



PUBLIC: For the SF participants

First JPI Climate Scoping Forum Symposium

"Science for the implementation of the Paris Agreement"

26-27 March 2018

*INRA
Paris, France*

Public report for the Scoping Forum participants

Overview

More than 60 people¹ participated in the first JPI Climate Scoping Forum Symposium², which took place at the French National Institute for Agricultural Research (INRA), in Paris, on 26-27 March 2018.

Under the thematic header *"Science for the implementation of the Paris Agreement"*, the objective of this Symposium was to guide JPI Climate in the implementation of its Strategic Research and Innovation Agenda (SRIA)³. The participants had the opportunity to engage in an active debate on the specific activities that JPI Climate will undertake over the next 2-5 years that will connect research performers and funders across Europe to promote the creation of new climate knowledge and services that are fundamental and relevant to decision-makers at all levels.

The two day meeting considered the new context for JPI Climate's work and reviewed its progress, achievements and plans. The alignment and links with related activities by the European Commission (DG Research and Innovation, DG Clima) and other JPIs (in particular JPI Oceans, FACCE-JPI, Water JPI and JPI Urban Europe), as well as with international organisations and initiatives (such as the Belmont Forum, Future Earth, GCOS, UNSDSN and OECD) and shared infrastructures and resources (such as ICOS and Copernicus), was also explored.

Day 1 (26 March)

Welcome and context setting

Patrick Monfray (French Ministry of Research and Education) welcomed the participants, highlighting the role of Joint Programming in tackling societal challenges, such as climate change, and the role of

¹ The list of participants is provided in Appendix 1.

² The programme is provided in Appendix 2.

³ <http://www.jpi-climate.eu/jpi-strategy/SRIA>



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JPI Climate in supporting the implementation of international agreements, such as the COP21 Paris Agreement⁴ and the United Nations Sustainable Development Goals (SDGs)⁵.

The role of science (and initiatives such as JPI Climate) in the implementation of the Paris Agreement was also emphasized by the other speakers in the opening session.

Frank McGovern (Environmental Protection Agency, Ireland, and JPI Climate Chair) stressed the role that science plays (and should play) in the UNFCCC⁶ process and in the implementation of the Paris Agreement. The successful implementation of this agreement has to be supported by a strong knowledge base and JPI Climate is in a position to provide that knowledge. JPI Climate's vision, mission and structure were presented, as well as some of its achievements.

Artur Runge-Metzger (European Commission, DG Clima) highlighted the important role that JPI Climate could play in providing advice (including translation of science and tailoring outputs to recognise policy-making entry points) needed to inform policy, policy review and implementation of the Paris Agreement. In this regard, the role of JPI Climate in supporting the formulation of European climate policies in the context of the global stocktake in 2024 was discussed. The role of behavioural change as a driver to achieve the goals of the Paris Agreement was also discussed.

Andrea Tilche (European Commission, DG Research and Innovation) focused on the role of climate science post-COP21 and the Paris Agreement. Science will play a crucial role in the global stocktake, the centerpiece of the ambition mechanism under the Paris Agreement. The funding strategy from the European Commission in response to this agreement was presented and discussed. This strategy aims at helping the operationalisation of the Paris Agreement, at providing new science for IPCC reports and at helping the development of solutions to accelerate the deployment of mitigation and adaptation solutions. The High-Level Panel of the Decarbonisation Pathways Initiative⁷ (established in 2016 by Commissioner Carlos Moedas), whose mandate is to provide a report on research and innovation strategies to support the deployment of feasible and cost-effective decarbonisation pathways in Europe, was also presented.

Building on JPI Climate investments - Part 1

Dagmar Bley (DLR, Germany and Vice-Chair ERA4CS) presented the flagship ERA-NET "*European Research Area for Climate Services*" (ERA4CS)⁸ and an overview of its thematic areas. This action builds upon the work developed by the former JPI Climate Working Group 2 ("*Researching Climate Service Development and Deployment*")⁹, which was crucial in building a European Climate Services (CS) community and framing the research needs in this area, and paved the way for the preparation of this ERA-NET.

⁴ https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

⁵ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁶ United Nations Framework Convention on Climate Change: <https://unfccc.int/>

⁷ <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3459>

⁸ <http://www.jpi-climate.eu/ERA4CS>

⁹ <http://www.jpi-climate.eu/jpi-strategy/research-agenda/theme2>

The thematic areas of the 26 funded projects under ERA4CS were presented and gaps were identified. These include the role of JPI Climate in the CS landscape, further building on the investments already made and additional thematic areas needed for the implementation of the Paris Agreement.

Roger Street (University of Oxford, UK and ANR, France) focused on the research and knowledge gaps, complementarities, redundancies and synergies in CS, identified in the synergy and mismatch analysis report produced under ERA4CS Task 7.4¹⁰. Some of the identified research and innovation gaps were highlighted. A panel session, chaired by Philippe Bougeault (ANR, France, and Coordinator of ERA4CS) addressed several questions and suggestions of the audience regarding climate services. The importance of co-construction of climate services with user communities was stressed. The interest and active engagement of other JPIs towards climate services will make it compulsory for JPI Climate to collaborate with these communities, and offers an attractive perspective of better engaging the Social Sciences and Humanities (SSH) research communities. The need to develop climate services towards products that work across boundaries was also noted.

Building on JPI Climate investments - Part 2

Petra Manderscheid (JPI Climate Central Secretariat, Belgium) showcased some highlights from projects funded under the 2013¹¹ and 2015¹² joint calls. These highlights were followed by a discussion on possible mechanisms that JPI Climate can use to collect the knowledge created by its projects and bring it to the relevant decision-makers. The JPI Climate action "*Strengthening INternational Cooperation on climatE change REsearch*" (SINCERE)¹³ is one of those mechanisms, but it is crucial to develop additional ones, including by building on those seen within the JPI Climate Strategic Mechanism.

New areas for JPI Climate starting in 2018

Gregor Laumann (DLR, Germany and AXIS coordinator) presented the recently launched ERA-NET "*Assessment of Cross(X)-sectoral climate Impacts and pathways for Sustainable transformation*" (AXIS)¹⁴. This action was developed aiming at addressing some of the gaps identified in the area of Vulnerability, Impact, Adaptation (VIA). Some of these include the need to develop an international frame for VIA research and to integrate it across sectors, scales and disciplines. In this regard, AXIS aims to promote cross-boundary, cross-community research with the overall goal to improve coherence, integration and robustness of climate impact research and connect it to societal needs. AXIS builds upon the work developed in ERA4CS, as both actions are part of the efforts from JPI Climate to contribute to the implementation of the European research and innovation roadmap for climate services¹⁵. An overview of the joint call for proposals¹⁶ (and its themes) launched by AXIS was also presented.

Sophie Verheyden (BELSPO, Belgium and SINCERE coordinator) presented the recently launched Coordination and Support Action (CSA) SINCERE. The mission of this action is to unite and coordinate

¹⁰ <http://www.jpi-climate.eu/media/default.aspx/emma/org/10891771/ERA4CS+WP7+4+ReportPublic.pdf>

¹¹ <http://www.jpi-climate.eu/2013projects>

¹² <http://www.jpi-climate.eu/2015projects>

¹³ <http://www.jpi-climate.eu/sincere>

¹⁴ <http://www.jpi-climate.eu/AXIS>

¹⁵ <https://ec.europa.eu/programmes/horizon2020/en/news/european-research-and-innovation-roadmap-climate-services>

¹⁶ http://www.jpi-climate.eu/gfx_content/documents/AXIS-2018-Call-Doc_01_Call_for_Proposals.pdf

European climate change research to operate in partnership with key non-European partners in support of the Paris Agreement and the SDGs. Some of the key objectives of SINCERE include expanding JPI Climate to include member countries in Eastern Europe and developing two flagship actions, focused on the design of research and innovation collaborations in Africa and Latin America, to expand and deepen knowledge to support the uptake of climate change adaptation and mitigation policies, climate services and resilience to disasters linked to climate change. In a broader sense, SINCERE aims to strengthen the delivery of the JPI Climate SRIA, building on existing collaborations, such as with other JPIs, the business sector and global financial institutions, and other key international research, policy and societal actors. The discussions focused on strategies to achieve the goals proposed under SINCERE (including the development of partnerships with other initiatives already working in this area) and the role of this action in supporting the implementation of relevant initiatives between Africa and Europe, such as the AU-EU Research and Innovation Partnership on Climate Change and Sustainable Energy¹⁷.

What is next for JPI Climate?

Margaret Desmond (University College Cork, Ireland and Action Group co-leader) presented the Action Group (AG) *"Enabling societal transformations in the face of climate change"*. This AG builds upon the solid work already developed by JPI Climate during its first phase (in particular the work of the former Working Group 3 *"Sustainable Transformations of Society in the Face of Climate Change"*¹⁸) and by other initiatives, including the conferences *"European Climate Change Adaptation"*(ECCA)¹⁹ and *"Adaptation Futures"*²⁰. Building on that initial work by JPI Climate, this AG aims to be a central knowledge hub, connecting and engaging researchers, policy-makers and practitioners, in order to align research activities and priorities with users' needs. A link with the JPI Climate SRIA is clear, in particular with the challenges 2 (*"Improving knowledge on climate-related decision-making processes and measures"*) and 3 (*"Researching sustainable societal transformation in the context of climate change"*). A potential list of activities for the next 5 years, as well as possible research topics, was also presented. The discussions concentrated on the focus of this AG (mitigation and/or adaptation) and consideration of the roles of the private sector in this societal transformation.

Sylvie Joussaume (CNRS, Allenvi, France and AG co-leader) presented the AG *"Next generation of climate science in Europe"*. This AG aims to deliver the JPI Climate SRIA, in particular challenge 1 (*"Understanding the processes and consequences of climate change"*), therefore playing a key role in the development of JPI Climate's work on science to inform and support the implementation of the Paris Agreement (in particular Article 7.7c²¹). A set of priority topics identified by AG members and national experts at the AG scoping workshop (Brussels, 1-2 February 2018) was presented. These include a possible joint call with JPI Oceans on next generation climate science in Europe for oceans and several actions for alignment of national programmes and activities (mapping and scoping

¹⁷ https://ec.europa.eu/research/iscp/pdf/policy/ccse_roadmap_2017.pdf

¹⁸ <http://www.jpi-climate.eu/jpi-strategy/research-agenda/theme3>

¹⁹ <https://www.ecca2019.eu/>

²⁰ <http://adaptationfutures2018.capetown/>

²¹ **Paris Agreement**, Article 7.7c: "... Strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making".

activities, knowledge hubs, collaboration on research infrastructures). It was particularly noted that some of the proposed actions would benefit from cross-AG collaboration.

Marc Kierans (EPA, Ireland and AG co-leader) presented the AG *"Pathways towards carbon neutrality and GHG balance"*. This AG emerged from JPI Climate work on top-down verification of data on greenhouse gas (GHG) emissions and removals, and aims at maintaining links with the VERIFY²² project. It will also aim at addressing issues that arise from its purpose²³, through synergistic links with other actions in this area, including those proposed by European Commission (DG RTD). The work developed by the AG will consider how the emissions pathways compatible with the Paris Agreement goals will interact with the goals from the other AGs, notably the ones on *"Enabling societal transformations in the face of climate change"* and on *"Next generation of climate science in Europe"*. Some of the initial activities and thematic areas to be pursued by this AG were presented. Links with other JPIs (FACCE, Urban Europe and Oceans) and relevant initiatives (Copernicus, GCOS) were also discussed.

Roundtable discussion

A panel, chaired by Antonio Navarra (CMCC, Italy) and composed of Andrea Tilche (European Commission, DG Research and Innovation), Elisabeth Worliczek (BOKU, Austria), Guido Schmidt-Traub (UN Sustainable Development Solutions Network) and Thorsten Kiefer (Future Earth), began a discussion that sought to further explore the JPI Climate activities presented in order to identify potential enhancements and links with other programmes and initiatives.

It was suggested that JPI Climate should grow towards becoming a coordination hub and discussion forum for climate science in Europe, including bringing science to support an informed and more focused discussion towards informing implementation of the Paris Agreement and European climate policy. To achieve this, JPI Climate should not only bring together the different research communities in Europe, but also establish international links with the relevant programmes and initiatives. This challenging task calls for a need to recognise its own constraints and to pursue its own pathway in the future (by not being so dependent on programming cycles from other initiatives).

It was also noted that JPI Climate is in a key position to support research for global sustainability. This can only be achieved if the Global South is taken on board. The engagement of the Global South (in particular Africa and Latin America) in JPI Climate activities is already a reality and the panel encouraged this initiative to pursue these efforts even more.

The concept of societal transformation was also discussed. This concept should be an integrating part of JPI Climate's activities, rather than a research topic in itself. In this context, this JPI should look at climate as part of a bigger picture (e.g. implementation of the SDGs) and not as an isolated topic.

The successful implementation of the Paris Agreement can only be achieved by developing national pathways, since global models do not have impacts at the national policy level. These national efforts should take a multi-stakeholder and multi-disciplinary approach with the aim to achieve national

²² <https://sc5.easme-web.eu/?p=776810>

²³ Purpose of this AG: to explore emissions pathways compatible with the Paris Agreement temperature goal and how the required balance of GHG emissions and removals can be achieved during this century.

goals and contributing towards realising the global goals. How can JPI Climate promote these problem-solving, multi-stakeholder approaches? Some relevant work has already been done by this initiative (e.g. the JPI Climate Transdisciplinary Advisory Board²⁴ and the actions ERA4CS and AXIS), but some additional approaches were discussed. These include the potential creation of new funding mechanisms in association with other funding agencies (e.g. development aid agencies) and mobility programmes for researchers (sectoral mobility).

Overall, the panel agreed that the role of science is to identify the key questions that need to be answered to support the implementation of these international agreements and to create the knowledge to address those questions. JPI Climate is in a privileged position to support the creation of this knowledge and its translation and mobilisation, as well as supporting inter- and transdisciplinary research.

Close of day 1

Frank McGovern summarised the highlights from the discussions on the first day.

In the global climate arena, JPI Climate is still in its early years, but has already established itself as a relevant platform for climate research in Europe and is now opening up to the world, with its internationalisation efforts. To achieve its mission, JPI Climate should keep developing partnerships with key actors, including the European Commission and other relevant actors from different sectors. In order to be relevant, JPI Climate should continue promoting the creation of usable knowledge that can support decision-makers in different sectors. In this context, transdisciplinarity is key for the success of JPI Climate activities.

A preview of the second day was also presented, including its focus on cooperation with other JPIs and research infrastructures, as well as the foresight exercise towards identifying medium- to long-term priorities for JPI Climate.

Day 2 (27 March)

Cooperation within Europe and internationally

Hartmut Stalb (Federal Ministry of Food and Agriculture, Germany, and FACCE-JPI Chair) presented the Joint Programming Initiative "*Agriculture, Food Security and Climate Change*" (FACCE-JPI)²⁵, focusing on the opportunities for collaboration between this JPI and JPI Climate. The 5 core themes from FACCE's Strategic Research Agenda, as well as an overview of its ongoing activities (2012-2017) were presented. Given the common goals shared between the two JPIs, a rationale for stronger collaboration between FACCE-JPI and JPI Climate was presented. In terms of opportunities for collaboration for the period 2018-2020, the topics of cross-sector impact assessments of climate change and carbon neutrality were identified as concrete possibilities. In this context, some possible

²⁴ <http://www.jpi-climate.eu/programme/governance/TAB>

²⁵ <https://www.facejpi.com/>

modalities for collaboration were also presented and discussed. During the discussion, the role of the social sciences was highlighted as being crucial to promote transformations in this area, raising the possibility of a potential collaboration between the two JPIs also in the area of societal transformation in the face of climate change.

Maurice Héral (ANR, France, and Water JPI Chair) presented the Joint Programming Initiative "*Water challenges for a changing world*" (Water JPI)²⁶, highlighting water as a cross-cutting issue among the SDGs. A series of thematic activities planned for the period 2017-2019 were presented. These include not only joint calls, but also Knowledge Hubs (the first of these was launched in 2017), Thematic Annual Programming (TAP) and exploratory workshops. Some concrete collaborations between Water JPI and other JPIs were presented, including the joint call on sustainable management of water resources in agriculture, forestry and freshwater aquaculture sectors (together with FACCE-JPI) and the future ERA-NET Cofund on exposure to pollutants (together with JPI Oceans and JPI on antimicrobial resistance). An overview of the Water JPI's interational cooperation activities was also presented and discussed. Some of the topics of common interest (between Water JPI and JPI Climate) were also identified. These include climate extremes (including extreme events and associated risks), water scarcity (in particular the evolution of severe droughts in southern Europe and Africa) and climate predictability at the regional level (including climate projections and impacts on water resources).

Maurice Héral (JPI Oceans Management Board member) presented the Joint Programming Initiative "*Healthy and productive seas and oceans*" (JPI Oceans)²⁷ The SRIA of this initiative includes two strategic areas on oceans and climate: "Climate change impact on physical and biological ocean processes" and "Effects of ocean acidification on marine ecosystems". The background and long-term activities for these strategic areas were presented and synergies with JPI Climate were identified. The potential JPI Oceans/JPI Climate call on next generation of climate science in Europe for oceans was also discussed as a concrete opportunity for collaboration between the two JPIs. Some other topics of mutual interest (sea-level rise, carbon cycle and research infrastructures - observations) were also discussed.

Jonas Bylund (Management Board member) presented the Joint Programming Initiative "*Global urban challenges, joint European solutions*" (JPI Urban Europe)²⁸. This JPI aims to support the implementation of the SDG11 ("*Make cities and human settlements inclusive, safe, resilient and sustainable*"), but is aware of the interlinkages with the other SDGs, in particular with SDG13 ("*Take urgent action to combat climate change and its impacts*"). Some of the key achievements from this JPI were presented. These include annual calls since 2012 (with a portfolio of 67 projects), implemented by more than 20 funding agencies, the Urban Europe Research Alliance (a key initiative from JPI Urban Europe that brings together research performing organisations and aims to strengthen, expand and optimise coordination activities and research planning in Europe in order to avoid fragmentation and optimise resources in the field of urban research and innovation

²⁶ <http://www.waterjpi.eu/>

²⁷ <http://www.jpi-oceans.eu/>

²⁸ <https://jpi-urbaneurope.eu/>

capabilities) and Agora, the JPI Urban Europe Stakeholder Platform. Some ideas for potential collaborative actions with JPI Climate were also presented and discussed.

The presentations were followed by a panel discussion with the speakers, chaired by Philippe Bougeault (ANR, France, and ERA4CS Coordinator). It was recalled that ERA4CS is funding a specific task on identifying opportunities for collaboration between JPIs active on the climate issues. The audience was invited to comment on priority topics and appropriate instruments for such collaboration, and to identify barriers to collaboration. Several topics of mutual interest were identified, which will be explored in the near future. ERA4CS research projects will be a good resource to initiate such a collaboration, as they address practical adaptation problems of interest to other JPIs. Regarding preferred instruments, the Knowledge Hub and the TAP were described in some detail by Maurice Héral, based on the experience of JPI Water, FACCE and Oceans. It was also noted that these instruments have a large level of flexibility and can be adapted to the needs of new communities. The main barrier identified was the lack of funding, and it was noted that one benefit of a larger collaboration was in principle to increase the leveraging of funding resources, but this could not always be achieved, as the budget of Research Funding Organisations (RFOs) is constrained by national decisions. One attractive possibility is to engage increasingly Research Performing Organisations (RPOs) via *in-kind* funding. Inter-JPI collaboration is a good way to engage RPOs that normally do not work together into common actions via innovative funding instruments. It was also noted that one specific objective of any inter-JPI collaboration should be to increase the engagement of SSH scientists and stakeholders in JPI Climate activities.

Linking with infrastructure programmes

Stephen Briggs (University of Cambridge, UK and Chair, GCOS Steering Committee) presented the programme "*Global Climate Observing System*" (GCOS)²⁹. This programme aims at providing access to climate observations, data records and information needed to address pressing climate-related concerns. GCOS users include individuals, national and international organisations, institutions and agencies. This programme specifies 54 Essential Climate Variables (ECVs) that are key for sustainable climate observations. As part of its Implementation Plan, GCOS has worked on the development of indicators of climate change and indicators for adaptation and risk. These are provided as they are seen contributing to successful adaptation and mitigation, reduced climate risks, enhanced livelihoods and food and water security, thereby supporting the implementation of various SDGs. Some of the strengths and weaknesses in GCOS were also discussed with the audience.

Vincent-Henri Peuch (ECMWF) presented the *Copernicus Climate Change (C3S)*³⁰ and *Atmosphere Monitoring Services (CAMS)*³¹. Copernicus is the European Union's operational Earth Observation and Monitoring programme. It is user-driven and provides free and unrestricted data access. The C3S provides access to past, present and future climate information, whereas CAMS provides access to past and present emissions and surface fluxes, air quality & composition, solar radiation and UV index, among other parameters. Some services, including the Copernicus Data Store (CDS) and the Data and Information Access Services (DIAS), were presented and discussed. Some potential

²⁹ <https://public.wmo.int/en/programmes/global-climate-observing-system>

³⁰ <https://climate.copernicus.eu/>

³¹ <https://atmosphere.copernicus.eu/>

collaborative actions between Copernicus and JPI Climate were discussed. These could build on existing collaborations and include C3S brokering datasets delivered through JPI Climate initiatives, the use of Copernicus services and datasets by the JPI Climate community, in particular under the scope of the AG "Next generation of climate science in Europe", and contributing to CDS and DIAS with applications and services. The possibility to use these datasets as part of the JPI Climate's internationalisation efforts (e.g. the flagship action in Africa, under SINCERE) was also discussed.

Philippe Ciais (CNRS, France) presented the pan-European research infrastructure (RI) "*Integrated Carbon Observation System*" (ICOS)³². This RI provides harmonised and high-precision scientific data on carbon cycle and greenhouse gas budget and perturbations, enabling high quality climate change research and increased usability of the research data. The role of satellites in monitoring global anthropogenic emissions was also highlighted during the presentation. ICOS also plays an important role in supporting the development of European policies, including the roadmap for a European operational monitoring system of anthropogenic CO₂ emissions. The project "*Observation-based system for monitoring and verification of greenhouse gases*" (VERIFY)³³ and its contributions to support the Paris Agreement were also presented. VERIFY aims at integrating the efforts between the research community, operational centres, national inventory compilers and international organisations for the verification of GHG fluxes. This project is expected to produce annual updates of measurement-based GHG national budgets and inventories, facilitating the progress towards the EU mitigation targets.

Anne Gobin (VITO, Belgium) and Bart Dils (BIRA-IASB, Belgium) briefly presented the *Copernicus Land Monitoring Services*³⁴ and the RI for the observation of *Aerosol, Clouds and Trace gases* (ACTRIS)³⁵.

A roundtable discussion, which included all the speakers from this session, focused on the potential links with JPI Climate and perspectives on priorities. The resources provided by these infrastructures offer several possibilities to support excellent science needed to support decision-makers and implement the Paris Agreement. Some potential collaborative actions between these infrastructures and JPI Climate were discussed, but no concrete actions were presented.

Foresight exercise

A panel, chaired by Helen Beadman (NERC, UK) and composed of Gregor Laumann (DLR, Germany), Roger Street (University of Oxford, UK and ANR, France) and Rodney Boyd (OECD, France) presented and discussed some actions to be considered by JPI Climate for the medium to long-term.

Gregor Laumann presented some of the key learnings from research projects exploring the 1.5°C pathways. These focused on independent emission verifications, overshoot and negative emissions, and political economy of climate change. These will be key areas for science-policy dialogue on the 1.5°C pathways and may be of interest to JPI Climate in the future.

³² <https://www.icos-ri.eu/>

³³ <https://sc5.easme-web.eu/?p=776810>

³⁴ <https://land.copernicus.eu/>

³⁵ <https://www.actris.eu/>

Roger Street presented the links between JPI Climate, the SDGs and the Sendai Framework for Disaster Risk Reduction³⁶. JPI Climate's vision and its potential contribution to the implementation of international agreements, including the SDGs (in particular SDG13) and the Sendai Framework (in particular priorities 1³⁷, 3³⁸ and 4³⁹) were presented and discussed. The links between climate change adaptation (CCA) and disaster risk reduction (DRR), as well as the New Urban Agenda⁴⁰, were presented as potential areas that JPI Climate may want to explore in the future. The research and innovation required to support these initiatives and the added value that JPI Climate can provide to this was also part of the discussion.

Rodney Boyd focused on the mobilisation of financial flows to meet climate objectives. The current investment levels are still insufficient to meet these objectives. The cost of the transition to low-carbon infrastructures is relatively low, but it needs a massive reallocation of capital. There is a need for a better planning of infrastructure if the climate objectives are to be met. Some of the barriers to greening infrastructure were also presented and discussed. These include not only the traditional barriers to infrastructure projects, but also specific barriers to green infrastructure. The role of the finance sector in the implementation of the Paris Agreement and the areas of analytical work in the field of financial flows by the OECD were discussed. Some relevant upcoming events, including the 2018 Forum on Green Finance and Investment⁴¹ (13-14 November 2018, OECD, Paris), were also presented.

Following these presentations, the panel and the audience discussed priority areas and the role that JPI Climate can play in these areas. Links between the ongoing work by the OECD and the work of SINCERE (in particular WP2) were identified and a potential dialogue between these two initiatives can be strengthened. The issue of framing risk and the role of JPI Climate in this area was also discussed.

Closing of Symposium

Frank McGovern thanked the ANR and ERA4CS teams and the JPI Climate Central Secretariat for the organisation of the Symposium, and INRA for making the conference room available.

He summarised the highlights from the two day meeting and informed about the next steps.

This has been a very useful and productive meeting, with several concrete suggestions stemming from the discussions. However, it is important to recognise that JPI Climate will not be able to respond to all the suggestions and therefore the challenge now is to prioritise the actions and select the ones where this initiative can add value. JPI Climate has several options in terms of flexibility of approaches, which may facilitate the implementation of the selected actions. This flexibility also applies to the JPI Climate governance structure, opening up the possibility to integrate different AGs to support the implementation of cross-cutting actions. Learning from the experiences from the

³⁶ <https://www.unisdr.org/we/coordinate/sendai-framework>

³⁷ Priority 1: *Understanding disaster risk*

³⁸ Priority 3: *Investing in disaster risk reduction for resilience*

³⁹ Priority 4: *Enhancing disaster preparedness for effective response - Build back better*

⁴⁰ <http://habitat3.org/the-new-urban-agenda/>

⁴¹ <http://www.oecd.org/cgfi/forum/>



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other JPIs is key for the successful implementation of the ongoing and future actions. Some of the instruments already used by other JPIs (such as the Knowledge Hubs) and their potential are worth exploring by JPI Climate.

A key element when delivering science to support the implementation of the Paris Agreement is to recognise that communication barriers still exist between the different communities and that JPI Climate needs to be able to tailor the message (the importance of the narratives) to the different audiences. In this regard, the role of the social sciences and humanities is crucial and is an area where JPI Climate can add value.

Finally, the JPI Climate Chair thanked all the participants that have proactively contributed to the development of priority areas for JPI Climate by filling in feedback cards that were collected by the organising team during the Symposium. The outcomes of the Symposium (including the inputs from the feedback cards) will now be analysed and will inform the development of a document with a set of recommendations on concrete implementation actions that will be discussed at the 15th JPI Climate Governing Board (GB) meeting (May 2018).

APPENDIX 1

List of participants in the first JPI Climate Scoping Forum Symposium

First name	Last name	Organisation	Country
Tuula	Aarnio	Academy of Finland	Finland
Inès	Alterio	Agence Nationale de la Recherche	France
Helen	Beadman	Natural Environment Research Council	UK
Christoph	Bertram	Potsdam Institute for Climate Impact Research (PIK)	Germany
Bruno	Blanke	CNRS-INSU	France
Dagmar	Bley	DLR	Germany
Philippe	Bougeault	ANR	France
Rodney	Boyd	OECD	France
Stephen	Briggs	GCOS	UK
Jonas	Bylund	JPI Urban Europe	Europe
Sergio	Castellari	European Environment Agency (EEA)	Denmark
Philippe	Ciais	CNRS	France
Matthew	Crowe	Environmental Protection Agency	Ireland
Margaret	Desmond	University College Cork	Ireland
Bart	Dils	BIRA-IASB	Belgium
Severino	Falcon	MINECO AEI	Spain
Alexandre	Fernandes	JPI Climate Central Secretariat	Belgium
Estrella	Fernández	AEI (MINECO)	Spain
Andrew	Ferrone	Ministry of Agriculture, Viticulture and Consumer Protection	Luxembourg
Giulia	Galluccio	CMCC	Italy
Alice	Gaustad	Norwegian Environment Agency	Norway
Anne	Gobin	VITO	Belgium
Lucy	Gregersen	UNEP DTU Partnership	Denmark
Martina	Haindl	BOKU University	Austria
Maurice	Héral	ANR	France
Winfried	Hoke	European Climate Research Alliance (ECRA)	Belgium
Sylvie	Joussaume	CNRS, Allenvi	France
Thorsten	Kiefer	Future Earth	France
Marc	Kierans	Environmental Protection Agency	Ireland
Julia	Kolar	Climate Change Centre Austria	Austria
Gaby	Langendijk	GERICS	Germany
Gregor	Laumann	DLR	Germany
Hervé	Le Treut	IPSL	France
Caroline	Lesser	FACCE-JPI	France
Marianne Sloth	Madsen	Danish Meteorological Institute (DMI)	Denmark
Maija	Malnaca	JPI Climate Central Secretariat	Belgium
Petra	Manderscheid	JPI Climate Central Secretariat	Belgium
Claire	Mays	Symlog	France
Frank	McGovern	Environmental Protection Agency	Ireland
Patrick	Monfray	French Ministry of Research and Education	France
Antonio	Navarra	CMCC	Italy
Jouni	Paavola	ESRC Centre for Climate Change Economics and Policy (CCCEP), School of Earth and Environment, University of Leeds	UK
Adriaan	Perrels	Finnish Meteorological Institute	Finland
Vincent-Henri	Peuch	ECMWF	France
Artur	Runge-Metzger	DG Clima	Belgium
Denis	Salles	GICC-IRSTEA	France
Guido	Schmidt-Traub	UN Sustainable Development Solutions Network (SDSN)	France
Len	Shaffrey	National Centre for Atmospheric Science, University of Reading	UK
Anitha	Sharma	IFD	Denmark
Kaela	Slavik	Future Earth	France

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Claire	Spooner	ESRC	UK
Hartmut	Stalb	FACCE-JPI	Germany
Vera	Stercken	Federal Ministry for Education and Research Referat	Germany
Roger	Street	University of Oxford	UK
Jostein	Sundet	Nordforsk	Norway
Rob	Swart	Wageningen Environmental Research	Netherlands
Tina	Swierczynski	European Climate Research Alliance	Belgium
Mao	Takeuchi	Belmont Forum	France
Marta	Terrado	BSC	Spain
Andrea	Tilche	DG RTD	EC
Anna Maria	Trofaier	Cryosphere Scientist at the ESA Climate Office	UK
Marcus	van Leeuwen	NWO	Netherlands
Martine	Vanderstraeten	BELSPO	Belgium
Sophie	Verheyden	BELSPO	Belgium
Jennifer	West	CICERO	Norway
Elisabeth	Worliczek	BOKU University	Austria
Petra	Zagar	Ministry of Education, Science and Sport	Slovenia



PUBLIC: For the SF participants

APPENDIX 2

JPI Climate Scoping Forum Symposium Programme

1st JPI Climate Scoping Forum Symposium

“Science for the implementation of the Paris Agreement”

26 March (start 10:30 am) and 27 March 2018 (end 4 pm, followed by closed session)
INRA - 147, rue de l'Université - 75338 Paris

Programme

Monday, 26 th March
09:30 – 10:30 Registration
10:30 - 11:40 <i>Welcome by the Host:</i> <p style="text-align: center;"><u>Patrick Monfray</u>, French Ministry of Research and Education</p> <i>Framing and Context setting</i> <ul style="list-style-type: none">– JPI Climate Chair’s opening statement by <u>Frank McGovern</u> (EPA, Ireland)– Science for the implementation of the Paris Agreement - horizon 2020-2023 by <u>Artur Runge-Metzger</u> (DG Clima)– EU Framework Programme developments and opportunities by <u>Andrea Tilche</u> (DG RTD)– International activities relevant for JPI Climate by <u>Kevin Noone</u>, Chair of Transdisciplinary Advisory Board (JPI Climate TAB)
11:40-12:00 Coffee

12:00-12:45 ***Building on JPI Climate Investments – Part 1 Chair: Philippe Bougeault (ANR, France)***

- Flagship ERA-NET for Climate Services (ERA4CS) and Overview of thematic areas by Dagmar Bley (DLR, Germany, Vice-Chair of ERA4CS)
- Consideration of the current scope, timelines, links and gaps by Roger Street (University of Oxford / ANR)

Discussion: Seeking feedback and insights from participants

12:45 - 13:15 ***Building on JPI Climate investments – Part 2 Chair: Elisabeth Worliczek (BOKU, Austria)***

- Highlights on the status of running projects on (1) Climate predictability, (2) Arctic and Boreal Systems (3) Societal transformation: Outcomes and links to future activities in JPI Climate by Petra Manderscheid (JPI Climate Central Secretariat)

Discussion: Seeking feedback and insights from participants

13:15 – 14:15 Lunch at the venue

14:15 – 14:45 ***New Areas for JPI Climate starting in 2018 Chair: Matthew Crowe (EPA, Ireland)***

- Enhancing integration of impacts analysis and sustainability- AXIS by Gregor Laumann (DLR, Germany - AXIS coordinator)
- Broadening JPI Climate engagement – within Europe and internationally: SINCERE by Sophie Verheyden (BELSPO, Belgium, SINCERE coordinator)

Feedback session

14:45-16:00: **What is next for JPI Climate? Chair: Matthew Crowe**

- Enabling Societal Transformation in the face of climate change by Margaret Desmond (co-leader of JPI Climate Action Group)
- Next Generation Climate Science by Sylvie Joussaume (co-leader of JPI Climate Action Group)
- Pathways towards Carbon Neutrality and GHG Balance by Marc Kierans (co-leader of JPI Climate Action Group)

Feedback session

16:00 – 16:30 Coffee

16:30 – 17:45 **Discussion/Roundtable Chair: Antonio Navarra (CMCC, Italy)**

- Looking across the JPI activities discussed following lunch to identify potential enhancements and links with other programmes with:

Guido Schmidt Traub (SD network), Marialuisa Tamborra (European Commission), Asun St-Clair (DNVGL) and Thorsten Kiefer (Future Earth)

17:45 – 18:00 **Looking forward to Day 2 and Close of Day 1 by Frank McGovern**

From 18:30 Reception at the venue

DAY 2	
09:00 – 09:15	Opening Plenary by Frank McGovern (JPI Climate Chair) and bridging outcomes of Day 1 to Day 2
09:15 – 10:15	Cooperation within Europe and internationally Chair: Philippe Bougeault (ANR, France) <ul style="list-style-type: none">– FACCE by Hartmut Stalb (Chair of JPI FACCE)– Water by Maurice Héral (Chair of JPI WATER; Vice Chair of FACCE and Member of the GB OCEANS)– Oceans by Maurice Héral– Urban Europe by Jonas Bylund (Management Board, JPI UE)
10:15 – 11:00	Discussion Panel on links and perspectives on priorities
11:00 – 11:30 Coffee	
11:30 – 12:30	Linking with infrastructure programmes Chair: Martine Vanderstraeten (BELSPO, Belgium) <ul style="list-style-type: none">– Global Climate Observation System an overview by Stephen Briggs (Chair of GCOS Steering Committee)– Copernicus Climate Change and Atmosphere Monitoring Service by Vincent-Henri Peuch (ECMWF, UK)– ICOS/VERIFY by Phillipe Ciais (CNRS, France)
12:30 – 13:15	Roundtable discussion on links and perspectives on priorities

13:15 – 14:15 Lunch	
14:15 – 15:15	<p>Foresight exercise: Chair: Helen Beadman (NERC, UK)</p> <p><i>Aim: to consider in the context and scope for the medium to longer term</i></p> <ul style="list-style-type: none">- Exploring of 1.5°C pathways - key learning by Gregor Laumann (JPI Climate GB member)- Links to the SDGs and the Sendai Framework by Roger Street (Oxford University)- Knowledge Exchange on Mobilisation of Financial flows by Rodney Boyd (OECD)
15:15 – 16:00	<p>Panel Discussion Chair: Helen Beadman</p> <p>Links and the unique role for JPI Climate and thoughts on relative priority</p>
16:00 – 16:30	<p>Closing of Symposium Final Symposium round-up and views on next steps by Frank McGovern (JPI Climate Chair)</p>
16:30 – 17:30	<p>Closed Session for JPI Climate GB members only</p>