JPI-Climate Scoping Forum Symposium
Science for the Implementation of the Paris Agreement
Session: “Building on Investments”

European Research Area for Climate Services
ERA-Net “ERA4CS”

Overview of thematic areas

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What are Climate Services?

We consider Climate Services as the user-driven development, translation and transfer of climate knowledge to researchers and decision-makers in policy and business. This includes knowledge for understanding the climate, climate change and its impacts, as well as guidance in the use of climate knowledge.

(JPI-Climate)

provide tailored climate knowledge, protect our lives
### Why are they so important?

**History**

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
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<tr>
<td><strong>Mid-20th century</strong></td>
<td><em>Climate scientists discussing raise of greenhouse gases and air temperature</em></td>
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<td><strong>Geneva 1979</strong></td>
<td><em>1st World Climate Conference, WMO 1979</em></td>
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<td><strong>IPCC 1990</strong></td>
<td><em>1st IPCC-Assessment Report</em></td>
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<td><strong>Geneva 2009</strong></td>
<td><em>3rd World Climate Conference, Concept of GCFS</em></td>
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<td><strong>Paris 2015</strong></td>
<td><em>COP 21: UNFCCC Paris Agreement</em></td>
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<td><strong>Bonn 2017</strong></td>
<td><em>COP 23: Advancing Climate Action and 2030 Agenda, “Transition COP”</em></td>
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Climate-related risks decide about wealth and poverty, health and sickness, life and death.

As we look to the future, human welfare will increasingly be tied to the extent to which we are able to manage the risks and opportunities associated with a changing climate. (Vaughan&Dessai, 2014)
Major societal challenges

Joint Programming aims to remedy this situation

2015: A European Roadmap for Climate Services

2018?: A Global Research Area for Climate Services

National research programs cannot tackle them effectively on their own (fragmentation, duplication, ineffectiveness)

JPI Climate is a Joint Programming Initiative of 17 European countries (mainly research funding organizations) dedicated to “Connecting Climate Knowledge for Europe” with the aim to foster post-COP21 Climate Action.

Climate Service development has been at the heart from the very beginning of its operations, when the landscape was rather fragmented.

JPI Climate Strategic Research Agenda
Quality and Communication as most important topics identified.

10 most important research questions

- Quality Control
- Communication
- Market development
- Societal transformation
- User needs
- Uncertainty
- Best practices, instruments, methods
- Decision making
- Model development
- Data assimilation/access/handling

SRA

- Development and Deployment of Climate Services
  - Commercial versus non-commercial approach
  - Data Accessibility
  - Quality Control
- Communication of Climate Knowledge to end-users
  - Understanding user needs
  - Identifying climate sensitivities associated with decision-makers activities
  - Tools / methods to communicate climate information
  - Communication of uncertainties
- Improving the interface between Climate research and its application
  - Improving the interface between climate and climate impacts research
  - Improving the interface between research and Climate Service Providers
- Establishment of a European Network of Climate Services

Quality assurance of climate services
Effectiveness of climate service production and delivery
Standards for aspects of climate services
Assessment and enhancement of climate service quality
Network of climate service providers
Understanding users’ needs
Improving interface of climate research and its applications

FTA 2.2 Mapping climate service providers
FTA 2.1 Mapping user requirements
ERA-Net- European Research Area for Climate Services – ERA4CS
2016-2020:
Launch of an EC co-funded call on
“Researching and Advancing Climate Service Development”
+ Additional Activities

45 partners
(30 RFOs, 15 RPOs)
18 countries
Budget: ~ 65 Mio. €

26 projects (min. 3 countries)
Duration: 3 years

A large call for research proposals with two topics (cash and in-kind) was issued in 2016
A global assessment of the ERA4CS project results will be prepared and published by end 2020
A special communication effort is undertaken throughout the lifetime of ERA4CS
Additional activities are developed to prepare the future of Climate Services and support JPI-Climate
**Objectives**

- **Fill the gap** between general climate research (e.g. H2020) and operational Climate Services (e.g. Copernicus)
- Facilitate **dialogue between users and providers** of Climate Services to identify the needs and develop **innovative solutions**
- Promote **institutional integration** of public providers at European scale, to share expertise and minimize work duplication
- **Initiate partnerships** between JPI-Climate and other key European and international initiatives (Copernicus, KIC-Climate, JPIs, Belmont Forum, etc...)

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**Boost Climate Service Development in Europe**

Improve user adoption of and satisfaction with CS, research and advance CS development by supporting scientific research for developing better tools, methods and standards on how to produce, transfer, communicate and use reliable climate information to cope with current and future climate variability and change across national boundaries.

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**Development of a translation layer along the Climate Service Chain**

- **Climate System Science**
  - Observation & Database
  - HPC/IT Infrastructure
  - Earth System Models
  - Socio-economic Scenario models
- **Climate Information**
  - Model simulations
  - Inter-Month or ISO-P TE000
  - Year-Derived as GCM
  - Decade-Century as CMIP
- **Climate Information Translation**
  - Climate Information & Knowledge
  - Regional Downscaling as CORDEX
- **Climate Services**
  - Operational Production as Copernicus C3S
  - Climate Impacts models
  - Socio-economic impacts models
- **User Communities**
  - Governments - International, national, local
  - Public/Society
  - Business/commercial - International, national, local
- **Service demand**
  - Integration & Quality Assessment/labeling + Humanities & Social Sciences to analyze Interaction & promote dialogue

**ERA4CS-Call**

« Researching and Advancing Climate Service Development »
Part A: Advanced co-development with users
(cash/RFO + EC-Top-up)

- **A1: Development and deployment of CS**
  - Enhancing the quality and relevance of CS through better governance
  - Assessing the demand and creating new ideas for market settings

- **A2: Integration and application of Climate Science for decision making**
  - Integrating climate predictions and/or projections with impact, vulnerability and adaptation research (integrated assessment and application to decisions making)
  - Facilitating an/or accelerating decision-making

- **A3: Co-development (understanding user needs, co-development of methods, tools...)**
  - Better understanding of user needs and behaviour
  - Co-development of advanced tools, methods and instruments

**Call topics**

- **Part B: Institutional integration**
  (in-kind/ RPO + EC Top-up)

- Development of new methods and tools
- Impacts studies and models
- Localization of climate information and evaluation of uncertainties

**Projects**

18 projects

8 projects
Projects Topic A (cash)

- **AQUACLEW**: Advancing **QUALity** of CLimate services for European Water
- **CIREG**: Climate information for integrated **renewable electricity generation**
- **CitiSense**: Citizen Sensing – **Urban Climate Resilience** through Participatory Risk Management Systems
- **CLIM2POWER**: Translating climate data into **power plants operational guidance**
- **CLIMALERT**: Climate Alert Smart System for Sustainable Water and Agriculture
- **ClimApp**: Translating climate service into **personalized adaptation strategies** to cope with **thermal climate stress**
- **ClimINVEST**: Tailored Climate Information for **Investment Decisions**
- **CLISWELN**: Climate Services for the Water-Energy-Land Nexus
- **Co-Cli-Serv**: Co-development of place-based climate services for action
- **CO-MICC**: Supporting **risk assessment and adaptation** at multiple spatial scales: Co-development of methods to utilize uncertain multi-model based information on **freshwater-related hazards** of climate change
- **CoCliME**: Co-development of CLimate services for adaptation to changing **Marine Ecosystems**
- **EVOKED**: Enhancing the value of climate data – translating risk and uncertainty utilizing a **Living Labs** approach
- **INNOVA**: Innovation in Climate Services Provision
- **INSeaPTION**: INtegrating SEA-level Projections in climate services for **coastal adapTaTION**
- **ISIpedia**: The open **inter-sectoral impacts** encyclopedia
- **SALIENSEAS**: Enhancing the Saliency of climate services for marine mobility Sectors in European Arctic Seas
- **Senses**: Climate Change **ScENario SErviceS**: Mapping the future
- **WATExR**: Integration of climate seasonal prediction and ecosystem impact modeling for an efficient **adaptation of water resources management** to increasing climate extreme events
Projects - Topic B (in-kind)

- **DustClim**: Dust Storms Assessment for the development of user-oriented Climate Services in Northern Africa, Middle East and Europe
- **ECLISEA**: European advances on CLImate services for coasts and SEAs
- **EUPHEME**: EUropean Prototype demonstrator for the Harmonisation and Evaluation of Methodologies for attribution of extreme weather Events
- **INDECIS**: Integrated approach for the development across Europe of user oriented climate indicators for GFCS high-priority sectors: agriculture, disaster risk reduction, energy, health, water and tourism
- **MEDSCOPE**: MEDiterranean Services Chain based On climate PrEdictions
- **SERV_FORFIRE**: Integrated services and approaches for Assessing effects of climate change and extreme events for fire and post fire risk prevention
- **URCLIM**: URban CLIMate services
- **WINDSURFER**: WIND and wave Scenarios, Uncertainty and climate Risk assessments for Forestry, Energy and Reinsurance
Projects focusing on broad impacts of one type of climate anomaly:

INSEAPTION, ECLISEA (sea level rise), DUSTCLIM (dust storms), EUPHEME (extreme events), MEDSCOPE (seasonal and decadal prediction in the Mediterranean), WINDSURFER (extreme winds)

Projects focusing on communication of climate change impacts and risks

COCLISERV (narratives of climate change at local scale) EVOKE (living lab), ISIPEDIA (encyclopedia of impacts), SENSES (visualisation of scenarios), INDECIS (indicators)

Different Sectors involved:

Water Management: AQUACLEW, CLISWELN, COMICC, WATEXR
Agriculture: CLIMALERT, COCLIME
Energy: CIREG, CLIM2POWER
Urban planning: CITISENSE, URCLIM
Finance: CLIMINVEST, INNOVA
Health: CLIMAPP
Transport: SALIENSEAS
Forest fire risk: SERV_FOR_FIRE

ERA4CS supports the participation of JPI-Climate to major conferences on CS:

- Adaptation future conference (2016)
- Fifth International Conference on CS (2017)
- Third European Climate Change Adaptation conference (2017)
- ClimatEurope festival (2017)
- Adaptation Future Conference (2018)

ERA4CS supports major training events:

- Training course on communication techniques (U. Reading)
- Training course on CS (Pisa, 10-14 September 2018)

Networking Event
30/11/18


**WP 7: Joint Analysis and Vision**

D7.2: **Mapping** of ERA4CS Member States’ national activities on CS

D7.3: **Mapping** of European and International activities on CS

D7.4: R&I for CS: **Synergy and mismatch analysis**

D7.5: 5-year Implementation Strategy and Plan

**WP 8: Alignment Tools**

Task 8.1: Strengthening the partnership between JPIs (ANR) – proposal by end 2018

Task 8.2: **Update SRIA** and IP for climate services, by end 2019

Task 8.3: Pilot experiment for co-alignment of national research activities (MINECO), June 2018/ end 2020. Possible approaches: Joint follow-up, Joint Capacity Building, Pooling Capacities and Smart Specialization.
Role of JPI Climate

- What is the role of JPI Climate within the heterogeneous CS landscape? Is real alignment possible (demonstrator)?

Building on investments

- Do we need more investments? In what?

Thematic Areas

- What is needed for the Implementation of the Paris Agreement?
  - Sectoral Climate Services, Regional Climate Services...? European, International Activities... - Climate Services for Africa?
  - Quality Assurance? Standards? Evaluation/Assessment?
- Have Social Sciences and Humanities / Social and Behavioral Sciences (SBS) sufficiently and adequately been involved so far? Is there a need for more research on:
  - Improving knowledge on climate-related decision-making processes and measures
  - Critical and decision-driven research in climate services for societal transformation
Thank you

We consider Climate Services as the user-driven development, translation and transfer of climate knowledge to researchers and decision-makers in policy and business. This includes knowledge for understanding the climate, climate change and its impacts, as well as guidance in the use of climate knowledge.

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