)
5.15pm:	Close of the Workshop	

Annex 3: Round Table Discussion Questions

Round Table Discussion-1: How to measure progress in alignment?

Alignment Activities

- Group discussion on the ERA-Learn types of alignment – Strengths & Weaknesses
- If a country lacks a specific water research agenda, how can we progress alignment?
- Based on a Water JPI Survey carried out in 2015, national (or regional) research programmes take up to 2 years to finalise. What practical steps can Water JPI take to ensure that our SRIA is considered during that process?
- Distinction between alignment of agendas and processes and procedures?

Barriers

- Main barriers in your country/institution for aligning? At the various levels (strategy, planning, implementing national programmes, procedures and processes, on-going and new projects)

How to measure progress in Alignment?

- Possible Indicators for each type of alignment
- Targets to be reached for the Water JPI
- Implication in terms of data collection (regional / national / JPI)

Round Table Discussion-2: A new tool - Thematic Annual Programming

Select RDI Themes

Expected Outputs and how can we measure impact of a TAP action?

Possible indicators

Mechanisms

- Funding Models
- Timing
- Barriers
- Possible solutions.

Annex 4: Mirror Group Survey Results

How was the Mirror Group set-up?

	Organisation	Response
FINLAND	VTT	Collected by the Finnish Academy
	Natural Resources Institute Finland	Invited
	Academy of Finland	Group of stakeholders were invited to AKA to discuss Finland's role in Water JPI
	Geological Survey of Finland - GTK	
FRANCE	ANR	By French GB Members, with the key actors at national level
	BRGM, member of the French Alliance (AllEnvi)	by French GB Members, with the key actors at national level
	IRSTEA	The Research Ministry asked the Research Alliance (AllEnvi) to set-up the Mirror Group with the key players at national
IRELAND	Environmental Protection Agency	The EPA invited other relevant funders (i.e. funding Water Research in Ireland) to take part in a coordination group at national level for Water Research (remit of the EPA) - The membership was widen at a later stage to key stakeholders.
	Teagasc	EPA initiative - they invited potential group members
	Met Éireann	unknown
	Geological Survey Ireland	unknown
	Department Housing, Planning, Community & Local Government	
	Irish Water	unknown
ITALY	MIUR	It was set up alongside the SC 5 national consultation board
SWEDEN	Formas	Invitations sent to other authorities
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	Superseded previous body (UK Water Research and Innovation Partnership)
	University of Portsmouth	

What is the role of the Mirror Group in the context of alignment of research agendas, policy setting and implementation?

		What is the role of the Mirror Group in the context of alignment of research agendas, policy setting and implementation?	*Does Mirror Group facilitate alignment of national water research and JPI?*
FINLAND	VTT	Minor	Yes
	Natural Resources Institute Finland	-	-
	Academy of Finland	This is a broad alliance achieving these aims, through voluntary collaborations and knowledge exchange amongst its partners	Yes
	Geological Survey of Finland - GTK	-	-
FRANCE	ANR	Sharing positions (SRIA, implementation actions) at national level, strategic planning, increase national commitment, speed up the uptake of results by national level	Yes
	BRGM, member of the French Alliance Allenvi	Sharing positions (SRIA, implementation actions) at national level, strategic planning, increase national commitment, speed up the uptake of results by national level	Yes
	IRSTEA	Sharing positions (SRIA, implementation actions)	Yes
IRELAND	Environmental Protection Agency	The mirror group provide a forum for exchange of views, priorities, develop opportunities for co funding and avoid duplication. It provides a forum for comments on research agendas at organisation level.	Yes
	Teagasc	-	-
	Met Éireann	actor	Yes
	Geological Survey Ireland	Limited at present. Different research funders have different objectives, although most aim to meet EU/National objectives or drivers, or public need. Funded research might support policy setting or might be in response to policy.	Yes
	Department Housing, Planning, Community & Local Government	-	-
	Irish Water	-	Yes
ITALY	MIUR	The MG is facilitating the dissemination of the agendas and it is dealing with issues and priorities of interest for the national context.	yes

SWEDEN	Formas	National alignment of research agendas	Yes
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	This is a broad alliance achieving these aims, through voluntary collaborations and knowledge exchange amongst its partners	NO
	University of Portsmouth	-	-

What is the role of the Mirror Group in the context of alignment of research agendas, policy setting and implementation?

		What is the role of the Mirror Group in the context of alignment of research agendas, policy setting and implementation?	*Does Mirror Group facilitate alignment of national water research and JPI?*
FINLAND	VTT	Minor	Yes
	Natural Resources Institute Finland	-	-
	Academy of Finland	Mirror group gives a back bone for the participation in the Water JPI. Due to wide participation of different stakeholders in the group, Water JPI and its activities are well known in Finland.	Yes
	Geological Survey of Finland - GTK	-	-
FRANCE	ANR	Sharing positions (SRIA, implementation actions) at national level, strategic planning, increase national commitment, speed up the uptake of results by national level	Yes
	BRGM, member of the French Alliance Allenvi	Sharing positions (SRIA, implementation actions) at national level, strategic planning, increase national commitment, speed up the uptake of results by national level.	Yes
	IRSTEA	Sharing positions (SRIA, implementation actions)	Yes
IRELAND	Environmental Protection Agency	The mirror group provide a forum for exchange of views, priorities, develop opportunities for co funding and avoid duplication. It provides a forum for comments on research agendas at organisation level.	Yes
	Teagasc	-	-
	Met Éireann	actor	Yes
	Geological Survey Ireland	Limited at present. Different research funders have different objectives, although most aim to meet EU/National objectives or drivers, or public need. Funded research might support policy setting or might be in response to policy.	Yes
	Department Housing, Planning, Community & Local Government	-	-
	Irish Water	-	Yes
ITALY	MIUR	The MG is facilitating the dissemination of the agendas and it is dealing with	yes

		issues and priorities of interest for the national context.	
SWEDEN	Formas	National alignment of research agendas	Yes
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	This is a broad alliance achieving these aims, through voluntary collaborations and knowledge exchange amongst its partners	NO
	University of Portsmouth	-	-

What is the role of the Mirror Group in the context of stakeholder involvement and engagement?

FINLAND	VTT	minor
	Natural Resources Institute Finland	
	Academy of Finland	The Mirror Group representatives are the relevant stakeholders.
	Geological Survey of Finland - GTK	
FRANCE	ANR	Identifying stakeholders needs, promoting actions for involving more, plan activities with them
	BRGM, member of the French Alliance Allenvi	Identifying stakeholders needs, promoting actions for involving them more
	IRSTEA	Involving stakeholders priorities and needs, sharing information
IRELAND	Environmental Protection Agency	Key stakeholders are represented in our Mirror Group. However, we would not see that engagement as such has been promoted by the current set-up of our group - rather better communication/dissemination
	Teagasc	-
	Met Éireann	Facilitator
	Geological Survey Ireland	limited/none
	Department Housing, Planning, Community & Local Government	
	Irish Water	
ITALY	MIUR	The stakeholder involvement was the first aim of the MG
SWEDEN	Formas	It involves stakeholders when needed both to give information regarding Water JPI and to get input from stakeholders and end-users to the Water JPI
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	The Mirror Group offers opportunities to report RDI priorities, new initiatives and outcomes to wide range of stakeholders who are already engaged in the UKWP
	University of Portsmouth	

What is the main added value for Mirror Group members, in having the Mirror Group meetings?

FINLAND	VTT	networking, impacting the SRIA and knowledge exchange
	Natural Resources Institute Finland	-
	Academy of Finland	Dissemination of information, possibility to participate in Water JPI activities, possibility to influence activities or strategy Finland is participating.
	Geological Survey of Finland - GTK	-
FRANCE	ANR	being informed, contribution to activities, increased commitment
	BRGM, member of the French Alliance Allenvi	being informed, contribution to activities, increased commitments
	IRSTEA	being informed, being jpi involved, being reactive,
IRELAND	Environmental Protection Agency	Dissemination, Synergies, Avoidance of duplication, Developing co-funding opportunities
	Teagasc	-
	Met Éireann	funding cycle planning
	Geological Survey Ireland	knowledge of JPI activities
	Department Housing, Planning, Community & Local Government	-
	Irish Water	-
ITALY	MIUR	While transferring vision, information and goals to the MG table, MG members are receiving at the same time an overall vision of the EU-related water agenda/strategic plans gathered from the Water JPI perspectives, but not only (also linking H2020 and EU-related water platforms supporting research and tech transfer)
SWEDEN	Formas	To get information on Water JPIs activities and calls as well as supporting and giving input to Water JPIs work
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	Knowledge exchange
	University of Portsmouth	-

Which success factor criteria (e.g. indicators) could be used for the Mirror Groups?

FINLAND	VTT	% of input to SRIA being taken into account
	Natural Resources Institute Finland	-
	Academy of Finland	commitment
	Geological Survey of Finland - GTK	-
FRANCE	ANR	National contributions / position papers / National answer to JPI activities
	BRGM, member of the French Alliance Allenvi	National contributions / position papers /
	IRSTEA	national budget contributions, number of meetings, involved people, position papers,
IRELAND	Environmental Protection Agency	cofunding levels at national but also for JPI calls, level of feedback received on strategic/calls documentation, Ensuring that all members get added value for their participation
	Teagasc	-
	Met Éireann	policy drivers
	Geological Survey Ireland	don't know
	Department Housing, Planning, Community & Local Government	-
	Irish Water	-
ITALY	MIUR	Indicators evaluating quantitatively the shared knowledge that MG provide by means of the MG members in order to link with national institutions. A yearly survey compiled by national key stakeholder should be performed for gathering information on the awareness of the end/active users and the impact of the MG on the national and international/EU water agenda.
SWEDEN	Formas	Cooperation, Knowledge transformation, Communication,
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	Future engagement with JPI partners (within/beyond Europe).
	University of Portsmouth	-

For countries without a Mirror Group, can you suggest what they need to know to establish a Mirror Group in their country?

FINLAND	VTT	-
	Natural Resources Institute Finland	-
	Academy of Finland	to know key stakeholders in the field
	Geological Survey of Finland - GTK	-
FRANCE	ANR	mapping their actors, exchange with them for seeing if interested
	BRGM, member of the French Alliance Allenvi	mapping their actors, exchange with them for seeing if interested
	IRSTEA	check the interest of water significant players (stakeholders, research)
IRELAND	Environmental Protection Agency	Clear Terms of Reference, Ensuring that all members benefit from the membership to the Group, Ensuring that all key funders as well as main stakeholders are included
	Teagasc	-
	Met Éireann	unknown
	Geological Survey Ireland	strong organisation mandated with water-related issues, that has good internal support for a leadership role (funds, staff, vision)
	Department Housing, Planning, Community & Local Government	-
	Irish Water	-
ITALY	MIUR	A Preliminary listing and segmentation of the water sector should be done for gathering an overall view of the stakeholders at the country scale. The identification of key institutions should be also performed considering education/research/academic entities, governmental/agency and policy/decision making entities as well as industries and SMEs and all other entities (NGOs, associations, etc) involved and interested in the water/environment sector
SWEDEN	Formas	Ministry's support to build up a network (Mirror Group). Resources from the coordinating organization in charge of keeping the group together. Interested partners in the group. This can be created by providing information on the benefits of being part of the group such as knowledge sharing and collaboration on calls and strategic workshops.
UNITED KINGDOM	Natural Environment Research Council Centre for Ecology and Hydrology	Evidence of common interest across water sector and narrative which shows value of collaborations at national levels across diverse partners (and relevance of/interest in the JPI to this group).
	University of Portsmouth	

Annex 5: ERA-LEARN - A Typology of Existing Alignment Actions and Instruments

prepared in the context of Task 4.1 and updated in Task 4.2 of the ERA-LEARN2020 Project
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Notes:

Overall comment: we have added a few joint actions that were proposed by several JPIs (indicated as "NEW"), and have added elements arising from the case studies conducted (columns M, N, L, O)

(1) Overall alignment approach (hidden column): refers to strategic, operational or financial approaches.
(2) Cooperation mode (hidden column): e.g., programme cooperation; institutional cooperation, networking and capacity building amongst researchers
(3) Financing (hidden column): refers to financing sources, e.g., participating countries and/or the EC
(4) Good practices/ Key factors of successful implementation: includes elements from the ERA-LEARN2020 case studies where relevant. **FEEDBACK SOUGHT ON THIS COLUMN**
(5) The columns "Benefits" and "Weaknesses" have been complemented with elements from the ERA-LEARN2020 case studies. **FEEDBACK SOUGHT ON THIS COLUMN**
(6) Other examples: **FEEDBACK SOUGHT ON THIS COLUMN, ESP. FROM THE 10 JPIs**
(7) Some alignment actions and instruments can serve several purposes, e.g., a Knowledge Hub facilitates networking and capacity building among researchers, but can also promote the implementation of joint research activities and facilitate the calibration or standardisation of research methodologies.

ACRONYMS: RFO: research financing organisation; RPO: research performing organisation

N°	Phase of the research programming cycle	Joint action name	Description	*Good practices / Key factors of successful implementation*	*Benefits / Strengths*	*Weaknesses / Challenges*	ERA-LEARN 2020 case study (when available)	Other examples
1	**Research planning**	**Conduct of joint foresight**	Joint foresight is a forward-looking activity that aims to identify forthcoming Societal Challenges, build a common strategic vision on how to address these, and identify possible future common strategic research topics	** Follow a dedicated and properly coordinated foresight exercise* ** Receive support from foresight experts when setting up and implementing the foresight process* ** Organise consultations amongst experts* ** Feed the results into the JPI joint Mission, Vision Paper and/or Strategic Research Agenda* *The EC Joint Research Centre For Learn Online Foresight Guide provides advice on how to best conduct foresight: http://forlearn.jrc.ec.europa.eu/guide/0_home/index.htm)* *Free Foresight Training by ERA-LEARN 2020 Project once a year (https://www.era-learn.eu/events)*	** Facilitates the implementation of other alignment actions (at strategic, operational and financial levels). E.g., in the case of SCAR: joint foresight has led to the launch of new bio-economy ERA-NETs and JPIs* ** Promotes networking and the development of a common vision about future (scientific) challenges amongst experts of various countries*	** Time-consuming* ** Challenge in identifying and engaging adequate experts across countries* ** Important structural differences in national programmes' orientations*	JPI Oceans: Case study "JPI Oceans Explores the Potential of Foresight Exercises"	* Steering Committee on Agricultural Research (SCAR) joint foresight reviews *JPI Urban Europe: Urban Megatrends Study

2	**Research planning**	**Conduct of joint mapping of existing research**	Mapping is an activity that aims to identify and map ongoing and planned national research programmes, and identify possible research gaps amongst participating countries	** Clearly define the exact scope (well-defined common theme or joint action to be implemented) and objectives of such an exercise before starting it* ** Identify appropriate actors to be invited to participate in the mapping (e.g. programme managers in RFOs, RPOs, individual scientists, non-governmental stakeholders)* ** Give clear instructions to participants so as to ensure they provide accurate, complete and comparable information* ** Rely on appropriate, time-efficient and complementary mapping tools (e.g. questionnaire / workshop results complemented by a desk study)* ** Rely on an inclusive and interactive mapping process in order to promote trust-building and commitment amongst all participating agencies/ countries* ** Ensure effective procedures to take account of mapping outcomes in joint strategic and operational JPI documents (e.g. SRA, IP, scoping of a new joint action)* ** Renew mapping activity before any Strategic Research Agenda update and/or before a specific joint action is undertaken (and evaluate it for future improvement when renewed)*	** Provides a common mapping methodology to JPI/P2P member countries,* ** Promotes transparency and information-sharing on national research strategies and activities; provides an overall picture of national research activities and allows to identify research gaps and potential synergies* ** Allows to inform decision-makers of potential transnational strategic priorities and as such helps avoid duplication of research* ** Promotes networking amongst experts (including research experts, policy-makers and other stakeholders of various countries)*	** Difficulty in achieving a common understanding about the exact scope of the joint mapping exercise* ** Challenge to collect homogenous mapping data, e.g. due to the interdisciplinary scientific scope of a JPI, the diversity of funding agencies and national research programmes and the variable involvement of participants* ** Rapid obsolescence of mapping results*	Case study on FACCE JPI Joint Mapping Meetings	* JPI AMR mapping of national research policies and funding programmes * Water JPI mapping exercise * SNOWMAN Network mapping exercise in the area of sustainable soil and water management * JPI Urban Europe Mapping of national RTDI programmes in the urban area
3	**Research strategy**	**Adoption of common strategic research priorities**	Develop a common strategic vision and agenda that builds on joint foresight and mapping, as well as nationally identified priorities and ERA/H2020 priorities. Consider national coordination as pre-condition for strategic alignment on transnational level.	** Clearly define the objective and the scientific scope of the SRA development.* ** Bring the right national and European actors around the table, in particular RFOs. Jointly develop a common long-term vision that relies on a strong sense of trust, inclusiveness of and ownership by all members by empowering them in leading the SRA elaboration process for strong long-term commitment to the latter* ** Requires that each participating country has identified its*	** Key prerequisite to achieve greater alignment of national research and innovation strategies, required base for further alignment at operational and financial levels* ** Key to encourage participating countries to modify their national R&I strategies and programmes, as a consequence of the adoption of joint R&I priorities in a specific field* ** Adopting a trans-disciplinary approach to SRIA development helps reduce research fragmentation and promotes a more systemic approach to addressing complex societal*	** As the development of an SRIA is time-consuming and complex, P2P members need to ensure the manageability of its operation: e.g. it may be useful to appoint a small Task Force made up of selected Governing Board members and some other experts to take the lead in this process* ** Challenge to trigger genuine national*	Case study on JPI Climate's Strategic Research and Innovation Agenda National Coordination as pre-requisite for strategic alignment: Case Study - Process towards a Common Position on Alignment in Austria	* JPI Climate SRA (all 10 JPIs have SRAs) * Strategic Research Agenda for Metrology in Europe (EURAMET) * Challenge Paper on National Coordination within the framework of the Mutual Learning Exercise on Alignment and Interoperability

				(consolidated) national R&I priorities and decided what it wants to carry forward at the EU level and what is wants to carry forward at the national level (via national in-country consultations). National coordination is essential for alignment of research priorities on transnational level. This can be achieved by relying on elaborated national / regional research agendas when existing, by developing criteria that facilitate in-country decision-making regarding joint programming and alignment, by relying on the outputs of joint foresight and mapping activities (see actions N°1 and 2) ** The person that represents its country within the P2P decision-making body and that contributes to developing the SRA should represent the views of his/her country as opposed to his/her agency.* ** Clearly distribute responsibilities among P2P governing bodies and ensure an effective communication flow between them in order to involve the P2P structure as a whole* ** Secure appropriate resources in terms of funding support (i.e. at national levels and/or via EC co-funding) and time required from members to effectively design and steer the SRA elaboration process* ** Involve non-governmental actors (scientific experts and stakeholders) through a participatory approach* ** Collectively agree on joint strategic objectives that rely on an integrative approach, especially if dealing with a research area that focuses on a broad systemic issue, hence allowing to avoid further fragmentation of research* ** Develop in parallel or in a second step (i) a practical implementation plan (see action N°4) and (ii) a new/revised P2P governance model in order to support the effective*	*challenges (i.e., challenge-oriented strategic research agenda core themes instead of discipline-oriented ones)* ** Relying on an inclusive approach allows to foster high involvement and leadership of member countries and strong ownership of achieved outcomes (i.e. content of the SRA), which is key for the success of a P2P* ** The SRA elaboration process contributes to strengthening interactions within the P2P decision-making body and across the overall P2P structure as a whole*	*ownership and national priorities, as several Ministries and agencies need to be consulted within each country* ** Challenge to optimally involve all key players in the elaboration process of a Strategic Research Agenda* ** Effective alignment takes time (especially at strategic/policy level), and needs to be supported by adequate (financial and institutional) means.* ** Adequate financing needs to be earmarked for joint programming and transnational R&I joint actions within national research budgets ('glue money')*		

				implementation of the SRIA				
4	**Research strategy**	**Adoption of a common strategic Implementation / Action Plan**	Plan that outlines joint research actions at operational and financial levels (e.g., ERA-NETs, knowledge hubs, research alliances, sharing of research infrastructure and data)	** Develop a national action or Implementation Plan that explains how the participating country will implement the SRIA (linked to the national research and innovation strategy)* ** Identify the right instruments (in a common manner) to implement the SRIA (calls, innovation actions, fast track activities, research infrastructure, networking activities, etc.)* ** Share responsibilities for implementation among the different bodies and stakeholders with P2Ps (e.g. Governing Board, Management Board, Scientific Board, Stakeholder networks, etc.)* ** Ask for detailed financial and in-kind commitment of countries and bodies for the implementation of the SRIA* ** Organise workshops and consultative meetings to agree on who does what for when*	** Facilitates alignment of research programmes, activities and infrastructures at operational and financial levels* ** Allows for variable geometry: each member can choose in which joint action it wishes to participate, in light of its national priorities and funding capacity.* ** Allows for smart specialisation across participating member states*	** Difficulty to trigger genuine national ownership and national priorities, as several Ministries and agencies need to be consulted* ** Difficulty to lead and/or finance joint actions due to the problem of "inter-operability" of national procedures and rules for funding research* ** Potential under-representation of less research-intensive countries could weaken the benefits of alignment at the European level*		* FACCE-JPI Implementation Plan 2014/15

5	**Research strategy**	**Conduct of joint stakeholder consultations**	Seek feedback from stakeholders /end-users before, during and at completion of the joint research actions	** Select a group of representative stakeholders* ** Organise regular consultations with them during the foresight, SRIA development , implementation and dissemination phases* ** Manage to transfer stakeholder consultation processes for the SRIA into permanent stakeholder involvement processes/platforms for any future activity*	** Analysis of the demand side for research* ** Mobilisation of stakeholders for implementation activities derived from the SRIA* ** Increased relevance and impact of joint research actions on stakeholders and users*	** Difficulty in choosing representative stakeholders* ** Challenge in the capacity and time of stakeholders to interact and actively participate*	Water JPI: Case Study - Bridging the gap towards Innovation - The Water JPI Activities on Stakeholder Involvement JPI Urban Europe: Case Study "Co-creation of a Strategic Research and Innovation Agenda in a Joint Programming Initiative - A New Stakeholder Involvement Approach of JPI Urban Europe"	* JPI Urban Europe Project SEISMIC: Societal Engagement in Science, Mutual learning in Cities http://www.seismicproject.eu/ *JPI Urban Europe: Stakeholder Involvement Platform http://jpi-urbaneurope.eu/jpi-ue-activities/stakeholder-platform/ * FACCE-JPI Stakeholder Advisory Group * JPND PPI Stakeholder Advisory Board * More Years Better Lives Societal Advisory Board *Biodiversa Stakeholder Engagement Handbook http://www.biodiversa.org/702
6	**Research strategy**	**Cooperation between P2Ps**	Cooperation between P2Ps can lead to the implementation of various activities reflecting the degree of cooperation (e.g. exchange of information, co-coordination and management of joint actions, etc.)	** Joint strategic decisions and strategic exchange (e.g. on internationalisation, widening activities, valorisation of results, self-sustainability of JPIs etc.)* ** Exchange of information on ongoing and forthcoming work;* ** Conduct of joint actions;* ** Joint exploitation of scientific results for market-based innovations* ** Dedicated time resources for exchange*	** Structuring the ERA* ** Common positions/voice and actions of all JPIs/P2Ps* ** Exchange of good practices re. operational modalities (e.g., re. call implementation)*	** Time consuming exercise* ** Common positions are mostly very general*		* FACCE-JPI and Biodiversa ERA-NET joint call on "Promoting synergies between food supply, biodiversity and ecosystem services" (10 selected projects for a total of 10.3M euros) * JPND and the Article-185 initiative -Ambient Assisted Living Joint Programme (AAL JP), plan to develop joint actions in the area of assisted living technologies for neurodegenerative disease * PLATFORM project that promotes mutual learning across bio-economy ERA-NETs

7	**Research strategy**	**Cooperation between a P2P and a PPP (NEW)**	P2P cooperation with other EU initiatives can take the form of formalised partnerships, exchange of information on ongoing work and results and future needs and activities, facilitation of uptake of research results e.g. by partners within PPPs, etc.	** Joint strategic decisions and strategic exchange (e.g. on internationalisation, widening activities, valorisation of results, self-sustainability of JPIs etc.)* ** Exchange of information on ongoing and forthcoming work* ** Conduct of joint actions* ** Joint exploitation of scientific results for market-based innovations* ** Dedicated time resources for exchange*	** Structuring the ERA and supporting the Innovation Union* ** Increased visibility and impact of P2Ps (uptake of research results)* ** Common positions/voice and actions of all JPIs/P2Ps*	** Time consuming exercise* ** Common positions are mostly very general*		
8	**Research strategy**	**Cooperation with non-EU/non-Associate countries (NEW)**	This type of cooperation can take several forms, e.g.: - a third country becomes a member of a P2P (strategic) - a third country participates in a specific P2P joint R&I action (operational)	** Exchange of information on ongoing and forthcoming work* ** Development of common research priorities* ** Conduct of joint actions;* ** Joint exploitation of scientific results for market-based innovations* ** Build on existing bilateral relations of European and non-European countries* ** Have dedicated financial and human resources available to develop international cooperation* ** Agreement of P2P Members on what and to what extent international cooperation should be developed*	** Alignment at global level* ** Enhanced visibility of P2Ps on the international scene* ** Increased potential of P2Ps for impact on global research and political agendas* ** Exchange/ communication of possible solutions with non-European countries*	** Reaching agreement within the P2P on the priorities of internationalisation might not be easy* ** International cooperation is time consuming* ** International cooperation of P2Ps need strong cooperation with other European initiatives and the European Commission in some aspects*		* JPI Water-JPI FACCE WaterWorks 2015 call with third countries * JPI Urban Europe Call with the Belmont Forum * JPI Climate Call with the Belmont Forum * JPI FACCE Call with the Belmont Forum * JPI FACCE Call with 3 GRA countries
9	**Research funding**	**Set-up of a network of national (and EU) research funding organisations (NEW)**	A network of research funding organisations allows to align priorities in national research and innovation programmes, funding strategies and funding instruments and national funding procedures in a long-term perspective	** Implement an efficient governance structure that enhances exchange of information on ongoing and forthcoming work amongst funding partners and that supports strong knowledge exchange between policy makers, funding organisation managers and scientific representatives in the network* ** Implement networking activities (meetings in different member countries, delegation of responsibilities, manageable size of working groups and meetings) for trust-building*	** Trust-building amongst EU funding organisations* ** Capacity building of EU funding organisations and alignment at operational level regarding national funding and management procedures* ** Alignment of research funding programmes*	** Challenge to carefully manage the network membership in order to maintain the relevance of its strategic focus for its members (i.e. common research priorities) and keep the network's operation efficient* ** Challenge to maintain networking activities in time in order to keep partners engaged in the long-term*	Case study on the network for Humanities in the European Research Area (HERA)	* Nordic Research Councils for the Humanities and Social Sciences * Global Research Council

				** Facilitate mutual learning and exchange of best practices regarding funding and management procedures, e.g. in view of setting up a series of joint calls/programme* ** Develop joint calls/fund joint projects, inc. via the establishment of a joint mechanism for joint call management, joint call secretariat, joint peer-review process, similar funding contracts, joint monitoring mechanisms for projects, joint reporting requirements* ** Carry out joint mapping of national research funding programmes and develop common research priorities in view of launching a joint call or multi-annual joint programme* ** Develop a funding model that is adapted both to networking/mutual learning and joint research activities: it should take into account available funding, the type of funding (in-kind and/or in-cash funding), the organisations eligible for funding and the amount of available funding resources at national level.* ** Enhance the financial commitment of participating countries: this can for instance be achieved by adopting a "fair share" model, which estimates "reasonable" national contributions according to national budgets and constraints, and empowers countries regarding their financial commitments.*		** Difficulty to effectively raise awareness on inter-operability issues regarding national eligibility criteria in order to possibly overcome them*		
10	**Research funding**	**Coordination or synchronisation of national calls for research proposals**	Coordination or synchronisation of national calls financed by national RFOs and evaluated nationally, yet according to some identical criteria. In the case of a JPI, such calls are expected to be in line with the JPI Strategic Research Agenda core themes	** National calls are issued in a pre-determined scientific field* ** National proposals are peer-reviewed internationally on the basis of common deadlines and criteria* ** National grants are allocated to selected national projects* ** National conduct of research*	** No problem of inter-operability of national rules* ** Scientific excellence* ** Increased efficiency national research funding*	*'Light' alignment*		FACCE-JPI Thematic Annual Programming Network on Soil Research (TAP Soil) Forthcoming Water JPI TAP

11	Research funding	**Organisation of a joint transnational call for research proposals** **(with or without EC co-funding)**	Implementation of a joint call for proposals open to all eligible applicants from a partner country that leads to the funding of transnational research and/or innovation projects by call partners (national research and innovation funding organisations). **Fully financed by Member-States or Co-funded by the EC**. The organisation of transnational joint calls ask for an alignment of national and transnational activities (what do we do in common on transnational level and what do we do complementary at national level).	** Rely if possible on the existence of a formal network of research funding organisations (see action N°9)* ** Decide on a common objective and principles of cooperation via an MoU* ** Develop a model for call management and call implementation (e.g. lead agency principle, rotating call secretariat, etc.)* ** Clearly define and communicate the scope of the call and provide clear guidelines to applicants regarding scientific expectations* ** Agree on common funding rules depending on the profile of funders (virtual, real or mixed mode) and clearly discuss them amongst involved partners and participants in order to identify legal barriers at national level and be able to tackle them in advance to the call process* ** Transnational project consortia are selected after common peer review process and eligibility check* ** Common agreement on joint project monitoring and joint project reporting requirements* ** National funding streams are aligned to the joint calls* ** Implement a centralised management (and contracting when possible) structure. Rotation of call/programme management structures amongst partners can be set up in order to avoid centralization of programme knowledge. Also, in order to ensure consistency and allow for transparency for programme participants, IT management systems and clear guidance for reviewers of proposals and applicants need to be in place.* ** Facilitate an integrated coordination of projects funded by the ERA-NET call*	** Helps coordinate national research funding and programmes in a selected (narrow) area* ** Co-funding with the EC has a leverage effect on member state financing* ** No need to set up a separate legal entity* ** Allows research cooperation with non-EU or Associated countries (e.g., US)* ** Helps coordinate national research funding and programmes in a selected societal challenge* ** Increased research capacity of European researchers* ** Enlarges the professional networks of researchers* ** Efficiency gains and operational alignment thanks to common management and coordination procedures and delegation of responsibility* ** ERA-NET COFUND : allows to finance other joint activities (e.g., training, sharing of facilities, other joint calls without EU co-funding)* ** ERA-NET COFUND : Joint knowledge transfer and dissemination of results, mandate for open access of EC cofunded results*	** Requires compliance with and synchronisation of a variety of national rules and procedures (**inter-operability issue**)* ** Some funding agencies face limitations in funding transnational research (quota)* ** Challenge for applicants to respect and response to the different national requirements of transnational joint calls (low attractiveness of calls)* ** Low awareness of the network's management rules can lead to confusion and difficulties regarding project implementation at institutional level* ** Challenge to secure the human and financial resources for a longer time period and agreeing upon a longer term strategy in terms of launching calls* ** Variations in the financial support received by selected applicants originating from countries outside the Eurozone* ** ERA-NET COFUND: Additional administrative burden when using EC Cofunds for joint calls*	Case study on the use of a real common pot for the ERA-NET Plus Infravation Case study ERA-NET Co-fund on Climate Services by JPI Climate (combines joint calls with the mobilisation of institutional funding, which is quite unique) Case study Alignment of national AAL Programmes – Practical Implementation from the Austrian Perspective modalities	* Water JPI: WaterWorks Co-fund * JPND: 'JPCOFUND' * FACCE JPI: FACCE SURPLUS (Sustainable and resilient agriculture for food and non-food systems) * HERA (Funding is provided from HERA partners - partnership of 24 national research councils- and the EC is providing top-up funding via a COFUND grant to the HERA Joint Research Programme): see case study of action N°9 * JPI Urban Europe: ERA-NET COFUND Smart Cities and Communities, ERA-NET COFUND Smart Urban Futures, ERA-NET COFUND Sustainable Urbanisation Global Initiative, 2 joint calls without EC COFUND

				** Ensure stakeholder engagement: when relevant, involve non-academic stakeholders in project and knowledge exchange activities. Specific guidance is needed for project applicants and project reviewers.* ** Effectively disseminate project outcomes and, particularly if the programme is focused on market-ready research, timely anticipate the innovative solutions resulting from projects by preparing organisations and structures that can implement and upscale them afterwards.*				
12	**Research funding**	**Establishment of an integrated joint research programme** **(with or without EC co-funding)**	Development of a research programme common to several European research performing institutions. (Can be fully financed by participating Member States or also benefit from EC financial support via the European Joint Programme COFUND instrument/ EJP)	*EJP:* ** min. 5 participating countries* ** 5 year contract between national research funding organisations (programme owners and managers) and the EC, with annual reporting periods* ** Agree on an annual work plan* ** Possibility of multiple calls with cascading grants* *See EC presentation on EJP (http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/euratom/h2020-wp1415-ejp_en.pdf)*	** Promotes long-term and comprehensive transnational collaboration* **Alleviates the administrative burden related to the management of individual ERA-NETS* ** Generates critical mass in terms of overall budget, maturity and degree of integration* ** EJP: Clear link with H2020* ** Can lay the ground for the establishment of a permanent transnational legal structure and/or an Article 185 initiative*	** Need to clarify how this programme could benefit and be used by JPIs*	Case study on ERA-Planet	* EJP: EURATOM (only case relying on a EJP for now; pilot projects include: One Health/Zoonosis, and Biomarkers (30-50 million EUR each for 5 years)
13	**Research funding**	**Establishment of a strategic, long-term integrated joint research programme** **(EU Article 185 Initiative)**	Enables the EC to participate in research programmes undertaken jointly by several Member States, including participation in the structures created for the execution of these programmes. Lasts approx. 10 years. Applicable to research programmes of relevance to EU policy objectives (incl. topics not linked to H2020); with a critical mass of participants involved	** Build on a pre-existing network among key research partners (e.g. previous ERA-NETs to test the launch of large joint calls, CSA to prepare the set-up of an Article 185)* ** Develop a common strategic research agenda (see N°3)* ** Establish a strong, centralised, clearly defined and legally binding governance model through clear voting procedures and allocation of responsibilities, and a good balance between EC and national contributions (i.e. permanent staff and national representatives)* ** Develop the willingness to pool (significant) amounts of national (financial and/or institutional)*	** Most suited to respond to large-scale, common European challenges that require the mobilisation of a specific scientific community* ** Long-term duration and substantial budget for high sustainability* ** Political tool that allows for "deep" alignment at strategic, financial and operational levels: transnational integration of national research programmes* ** Achieves critical mass, research excellence and increased research capacity in view of addressing grand societal challenges* ** Mobilisation of significant national and EU funding resources: strongly*	** Requires approval by the European Parliament and the European Council ('co-decision')* ** Challenge to build enough trust and commitment from countries in order to set-up an Article 185 initiative that relies on a long-term vision* ** Complex and time-consuming grant applications* ** Challenge to bridge different institutional structures and*	Case study on the Article 185 European Metrology Research Programme (EMRP)	* EMRP's successor, European Metrology Programme for Innovation and Research (EMPIR) * Eurostars: Joint Programme that provides financial support to market-oriented research projects initiated and driven by R&D performing SMEs. * Ambient Assisted Living Joint Programme (AAL JP) * BONUS: joint Baltic Sea research and development programme for 2010-2017 (used to be an ERA-NET)

				resources over time: A virtual common pot for funding joint research is required as countries cannot risk losing such significant committed resources if the proposal selection does not lead to their participation in joint research projects. However, additional funding reserves can be secured at national levels to avoid the issue of funding gaps. Also, national contributions towards a real common pot are also of great added value in being independent from national funding rules, for instance, to cover for coordination and management costs. ** Establish a central programme management structure that can support grant application and reporting activities, and set up a centralised and independent evaluation system* ** Develop dedicated dissemination and uptake instruments for effective impact on end-users by (i) involving them in joint research projects and (ii) involving project participants in end-user communities' activities* ** Develop dedicated instruments for capacity building, focusing in particular on (i) facilitating knowledge transfer and access to external funds and infrastructure for countries with lower national financial and human resources; and (ii) encouraging effective researchers' mobility* ** Art 185 initiatives sometimes build on previous ERA-NETs (or JPIs)* ** In-kind contributions can include shared research infrastructure (see below)* ** Involves the set-up of a Dedicated Implementation Structure*	*supporting a transnational approach in high priority research areas is considered to be in the interest both of individual Member-States and of the EU as a whole.* ** High visibility on the international scene as a European reference*	*procedures (size of participating institutions; years of operation; links to Ministries, etc.)* ** Challenge to effectively motivate researchers to adopt a transdisciplinary, innovative approach when addressing complex research issues* ** Difficulty in effectively involving less research-intensive countries due to a necessary high financial engagement*		

14	Research implementation	**Establishment of a network or alliance of research performing (and funding) organisations**	Cooperation amongst research performing organisations (including Centres of Excellence and universities) that can vary in intensity: (i) joint dissemination activities of research results for a specific topic (ii) **coordinate and align (a) in-kind and project-based funding** in order to spur more effective utilisation of existing resources when funding is directly provided by RPOs or (b) in-cash funding when funding is provided by related RFOs (e.g. in the case of an RPO that doesn't have a funding capacity for transnational projects) (iii) joint strategic activities and influence on the national as well as European Research and Innovation Agendas as well as Policies	** Develop a common strategic vision and agenda among network members that is aligned with (1) PROs' strategy, (2) national strategies and (3) the European Strategy (e.g. at JPI and EC level) in order to avoid duplication and ensure high added value of the alliance's strategy both at national and international levels* ** Ensure strong commitment of RPOs both at the level of researchers and Scientific Directorates for strategic alignment through appropriate arguments: added value of joining forces for something RPOs were planning to do anyways at national level (pool resources and increase research capacity), research excellence, complementarity. Raise awareness of RPOs about the need for change in order to work at transnational level* ** Establish a streamlined governance model on the basis of consensus that gives the alliance flexibility and efficiency in strategic and operational decision-making, and that takes into account the diversity of RPOs (re. mandate, incentive system, type of research: basic/applied/innovation-oriented)* ** Set up a flexible funding model for joint research (e.g. virtual common pot for targeted institutional cooperation, funding from RFOs for more flexibility in in-cash funding as members of the alliance or through cooperation with a network of RFOs). Set up competitive funding with robust peer-review procedures* ** Secure funding (in-cash and/or in-kind) for the operation of the alliance (coordination and management) through a specific virtual or physical structure: e.g. costs of peer review shared among participating partners, costs for the administration of awards shared or subsumed by respective funding agency* ** Carefully manage the alliance's membership: openness across Europe*	** Allows for strategic alignment across RPOs (and related RFOs if involved in the alliance), can facilitate smart specialisation hence triggering cost-efficiency* ** Builds critical mass and enhances capacity building of researchers and cross-fertilisation of ideas* ** Allows for operational alignment amongst RPOs* ** Complements financial cooperation (i.e. that does not target specific RPOs, e.g. ERA-NETs with only in-kind funding); can be very relevant for countries with limited financial resources for transnational research activities* ** Embeddedness in and impact on European Policies as a reference network of research performers* ** Increases the international visibility of participating RPOs through the establishment of strategic partnerships as European reference network with related European initiatives and beyond Europe* ** If the alliance focuses on recognised RPOs: allows to build on existing cutting-edge infrastructure, high quality expertise and significant national funding resources, and to facilitate the cooperation amongst most influential research centres for high impact of research results*	** Diverging financial inputs by various national institutions: some are much more committed than others or are limited by their own resources that differ between organisations and countries* ** Institutional alignment is easier to motivate and perform in RPOs with strong national basic funding* ** Challenge to bridge different institutional structures (size of participating institutes; years of operation; links to Ministries, etc.) and rules* ** Influence on research agendas of research performing organisations is limited to specific parts* ** Need for networking activities in order to keep members involved and achieve a common understanding among the research community* ** A strict virtual common pot only based on in-kind funding of RPOs can be restricting in the selection and funding of joint research projects* ** Challenge to outreach towards excellent research performers that are not members of the alliance and non-research performers (e.g. industry, cities, civil society)*	Case study on the Network of Centres of Excellence in Neurodegeneration (COEN) https://www.era-learn.eu/alignment/current-approaches/ERA-LEARN2020_T42_Casestudyno8_CoEN_5January2017_Final.pdf Case study on ERA-Planet COFUND 'The European network for observing our changing planet' https://www.era-learn.eu/alignment/novel-alignment-modalities/ERA-LEARN2020_T43_Casestudyno2_ERAPlanet_20160823.pdf Case study on European Energy Research Alliance (EERA) https://www.era-learn.eu/alignment/novel-alignment-modalities/ERA-LEARN2020_T43_Casestudyno1_EERA_final20160614.pdf	* JPI Urban Europe: Urban Europe Research Alliance * European Rail Network of Excellence * Association for European Life Science Universities (ICA) * OECD Collaborative Research Network on Sustainable Temperate Agriculture (OECD TEmpAg Network) * Association for European Life Science Universities (ICA)

				vs. highly selective for scientific excellence, peer-to-peer collaboration, balanced decision-making processes and manageable size. Chose a mode of selection: e.g. national ministries nominate RPOs, member RPOs identify potential RPOs to be included) ** Ensure dissemination and outreach to end-users: develop strong interactions with highly visible, more political and /or more innovation-oriented initiatives in order to ensure high impact*				
15	**Research implementation**	**Establishment of a Joint Research Centre**	A single research performing organisation that is shared amongst several countries	** Establish a legal entity* ** Define a common work plan with long-term commitment by all partners* ** Conduct joint research*	** Helps avoid duplication and promotes synergies* ** Increases the international visibility of participating institutions* ** Contributes to networking and capacity building amongst researchers and to cross-fertilisation of ideas* ** Scientific excellence and mutual learning* ** Complements financial cooperation; can be very relevant in the case of limited financial resources for transnational activities*	** long preparation phase* **financial commitment of partners is difficult to reach*		* EC Joint Research Centre's (JRC) Institute for Environment and Sustainability * Joint Institute for Innovation Policy (a joint venture of four Research and Technology Organisations from four different European countries: TNO (The Netherlands), VTT (Finland), Joanneum Research (Austria) and Tecnalia (Spain). * European Research Council
16	**Research implementation**	**Set-up of a network of individual researchers**	Network supporting transnational cooperation among individual researchers, engineers and scholars across Europe.	** Clearly delineate the scope of the network and related activities (i.e. work plan that can be adapted over time)* ** Put in place a balanced governance structure that takes account of the desire for "ownership" of scientists and the need for flexibility* ** Secure long-term funding for networking and coordination tasks* ** Develop an adapted funding mechanism for the participation of researchers in the network (e.g. partial real common pot, balanced in-kind and in-cash funding for new research activities if desired)* ** Ensure an efficient management and coordination of activities (e.g.*	** Fosters interdisciplinary and enlarges researchers' professional networks* ** Facilitates the coordination and pooling of already (nationally) funded research activities in a specific field: reduces research fragmentation and duplication and allows for greater cost-efficiency* ** Enhanced European research excellence thanks to the pooling of ideas amongst researchers and the collective generation of new knowledge: speeding up of research progress and leverage effect* ** Enhanced European research capacity thanks to capacity building activities (e.g. joint training, exchange of data and models,*	** Application of national rules can trigger:* *(i) interoperability issues (e.g. funding periods, access to funding for travelling or for carrying out research);* *(ii) time-consuming double reporting;* *(iii) lack of a centralised decision-making body (involving national selection of research groups, difficulty to coordinate the scoping of the network and to redirect national funding to other activities)* ** Difficulty to significantly enhance and coordinate data*	Case study on FACCE JPI MACSUR Knowledge Hub (click here)	* JPI HDHL: Knowledge Hub on the Determinants of Diet and Physical Activities Choice (DEDIPAC) * JPI HDHL Knowledge Hub on Malnutrition in the Elderly

				appoint a coordinator) ** Carefully manage the number of researchers in order to keep the network efficient in coordinating networking and research activities.* ** Avoid artificial structural barriers (e.g. double reporting, national administrative rules)* ** Elaborate a strategy to increase visibility and dissemination (e.g. co-publish joint research results, rely on a support team or a more influential tool such as a JPI to explain benefits and results of such a network to stakeholders and policy-makers)* ** Design a strategy for capacity building and data sharing(e.g. exchange on existing research results and methods, share data and models via workshops, conduct joint training, support young researchers): in particular, trust-building is required for data sharing.*	*harmonisation of methodologies): especially beneficial for less research-intensive countries* ** Stronger visibility and influence on European and international policy-making*	*sharing, e.g. due to legal barriers on intellectual property rules and to the difficulty of openly sharing data of high value* ** Challenge to sustain the network over a long period of time (e.g. 10 years), difficulty regarding limited and diverging national funding contributions*		
17	**Research evaluation and reporting**	**Development of a common framework for monitoring, evaluation and impact assessment for the whole P2P (NEW)**	Reach agreement on the objectives and expected impact of P2Ps among all participating countries and develop a framework for (P2P) programme monitoring, evaluation and impact assessment and ensure implementation of monitoring, evaluation and impact assessment	** Design a common framework for monitoring, evaluation and impact assessment for each P2P with smart performance indicators* ** Design a participating process to develop the framework to ensure commitment and implementation of the framework* ** Take into account national expectations towards the framework* ** Ensure that an implementation plan to conduct monitoring, evaluation and impact assessment is developed* ** Ensure financial as well as human resources for the development of the framework as well as its implementation (it is long-term and expensive)*	** Helps develop a common understanding of the objectives and impacts* ** Supports the design, selection and adoption of specific joint actions with P2Ps to reach the objective (strategic steering of P2Ps)* ** Supports national delegates to argument and justify their participation in P2Ps*	** Regular monitoring and evaluation is expensive* ** Challenge to agree within P2Ps on the priority for monitoring and evaluation (in comparison to other joint actions)* ** Impact of P2Ps is difficult to measure as they should contribute to tackle societal challenges, no standard method can be applied, but evaluation research is needed on this*	Guide for Impact Assessment https://www.era-learn.eu/monitoring-and-assessment/Monitoring-and-impact-assessment-of-networks/ERA-LEARN2020D3.4aGuiderevision_DEC2016_final.pdf Case Study on FACCE JPI Monitoring and Evaluation Framework Case Study on JPND Monitoring and Evaluation Framework Case Study on JPI More Years Better Lives	* M-ERA.NET * Concept for Monitoring and Evaluation of JPI Urban Europe (expected in 2017) * Methodology to undertake innovation impact assessment of AAL Programme projects * JPI Oceans: Recommendations for selecting, evaluating and monitoring joint actions

18	**Research evaluation and reporting**	**Joint project monitoring (NEW)**	Develop a common framework for joint project monitoring and implement it: joint development of project performance indicators, joint reporting requirements for projects, joint agreement on ex-post follow up of projects to analyse impact of projects)	** Design a common framework for project monitoring, evaluation and impact assessment with smart performance indicators* ** Design a participating process to develop the framework to ensure commitment and implementation of the framework* ** Take into account national expectations and national requirements for project monitoring* ** Ensure that an implementation plan to conduct project monitoring, evaluation and impact assessment is developed* ** Agree on, and develop a common reporting template or align around existing reporting method* ** Derive specific information on project monitoring that can be published in the call text to make requirements transparent to applicants* ** Derive specific information on project monitoring that can be put into the national funding contracts to ensure that information for project monitoring and evaluation will be available* ** Set up an IT tool with high safety standards to share information on project progress among all research funding agencies (project applications, budget transfers, reports of projects, deliverables, changes in the projects, monitoring data, etc.)*	** Reach agreement on the objectives and expected results of the projects funded by all research funding organisations* ** Exchange, coordinate and align on performance indicators for projects* ** Mutual learning on national views on monitoring and their reporting requirements* ** Agreement on common reporting requirements based on best practice of the countries* ** Make project results and impact visible to external audience*	** Harmonising national reporting requirement takes time and potentially needs a stepwise process* ** Coordination of project monitoring needs flexibility of research funding organisations to change their rules* ** The process needs the willingness of coordinate and harmonise the project monitoring for the benefit of the beneficiary of the project*		Nordic Research Council / Nordforsk
19	**Research evaluation and reporting**	**Coordination across JPIs/P2Ps to develop joint performance indicators (NEW)**	Coordination among JPIs (or other P2Ps) to agree on common objectives and expected impacts with respective joint performance indicators	** Reach common agreement of all JPIs on common objectives and expected impacts* ** Reach common agreement on performance indicators valid for all JPIs* ** Make performance of JPIs (using the commonly agreed indicators) visible*	** Cost-efficient process* ** High visibility of JPI performance; stronger impact on the ERA* ** Formal agreement of all JPIs to work in a specific direction (by agreement to common objectives, expected impact and indicators)*	** Risk that common indicators does not mirror the actual progress and impact of JPIs, but only indicate pure numbers*		JPI Chairs Working Group on common impact indicators for all JPIs

				** Nominate a coordinator of this process that drives the process forward*				
20	**Capacity building of researchers, policy makers, practitioners**	**Joint training**	Joint training for researchers, policy makers and practitioners to build communities of practice: e.g. training on interdisciplinary (e.g., FACCE), training on transdisciplinary in research projects, joint training for policy makers in ministries and research funding agencies (e.g. on foresight or impact assessment), training for practitioners	** Joint training sessions, conferences and workshops* ** Develop or coordinate (academic) courses and summer schools* ** Excursions to best practice examples* ** Open national trainings for all European* ** Spend time, human and financial resources to strategic develop dedicated trainings and activities for capacity building* ** Online training formats are easily accessible*	** Sharing of state of the art practices, methods etc. reaches wider audience* ** Catch up of audience in widening countries* ** Harmonisation and standardisation of teaching material across Europe* ** Common development and agreement on new topics and activities*	** Common agreement within JPIs on the priority of training and target groups must be reached* ** Mobilisation of different target groups across Europe* ** High quality and acknowledged trainers are needed*		* EC Marie Curie Initial Training Networks (ITN) * Max Planck Postdoctoral Fellowships
21	**Capacity building of researchers, policy makers, practitioners**	**Cross-border mobility of researchers, policy makers and practitioners (NEW)**	Mobility of researchers can help promote the set up and conduct of joint R&I actions across countries (e.g., joint calls, shared use of infrastructure) Mobility of policy makers and practitioners can help to understand the policy decision making and processes with other countries (e.g. other ministries, funding agencies) to later better coordinate and align activities	** Develop transnational mobility grants* ** Develop transnational mobility opportunities*	** Enhances community- and capacity building* ** Facilitates cross-fertilisation of new research ideas* ** Facilitates coordination and standardisation of research methods* ** Can support the shared/joint use of research infrastructure abroad* ** Enhance understanding on policy making and practicing in other countries for mutual learning and alignment*	** Difficulty to align national eligibility criteria for traveling (researchers from some country no not easily have access to financial resources for travel)* ** Mobility of policy makers and practitioners is unusual (in comparison to researchers), the advantages must be understand and the necessary national preconditions must be developed*	-	JPI Urban Europe: Exchange of staff in research funding organisations (Sweden-Finland) Exchange programmes of the European Commission: National delegates can work for the European Commission for some time
22	**Research infrastructure and data**	**Transnational access to a specific national research infrastructure (NEW)**	One country puts a national research infrastructure at the disposal of researchers from one or several other countries	** Rely on a strategic/networking platform(e.g. JPI) to:* *- raise awareness on benefits amongst Member-States* *- build trust and develop a common and integrated vision on research infrastructure amongst involved countries* *- link research communities with policy/stakeholders and match common interests* ** Requires long-term planning of transnational use of infrastructure (i.e. funding, management and governance for long-term operation):*	** Easier to implement than transnational sharing schemes for national infrastructures or set-up of transnationally governed infrastructure: governance, funding and management processes are governed by one country only* ** Quick implementation* ** Cost-effective, especially for expensive infrastructure/equipment* ** Increased research capacity of countries with less financial resources: benefit from cutting-edge*	** Challenge to effectively ensure the access to infrastructure for countries with funding limitations* ** Knowledge gap from less research-intensive countries to be addressed* ** Legal barriers for data sharing and re-use, e.g. some countries cannot use data that has been elaborated at*	Case study on JPI Oceans' Shared Research Vessel	JPI Urban Europe process to reveal the potential of shared research infrastructure.

				need for coordination between EU bodies (e.g. ESFRI, GPC, ESIF, DG RTD), evaluate possibility to rely on EU resources ** Motivate researchers to use infrastructure from other countries, e.g. by making application procedures for cross-border access easier, by promoting researchers/research projects/institutions that have relied on this approach* ** Implement a compensation mechanism for the country providing the infrastructure: e.g. other countries can fund the operation of the infrastructure, provide staff/researchers/ equipment, also share their own infrastructure (see joint action n°26)* ** In the case of a joint use of infrastructure, adopt a bottom-up approach that fosters strong involvement of researchers in addressing operationalisation issues (i.e. allocation of project tasks according to available funding and expertise)* ** Requires capacity-building for less research-intensive countries to fill knowledge gap in order for them to be able to use cutting-edge infrastructure at transnational level, e.g. integrate sharing of infrastructure in a transnational mobility and training scheme* ** Ensure shared/open access to generated data and results*	*infrastructure/equipment* ** Standardisation of data collection and research methods* ** If joint use of infrastructure by researchers from several countries simultaneously:* *- distribution of costs related to the implementation of a joint research project* *- integration of national research activities* *- community- and capacity-building at European level* *- increased potential for joint impact on international policy-making*	*transnational level for national purposes* ** Risk of representing an administrative burden for researchers that wish to access a research infrastructure from another country*		

23	**Research infrastructure and data**	**Coordination of a cluster of existing national research infrastructures for research implementation (ESFRI)**	Put at mutual disposal several physical (nationally-owned) platforms to perform R&D (ESFRI, the European Strategy Forum on Research Infrastructures, promotes open access to research infrastructures. It supports a strategy-led approach to policy-making on research infrastructures in Europe and facilitates multilateral initiatives leading to the better use and development of research infrastructures, at EU and international level)	** Identification of relevant national (experimental) infrastructures* ** Coordination between the latter (e.g., sharing of common measurement standards)* ** Agreement on operative procedures, rules and fees for use*	** Cost-efficient (sharing the operating costs)* ** Integrated data monitoring systems* ** Facilitates data-sharing and standardisation* ** Facilitates the launch of joint research projects and the alignment of national projects around a common strategic priority* ** Also helps to strengthen a sense of community amongst concerned researchers*	** Secure funding at national level ("willingness to participate vs. Willingness to pay")* ** Getting the most appropriate experts involved* ** Need to agree on common rules for sharing research data, labs, etc.*		* AnaEE - Research infrastructure for experimental manipulation of terrestrial and aquatic ecosystems * JPI AMR cooperation with the Coordinated Research Infrastructures Building Enduring Life-science Services (CORBEL) / Medical Infrastructure/Users Forum (MIUF)
24	**Research infrastructure and data**	**Establishment of a new joint European research infrastructure facility**	Establishment of joint infrastructure, e.g., laboratories, databases, archives	** Rely on a strategic/networking platform(e.g. JPI) to:* *- raise awareness on benefits amongst Member-States* *- build trust and develop a common and integrated vision on research infrastructure amongst involved countries* *- link research communities with policy/stakeholders and match common interests* ** Requires long-term planning of transnational use of infrastructure (i.e. funding, management and governance for long-term operation): need for coordination between EU bodies (e.g. ESFRI, GPC, ESIF, DG RTD), evaluate possibility to rely on EU resources* ** Motivate researchers to use infrastructure from other countries, e.g. by making application procedures for cross-border access easier, by promoting*	** Easier to implement than transnational sharing schemes for national infrastructures or set-up of transnationally governed infrastructure: governance, funding and management processes are governed by one country only* ** Cost-effective, especially for expensive infrastructure/equipment* ** Increased research capacity of countries with less financial resources: benefit from cutting-edge infrastructure/equipment* ** Standardisation of data collection and research methods* ** If joint use of infrastructure by researchers from several countries simultaneously:* *- distribution of costs related to the implementation of a joint research project* *- integration of national research*	** Challenge to effectively ensure the access to infrastructure for countries with funding limitations* ** Knowledge gap from less research-intensive countries to be addressed* ** Legal barriers for data sharing and re-use, e.g. some countries cannot use data that has been elaborated at transnational level for national purposes* ** Risk of representing an administrative burden for researchers that wish to access a research infrastructure from another country*	Case study on the Centre for urban science and progress in New York (forthcoming)	* European Organisation for Nuclear Research (CERN) infrastructure * Euro-Argo - Global ocean observing infrastructure (ERIC) * Central European Research Infrastructure Consortium (CERIC-ERIC, distributed research facility) gathering 9 countries

				researchers/research projects/institutions that have relied on this approach ** Implement a compensation mechanism for the country providing the infrastructure: e.g. other countries can fund the operation of the infrastructure, provide staff/researchers/ equipment, also share their own infrastructure (see joint action n°26)* ** In the case of a joint use of infrastructure, adopt a bottom-up approach that fosters strong involvement of researchers in addressing operationalisation issues (i.e. allocation of project tasks according to available funding and expertise)* ** Requires capacity-building for less research-intensive countries to fill knowledge gap in order for them to be able to use cutting-edge infrastructure at transnational level, e.g. integrate sharing of infrastructure in a transnational mobility and training scheme* ** Ensure shared/open access to generated data and results (see N°30)*	*activities* *- community- and capacity-building at European level* *- increased potential for joint impact on international policy-making*			
25	**Research infrastructure and data**	**Open access to national scientific research outputs**	Shared use of national/institutional databases or archives allowing the interoperability and/or access to each other's databases, scientific publications and other research outputs	** Develop the political willingness to share results across P2P member countries, promote the alignment of OA policies amongst them (at government and institutional level) as well as with broader EU and global OA policies/guidelines: e.g. develop a common framework for Open Access/Data management at JPI level/across several P2Ps, or clearly state the adoption of an existing one such as H2020 OA guidelines* ** Promote the implementation and alignment of national and transnational OA infrastructures: e.g. the implementation of OpenAIRE-compliant infrastructures at institutional level and the use of the OpenAIRE platform allows for a centralised access to integrated*	** Enhances access to and visibility of research outputs, allows for transparency regarding the quality of research results* ** Supports the standardisation and interoperability of research outputs, and as such increases the potential for re-use by other researchers* ** Raises awareness of past and current research activities and related outcomes both at researchers' and research policy levels: avoids duplication and supports efficient progress of research, can provide guidance on potential future research priorities and funding strategies* ** Fosters uptake by end-users (incl.*	** Challenge to synchronise the timing as well as the level of intensity in the implementation and alignment of OA policies and infrastructures amongst countries: requires strong political support at national and EU levels* ** Low financial commitment of countries regarding OA issues at this stage* ** Difficulty in bringing together all key players involved in OA due to the global ambition for*	Case study on the Open Access Infrastructure for Research in Europe (OpenAIRE)	* JPND is considering better sharing relevant longitudinal-based cohort studies * Water JPI Working Group (Open Access and Open Data) * JPI Climate Guidelines on Open Knowledge Policies

				research information, supporting re-use by researchers as well as research policy making (e.g. by using OpenAIRE as a mapping tool of research outputs and activities). ** Identify the research outputs that are suitable for Open Access based on the expected future use of research outputs (e.g. confidential issues?)* ** Encourage researchers to use open access mechanisms: make open access an asset for their carrier, e.g. through rewards for researchers, funding for OA in top-journals, etc.* ** Secure sustainable funding (at EC and/or national levels and/or via P2Ps) for research data management and open access publishing/archiving activities* ** Address data interoperability issues in order to effectively ensure the potential for re-use by other researchers: this requires the elaboration of common protocols and standards for data collection and management. Examples: Design an aligned data management plan for all research projects; rely on data providers that have implemented aligned OA policies (e.g. that are OpenAIRE-compliant).* ** Develop a joint communication and dissemination strategy that seeks to showcase OA research outputs and promote the uptake of related research outcomes by end-users*	*for technical and social innovations and for policy-making in thematic areas): in particular, increases return on investment in public funding* ** Can rely on flexible mechanisms: opening access to research data can be a gradual process, sharing of research outputs does not necessarily require formalised OA mechanisms (at least not from the start) and can be informally achieved amongst researchers*	*OA and the diversity of stakeholder groups at transnational, national and local levels (i.e. research communities, institutions, data providers, ministries)* ** Challenge to provide adapted OA services as OA and communication needs of research communities, institutions and funders are constantly evolving: need to continuously assess and re-adjust existing OA services and develop new ones when required* ** Challenge to adapt to new technological advancements regarding OA (increased complexity of possible research outputs, developments regarding collection, storage, cross-linking, analysis of research outputs, etc.) and to communicate effectively on the diversity of potential related OA services*		

26	**Research infrastructure and data**	**Coordination, harmonisation and standardisation of scientific techniques and methodologies (MOVED)**	Coordination of scientific techniques and methodologies with different intensity: (i) coordination and calibration (ii) harmonisation/ standardisation of scientific techniques and methodologies around a common method	** Make the variety of scientific methodologies (and involved research performing organisations) known via workshops and consultative meetings* ** Agree on a strategy and implementation plan (whether, how and to what extent) to coordinate, harmonise and standardise among the research performing organisations and stakeholders* ** Ensure dedicated human and financial means for coordination of scientific methodologies by P2P* ** Install a "facilitator" or "coordinator" to drive the process forward*	** Contribution to build an ERA* ** Reduction of fragmentation of scientific methodologies* ** Ensure that the most promising scientific methodologies become standard in Europe (also in the widening countries), which increases excellence* ** Comparable research results all over Europe when due to coordinated scientific methodologies* ** Network researchers working on the same topic* ** Can ultimately encourage programme cooperation and a greater number of co-publications*	** Coordination, harmonisation and standardisation increases the risk that scientific methodologies with high potential which are less developed will not be chosen as standard* ** Especially harmonisation and standardisation is time consuming* ** Especially harmonisation and standardisation reduces researches freedom of choice*	JPND: Case Study on International Network of Centres of Excellence in Neuro-degeneration (COEN)	* FACCE JPI Knowledge Hub * EMRP/EMPIR
27	**Research dissemination and uptake**	**Joint dissemination of scientific results towards policymakers**	Organisation of joint outreach events and/or communications material to disseminate the results of a specific joint action or of several joint actions undertaken in the context of a P2P to EU and national policymakers	** Develop jointly an outreach strategy to ensure wide diffusion of scientific results both within and outside of the scientific community* ** Develop common communications material* ** Implement joint or coordinated national outreach activities*	** Greater visibility and impact* ** Cost-efficiency*		Case study on FACCE JPI MACSUR Knowledge Hub (click here)	* FACCE-JPI MACSUR Workshops with policymakers and stakeholders * ERA-NET final conference to disseminate the results * Forthcoming FACCE-JPI Policy Briefs

28	**Research dissemination and uptake**	**Joint dissemination of scientific results towards stakeholders/ end-users (NEW)**	Organisation of joint outreach events and/or communications material to disseminate the results of a specific joint action or of several joint actions undertaken in the context of a P2P to end-users	** Participatory approach to integrate and communicate with their stakeholders and users from the very beginning of joint actions* ** Clear identification of needs for knowledge, data, infrastructure and expertise of stakeholders and users* ** Permanent/regular communication and exchange and transfer of knowledge with stakeholders and users* ** Utilisation and cooperation with existing networks/initiatives/platforms of stakeholders and users to have a wide outreach (e.g. Partnerships with European Technology Platforms and Joint Technology Initiatives, City Platforms)* ** Develop dedicated instruments and activities to approach and integrate end-users (e.g. joint calls, research infrastructure, data, etc.)* ** Participation in patent developments (e.g. within joint research projects)*	** Higher intermediate and long-term impact of joint actions of the P2P* ** Spur innovation and employment* ** higher contribution to tackle societal challenges by change of behaviour of users and change of societal systems* ** Close the research-implementation gap*	** Uptake by users is sometimes nationally motivated, i.e., driven by national priorities* ** Challenge to motivate researchers that are not used to working with stakeholders to do so*		* JPND is seeking to develop public-private partnerships with industry in key priority areas for implementation. * FACCE JPI possible cooperation with the Joint Technology Initiative on Bio-based Industries * BiodivERsA's Stakeholder Engagement Handbook and evaluation within projects