



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 change and its impacts, as well as guidance in the use of climate knowledge.

ERA4CS Joint Call on Research and Advancing Climate Services Development by:

Topic A - Advanced co-development with users

A.1 Research in support of the development and deployment of Climate Services

A.2: Integration and application of Climate Science for decision making

A.3: Research for co-development of advanced Climate Services

Topic B - Institutional integration

B.1: Development of new methods and tools

B.2: Impacts studies and models

B.3: Localisation of climate information and evaluation of uncertainties

Funded projects (A total budget of about 63 Mio EUR has been allocated for this call to support 3 year research projects)

Title	European Research Area for Climate Services
Acronym	ERA4CS
Starting date	01/01/2016
Duration	5 years
Grant reference	690462
3 year projects	Starting September 2017
ERA4CS Coordinator	Dr. Phillipe Bougeault Agence Nationale de la Recherche (ANR) – France ERA4CS Communications Petra Manderscheid – JPI Climate Central Secretariat petra.manderscheid@jpi-climate.belspo.be
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These projects are funded by JPI Climate and co-funded by the European Union.



Topic A - Advanced co-development with users

18 projects for 34 Mio EUR

AQUACLEW

Title: Advancing QUALity of CLimate services for European Water

Lead PI: Arheimer Berit, Swedish Meteorological and Hydrological Institute, Sweden

Partner PIs:

- Greiving Stefan, TU Dortmund University, Germany
- Achleitner Stefan, University of Innsbruck, Unit of Hydraulic Engineering, Austria
- Formeyer Herbert, University of Natural Resources and Life Sciences, Austria
- Refsgaard Jens Christian, Geological Survey of Denmark and Greenland, Denmark
- Polo Gómez María José, University of Cordoba, Spain
- Baquerizo, Asunción, University of Granada, Spain
- Andreassian Vazken, National Research Institute of Science and Technology for Environment and Agriculture, France

Research funding agencies: FORMAS, DLR, BMWFW, IFD, MINECO, ANR¹

Abstract:

The overall goal of AQUACLEW is to use innovative research techniques and integrated co-development with users to advance the quality, and usability of climate services that provide climate change information to water related sectors. The project will not only co-develop the climate service with users, but also co-develop the research requirements, the service interfaces and the guidance tools. Data providers and researchers will more fully understand user needs and users will be updated on the latest scientific knowledge; better understand potentials or limitations of the data, and can influence assumptions made in each step when producing the service output. AQUACLEW will develop regional, national and pan-European climate services together with some 30 users to be evaluated in 7 real-world climate adaptation case studies across Europe. These cover a diverse array of water affected sectors, i.e. (i) flash flood risks in pre-alpine regions, (ii) flash flood risks in urban areas (iii) drought and water resource allocation for industry, tourism, agriculture and energy, (iv) hydropower production, (v) biodiversity decline, (vi) agricultural production and (vii) sediment transport and coastal erosion. Project results will be quantified by comparing climate service usability and economic cost of adaptation studies for these case studies before and after the project.

¹ A full list of Research Funding Organisations (RFOs) supporting Topic A can be found on page 28.

These projects are funded by JPI Climate and co-funded by the European Union.



CIREG

Title: Climate information for integrated renewable electricity generation

Lead PI: Hatterman Fred, Potsdam Institute for Climate Impact Research, Germany

Partner PIs:

- Lorenz Manuel, Smart Hydro Power GmbH, Germany
- Lamers John ZEF / University of Bonn, Germany
- Van Griensven Ann, Vrije Universiteit Brussel, Belgium
- Drews Martin, Technical University of Denmark, Denmark
- Fonta William, West African Science Service Centre on Climate Change and Adapted Land Use, Ghana
- HOFF Holger, Stockholm Environment Institute, Sweden

Research funding agencies: DLR, BELSPO, IFD, FORMAS

Abstract:

Increasing the share of renewable resources in the total energy mix can reduce greenhouse gas (GHG) emissions and thus is a promising pathway to meeting increasing energy demands. Since renewable energy sources depend on climatic conditions and are thus impacted by climate change and variability, decisions in the energy sector must be backed by climate services.

The aim of this project (CIREG) is the elaboration of a (model-based) support for decision-makers in the energy sector by establishing and providing necessary climate services covering all spatio-temporal scales from short-term to scenario projections and from local to transboundary and large river basin scales while following a transdisciplinary approach. CIREG thus will consider the entire water-energy-food-climate nexus, because decisions taken in the energy sector will inevitably have a feedback on water supply and food production.

These projects are funded by JPI Climate and co-funded by the European Union.



CitiSense

Title: Citizen Sensing – Urban Climate Resilience through Participatory Risk Management Systems

Lead PI: Neset Tina-Simone, Linköping University, Sweden

Partner PIs:

- Rød Jan Ketil, Norwegian Institute for Science and Technology, Norway
- Hounjet Micheline, Deltares, The Netherlands
- Santos Cruz Sara, University of Porto, Portugal

Research funding agencies: FORMAS, RCN, NWO, FCT

Abstract:

Urban citizens continually make a multitude of decisions related to climate-related risks that affect their safety, health and wellbeing. CitiSense aims to co-develop a participatory risk management system (PRMS) with citizens, local authorities and organizations which enable them to contribute to advanced climate services and enhanced urban climate resilience as well as receive recommendations that support their security. Citizens are acting as sensors to collect and send information and also novel means of citizen-technology interaction. Citizens, besides sending images, videos and texts will also interact with wireless sensor systems via a specially-designed app on their smart phones to upload and send monitored climate parameters to a database. This allows a large amount of site-specific data on emerging risks to be rapidly collected, which can link to and inform existing recommendations in current urban climate-related risk management and adaptation plans. Site-specific recommendations to guide citizen responses will be sent through the CitiSense app and placed on the web portal. This platform will facilitate the exploration of available data collected by other citizens in the city. The project will include four pilots conducted in cities in the Netherlands, Norway, Portugal and Sweden.

These projects are funded by JPI Climate and co-funded by the European Union.



CLIM2POWER

Title: Translating climate data into power plants operational guidance

Lead PI: Simoes Sofia, Associação para a Inovação e Desenvolvimento da Faculdade de Ciências e Tecnologia, Portugal

Partner PIs:

- Capela Lourenço, Tiago Fundação da Faculdade de Ciências da Universidade de Lisboa, Portugal
- Paes Pedro, EDP-Eletricidade de Portugal, Portugal
- Fröhlich Kristina, Deutscher Wetterdienst, Germany
- Schmidt Johannes, Institute for Sustainable Economic Development, University of Natural Resources and Life Sciences, Austria
- Holzmann Hubert, Institute of Water Management, Hydrology and Hydraulic Engineering, University of Natural Resources and Life Sciences, Austria
- Berrada Tariq, Wien Energie, Austria
- Assoumou Edi, ARMINES Centre de Mathématiques Appliquées de Mines ParisTech, France
- STROSSER Pierre, ACTeon, France
- RANCHIN Thierry, ARMINES Centre Observation, Impacts, Energie de MINES ParisTech, France
- O'Dwyer Barry, Centre for Marine and Renewable Energy (MaREI), Environmental Research Institute, University College Cork, Ireland
- Krook-Riekkola Anna, Energy Science division, Luleå University of Technology, Sweden

Research funding agencies: FCT, DLR, BMWFW, ANR, EPA, FORMAS

Abstract:

CLIM2POWER will develop a climate service that integrates seasonal weather forecasts into decision making in the electricity sector. The project will assess the value of current and possible future seasonal forecasts for an improved management of power generation portfolios and derive optimal operation schedules for the electricity sector, such as optimal operation of hydro-storage and of fossil fuel acquisition, applying a set of existing bottom-up, technology rich power system models. The final climate service will be available for the whole Europe; the project develops four regional case studies in Portugal, France, Sweden and in the German-Austrian market zone. The case studies put a different focus on markets and market prices, dam operation restrictions due to ecological regulation in the river systems, and flexibility options in the power sector. Future climate scenarios are assessed in an additional sensitivity analysis. The climate service is made available as public web service online. In particular power generation & trading companies, power system operators & regulators, power consumers, and water managers are going to directly profit from the outcome of our project.

These projects are funded by JPI Climate and co-funded by the European Union.



CLIMALERT

Title: Climate Alert Smart System for Sustainable Water and Agriculture

Lead PI: Pascoal Cláudia, University of Minho, Portugal

Partner PIs:

- Trigo Isabel, Instituto Português do Mar e da Atmosfera, IP, Portugal
- Kuhlicke Christian, Helmholtz-Centre for Environmental Research, Germany
- Sabater Sergi, Catalan institute for water research, Spain

Research funding agencies: FCT, DLR, MINECO

Abstract:

The CLIMALERT project emerges to provide climate information in a format that prospective users find it easy to understand and/or incorporate into decision-making. Main goals are: i) potentiate the link between climate research, water resources, and the agriculture sector to assist in management of natural resources, enhance agricultural livelihoods and reduce underlying causes of vulnerability, ii) advance the techniques and tools currently used to incorporate weather and climate information at different time scales into risk assessment and decision-making in agriculture (management practices), and iii) contribute to a global framework to improve the transfer and exchange of information on future or near-term climate scenarios to help decision-makers in applying adaptation and mitigation strategies. The new long-term preparedness plans of actions to reduce the risks and vulnerabilities for the agriculture and water management sectors will be developed, providing economically valuable services and long-term benefits to farmers and society.

These projects are funded by JPI Climate and co-funded by the European Union.



ClimApp

Title: Translating climate service into personalized adaptation strategies to cope with thermal climate stress

Lead PI: Gao Chuansi, Lund University, Sweden

Partner PIs:

- Nybo Lars, University of Copenhagen, Denmark
- Toftum Jørn, Technical University of Denmark, Denmark
- Daanen Hein, Vrije Universiteit Amsterdam, The Netherlands

Research funding agencies: FORMAS, IFD, NWO

Abstract:

The project is dedicated to support the integration of climate service data with thermal physiology and feedback from end-users. Researchers and stakeholders from climate services and end-user organizations will collaborate with thermal physiologists, clothing and hydration experts, sociologists, and engineers. We will combine information from climate forecasts and weather warnings, with end-user data to develop a decision support system through an App. The ClimApp will provide timely relevant guidelines for individuals and public and private sector agencies to take actions to improve thermal resilience when adverse environmental conditions are expected. Feedback will be utilized to improve the personalized climate service to maximize the impact and strengthen the integration of expertise from climatology and human physiology to optimize adaptation strategies for climate challenges.



ClimINVEST

Title: Tailored Climate Information for Investment Decisions

Lead PI: Clapp Christa, Center for International Climate and Environmental Research – Oslo, Norway

Partner PIs:

- Cochran Ian Thomas, I4CE – Institute for Climate Economics, France
- Kolasinski Michel Guillaume Pascal Jean, Climpact-Metnext, France
- Soubeyroux Jean-Michel, Meteo-France, France
- de Bruin Karianne, Alterra – Wageningen UR, The Netherlands

Research funding agencies: RCN, ANR, NWO

Abstract:

While many climate scenarios exist, it is difficult for investors to relate global scale and long-term horizons to actual risks on their investments in specific sectors or locations. Preliminary discussions with institutional investors via the CICERO Climate Finance center have revealed a substantial need for better sectoral and regional information on climate change specifically tailored to their investment decisions. The primary aim of ClimINVEST is to co-design and co-produce tailored information on climate change with investors. The secondary aims are 1) to feed climate information into the various risk framings of financial decision-makers; and 2) to add value to investor decisions through the co-development of tools for transferring and communicating climate information. The envisioned impact is a contribution to capacity building on mitigating and adapting to climate change for investors, improved communication between climate researchers and the financial community, and value-added to facilitated investment decision-making that accounts for physical climate risks, with a potential to increase investment e.g. in climate-resilient infrastructure.

These projects are funded by JPI Climate and co-funded by the European Union.



CLISWELN

Title: Climate Services for the Water-Energy-Land Nexus

Lead PI: Cremades Roger, Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung GmbH, Germany

Partner PIs:

- Mitter Hermine, Universität für Bodenkultur Wien, Austria
- Martínez-Vilalta Jordi, Centre de Recerca Ecològica i Aplicacions Forestals – Centre for Ecological Research and Forestry Applications, Spain
- Nicu Costi, National Institute for Research and Development in Forestry “Marin Dracea”, Romania

Research funding agencies: DLR, BMWFW, MINECO, UEFISCDI

Abstract:

The aim of CLISWELN is to advance the provision of Climate Services (CS) for drought-related decision making, by using the water-energy-land nexus (WELN) to integrate the cross-sectoral links of drought-risk management with further synergistic co-benefits between the provision of climate services and long-term societal objectives like sustainable land planning, mitigation of CO₂ emissions and other locally relevant policy targets connected with the Sustainable Development Goals. CLISWELN will study case studies with conflicting water uses dealing with cities, regions and river basins that have specific drought-related vulnerabilities: large amounts of water used for bioenergy, suboptimal forest management compromising water availability downstream, and a vulnerable touristic sector operating in the dry season. CLISWELN will create and foster a meeting point for bringing together a variety of experiences, know-how and approaches from each case study, focusing on reduced risks, and on the economic and environmental benefits of considering CS from an integrated WELN perspective.

These projects are funded by JPI Climate and co-funded by the European Union.



Co-Cli-Serv

Title: Co-development of place-based climate services for action

Lead PI: Vanderlinden Jean-Paul, Laboratoire Cultures, Environnements, Arctique, Représentations, Climat, Université de Versailles Saint-Quentin-en-Yvelines, France

Partner PIs:

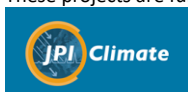
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- Meinke Insa, Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung GmbH – Institut für Küstenforschung, Germany
- Krauss Werner, University of Bremen / artec – Sustainability Research Center and IFEK – Department of Anthropology and Cultural Research, Germany
- Peeters Didier, Université Libre de Bruxelles, Institut de Gestion de l'Environnement et Aménagement du Territoire, Belgium
- De Rudder Anne, Royal Belgian Institute for Space Aeronomy, Belgium
- Van der Sluijs Jeroen, University of Bergen, Centre for the Study of the Sciences and the Humanities, Norway
- Runhaar Hens, Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

Research funding agencies: ANR, DLR, BELSPO, RCN, NWO

Abstract:

Co-cli-serv will identify future information and the nature of the climate science needs to address the local communities' concerns, aspirations and goals in view of climate variability and climate change. It will develop a novel approach for co-constructing climate services to support local planning and adaptation decision-making. Co-cli-serv will establish a collaborative relationship between climate science and local communities in five representative case studies in Norway, France, the Netherlands and Germany. Co-cli-serv's approach is its focus on narratives of change as a localisation device. Grounded in such narratives, vision-based scenarios will be developed by employing an incremental and community-led strategy, enabling the identification of current AND future knowledge needs. The project will experiment with art–science–policy integration in the case studies. Building on existing climate science and practices, Co-cli-serv will instigate and sustain community dialogues to co-construct place-based climate services.

These projects are funded by JPI Climate and co-funded by the European Union.



CO-MICC

Title: 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

Lead PI: Döll Petra, Goethe University Frankfurt, Germany

Partner PIs:

- Gerten Dieter, Potsdam Institute for Climate Impact Research, Germany
- Natschke Michael, KISTERS AG, Business Unit Water, Germany
- Demuth Siegfried, International Centre for Water Resources and Global Change hosted by the Federal Institute of Hydrology (UNESCO Category 2 Center), Germany
- Spielmann Michael, Quantis GmbH&Co.KG, Germany
- Wada Yoshihide, International Institute for Applied Systems Analysis Initials, Austria
- Dubreuil-Imbert Céline, Plan Bleu – Regional activity Center of UNEP/MAP, France
- Djellouli Yamna, University of Maine (ESO-UMR 6590-CNRS), France
- Polcher Jan, Laboratoire de Météorologie Dynamique du CNRS/IPSL, France

Research funding agencies: DLR, BMFWF, ANR

Abstract:

The main project goal is to co-develop methods for providing and utilizing multi-model ensembles (MME) data on freshwater-related hazards for risk and adaptation assessments at various spatial scales, and to provide data in a suitable way, in order to increase availability and applicability of information for different types of end-users, with a focus on how to address uncertainties. Co-development of PUNI (Providing and Utilizing eNsemble Information) methods will be done jointly by global hydrological modellers, scientists investigating co-development methods and societal information needs boundary organizations and stakeholders (end-users). They will all participate in three stakeholder dialogues at the global scale (end-user industries), transboundary scale (Morocco, Algeria, Tunisia), and river basin scale (Ebro). Expected results include a handbook on PUNI methods and a web portal at UNESCO's International Centre for Water Resources and Global Change where end-users from around the world will be able to access hydrological MME data for their region of interest for free and in a way that suits their needs, e.g. by selecting a hazard indicator for low flows as well as its spatial and temporal aggregation.

These projects are funded by JPI Climate and co-funded by the European Union.



CoCliME

Title: Co-development of CLimate services for adaptation to changing Marine Ecosystems

Lead PI: O'Rourke Eleanor, Marine Institute, Ireland

Partner PIs:

- Maguire Julie, Daithi O'Murchu Marine Research Station, Ireland
- JOHN Uwe, Alfred Wegener Institut, Germany
- Berdalet Elisa, Consejo Superior de Investigaciones Científicas, Spain
- HESS Philipp, Institut Francais de recherche pour l'Exploitation de la Mer, France
- Travers Muriel, University of Nantes, France
- LEMÉE Rodolphe, Universite Pierre et Marie Curie, France
- Hovelsrud Grete, Center for International Climate and Environmental Research – Oslo, Norway
- Naustvoll Lars Johan, Institute of Marine Research, Norway
- Stoica Elena, National Institute for Marine Research and Development “Grigore Antipa”, Romania
- Andersson Helen, Swedish Meteorological & Hydrological Institute, Sweden
- Barquet Karina, Stockholm Environment Institute, Sweden

Research funding agencies: EPA, DLR, IFD, MINECO, ANR, RCN, UEFISCDI, FORMAS

Abstract:

The CoCliME project will co-produce a set of regionally focused climate services to address key impact areas including human health, aquaculture, fisheries and tourism across the regional seas of Europe. The developed services and associated decision support tools will empower and support vulnerable coastal sectors to accelerate adaptive decision-making and feed into key governance mechanisms. The project team brings together a newly established consortium of boundary organisation experts in co-development of climate services with leaders in marine ecosystem research, regional ocean climate modellers, and targeted users and decision makers in regions. The project will offer an innovative, user-focused approach and the development of a societally relevant climate service framework, in addition to the bespoke climate services, that will be transferable to other regions, impact areas, users and marine ecosystem vulnerabilities. Through a regional case study approach, the specific needs of national and European marine ecosystem impact and adaptation planners and regulatory authorities will be identified and addressed through an evidence-based and iterative process designed to feed into climate adaptation strategies across the EU and beyond.

These projects are funded by JPI Climate and co-funded by the European Union.



EVOKED

Title: Enhancing the value of climate data – translating risk and uncertainty utilizing a Living Labs approach

Lead PI: Oen Amy, Norwegian Geotechnical Institute, Norway

Partner PIs:

- Gulliksen Knut Hjalmar, Larvik Municipality, Norway
- VAFEIDIS Athanasios, Christian-Albrechts University Kiel, Germany
- Kaulbars Joachim, City of Flensburg, Germany
- Van der Brugge Rutger, Deltares, The Netherlands
- Van Lamoen Frank, Provincie Noord-Brabant, The Netherlands
- Van Well Lisa, Swedish Geotechnical Institute, Sweden
- Nordmark Katarina, Värmland County Administrative Board, Sweden

Research funding agencies: RCN, DLR, NWO, FORMAS

Abstract:

The objective of EVOKED is to re-frame the risk and uncertainty associated with climate data into knowledge products more understandable and useful for end-users concerned with risk mitigation. We engage end-users in a Living Labs approach and encourage them to evoke their perceptions of risk and uncertainty, and identify which kind of data or presentation evokes action towards climate adaptation. The project will initiate a feedback loop, which includes: (i) a co-design process between users, climate knowledge providers and translators; ii) the co-development of products such as visualization tools and climate- and socio-economic change scenarios; iii) field trials to co-validate the operational products and their potential to initiate climate adaption measures; and subsequently iv) the re-assessment of risk and uncertainty to evaluate the user experience. The project team will implement Living Labs in Norway, Sweden, Germany and the Netherlands at established case study sites. EVOKED will focus on the vulnerable sectors of water management, disaster risk reduction and coastal management.

These projects are funded by JPI Climate and co-funded by the European Union.



INNOVA

Title: Innovation in Climate Services Provision

Lead PI: Máñez María, Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung GmbH, Germany

Partner PIs:

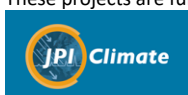
- Martínez Grit, Ecologic institut gemeinnützige GmbH, Germany
- García-Prats Alberto, Universitat politecnica de Valencia, Spain
- Collard Martine, Universite des Antilles, France
- Swart Rob, Stichting Dienst Landbouwkundig Onderzoek, The Netherlands

Research funding agencies: DLR, MINECO, ANR, NWO

Abstract:

The primary objectives of INNOVA are: 1) the co-development of innovative solutions to transform climate risks into opportunities actively engaging a variety of stakeholders and 2) the identification of measures for evaluating and monitoring, up-scaling, and replicating efficient current and future innovative climate services for decision making on managing climate risks taking into account their added value. The project aims to consolidate knowledge from leading earlier and on-going European initiatives and to distil specific complementary climate services essential for the enhancement and adoption of innovative solutions to support climate risk management. The project will provide prototypes including viable business models and practical innovation frameworks, and recommendations for creating and up-scaling opportunities through adaptive co-management approaches.

These projects are funded by JPI Climate and co-funded by the European Union.



INSeaPTION

Title: INtegrating SEA-level Projections in climate services for coastal adaptaTION

Lead PI: Le Cozannet Goneri, Bureau de Recherches Géologiques et Minières, France

Partner PIs:

- Walker Patrice, CREOCEAN, France
- Duvat Virginie, UMR 7266 Laboratoire Littoral Environnement et Sociétés - Equipe "Approche Géographique : Iles, Littoraux, Environnement", France
- Hinkel Jochen, Global Climate Forum, Germany
- Marcos Marta, University of the Balearic Islands, Spain
- Van De Wal Roderik, University of Utrecht, The Netherlands

Research funding agencies: ANR, DLR, MINECO, NWO

Abstract:

Sea-level rise related information currently available is not customized to the practice of coastal adaptation, which requires services tailored to users' needs including full information on uncertainties, high-end estimates, accurate storm and flood modeling, shoreline change projections and relevant adaptation options within the context of current practices and governance arrangements. The INSeaPTION project aims at addressing these limitations by co-designing and co-developing coastal climate services based on state-of-the art sea-level rise, impact, adaptation and transdisciplinary science. The project will deliver coastal climate services based on end-users' needs and their decision and governance context, covering the whole chain of climate service development from global to regional mean and extreme sea-level projections with their impacts and uncertainties to local sea-level, coastal impacts and adaptation pathways. As tropical islands are high impact sectors and currently receive little attention, the project selected Maldives and French Polynesia as pilot sites for local coastal climate services. The project's transdisciplinary approach combines continuous interactions with users of both the global and local services to be developed with cutting edge sea level, impact modelling, decision making and governance research.

These projects are funded by JPI Climate and co-funded by the European Union.



ISlpedia

Title: The open inter-sectoral impacts encyclopedia

Lead PI: Frieler Katja, Potsdam Institute for Climate Impact Research, Germany

Partner PIs:

- Arne Almut, Karlsruhe Institute of Technology, Germany
- Hinkel Jochen, Global Climate Forum, Germany
- Hickler Thomas, Senckenberg Biodiversity and Climate Research Centre, Germany
- Hare Bill, Climate Analytics, Germany
- Müller Schmied Hannes, Institute of Physical Geography, Goethe University Frankfurt, Germany
- Wada Yoshihide, International Institute for Applied Systems Analysis, Austria
- Pena Ortiz Cristina, Universidad Pablo de Olavide, Spain
- Galbraith Eric, Universitat Autònoma de Barcelona, Spain
- Ciais Philippe, Commissariat à l’Energie Atomique, France
- van Vuuren Detlef, Utrecht University, The Netherlands
- Rocklöv Joacim, Umeå Centre for Global Health Research, Department of Public Health and Clinical Medicine, Unit of Epidemiology and Global Health, Umeå University, Sweden

Research funding agencies: DLR, BMWFW, MINECO, ANR, NWO, FORMAS

Abstract:

This project addresses the coproduction of climate-impacts knowledge, in collaboration between scientists and users such as climate-adaptation-policy experts. The project team boasts world-class experts in science-policy dialogue, cross-sectoral impacts research and research coordination, and scientific excellence in impacts modelling. The end product is an open climate-impacts service portal, ISlpedia, offering tailored access to state-of-the-art climate-impacts assessments and data, based on the cross-sectoral, multi-model simulations conducted within the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP). Four key tasks will be undertaken: 1) stakeholder-supported selection of focus topics and development of the scenario design for the next ISIMIP simulation round; 2) co-development of societally- and user-relevant impacts indicators based on the (bio-)physical projections generated within ISIMIP, such as “number of people affected”, “economic damages” or indicators related to the Sustainability Development Goals; 3) provision of input data and coordination of cross-sectoral impact-modelling activities within ISIMIP, and 4) establishment of a new online platform ISlpedia to provide access to simulation data, regional, cross-sectoral impact assessments based on ISIMIP data, and co-developed indicators.

These projects are funded by JPI Climate and co-funded by the European Union.



SALIENSEAS

Title: Enhancing the Saliency of climate services for marine mobility Sectors in European Arctic Seas

Lead PI: Lamers Machiel, Wageningen University and Research, The Netherlands

Partner PIs:

- Olsen Steffen, Danish Meteorological Institute, Denmark
- Knol Maaïke, University of Tromsø, Norwegian College of Fishery Science, Norway
- Mueller Malte, Norwegian Meteorological Institute, Norway
- Mueller Dieter, Umea University, Department of Geography and Economic History, Sweden

Research funding agencies: NWO, IFD, RCN, FORMAS

Abstract:

The SALIENSEAS project will co-develop, in a team of social and natural scientists, met-ocean service personnel, and end-users, climate Arctic forecast products tailored to key social, environmental and economic needs. Based on a thorough understanding of the current mobility patterns and challenges, as well as the uptake and need for climate services in several mobile Arctic Ocean end-user groups, a range of demonstration services will be co-defined and co-produced with these stakeholders. The project will conduct in-depth social science research in relevant end-user practices, disseminate forecast products of climate information, and develop a more participatory, flexible and tailored approach to developing forecast products. Arctic sub-seasonal and seasonal prediction capabilities and climate projections in the Arctic will be systematically exploited, in order to establish baseline expectations for predictive power and to guide advances in predictive capability. The developed tailored forecast products will be merged into Norway's and Denmark's met-ocean and sea-ice forecasting infrastructures and maintained and developed beyond the lifetime of this project.

These projects are funded by JPI Climate and co-funded by the European Union.



SENSES

Title: Climate Change ScENario ServiceS: Mapping the Future

Lead PI: Kriegler Elmar, Potsdam Institute for Climate Impact Research, Germany

Partner PIs:

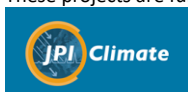
- Müller Boris, University of Applied Sciences Potsdam, Germany
- Krey Volker, International Institute for Applied Systems Analysis, Austria
- Kok Kasper, Wageningen University, The Netherlands
- Carlsen Henrik, Stockholm Environment Institute, Sweden

Research funding agencies: DLR, BMWFW, NWO, FORMAS

Abstract:

The project aims at the development of tools and techniques to make the new generation of global climate change scenarios accessible to multiple and diverse user groups of climate change information. The project will develop techniques for the co-production of scenario knowledge for dedicated user groups and invest in the co-design of user-centred scenario visualization tools. Three key user groups are targeted: national and international climate policy makers, regional climate change scenario users, and businesses with a long term planning horizon. The developed co-production techniques and visualization tools will be integrated into a climate change scenario toolkit to translate complex scientific scenario information into relevant knowledge for these user groups enabling them to gain relevant insights into adaptation to climate change, mitigation of climate change and residual climate impacts. In order to tackle this challenge, the project will bring together climate scenario researchers, communication and design specialists and representatives of the climate policy making and international business communities as well as regional stakeholders in two case studies located in the Netherlands and East Africa.

These projects are funded by JPI Climate and co-funded by the European Union.



WATExR

Title: Integration of climate seasonal prediction and ecosystem impact modelling for an efficient adaptation of water resources management to increasing climate extreme events

Lead PI: Marcé Rafael, Institut Català de Recerca de l'Aigua, Spain

Partner PIs:

- Frias Dominguez Maria Dolores, Universidad de Cantabria, Spain
- Rinke Karsten, Helmholtz-Centre for Environmental Research, Germany
- Trolle Dennis, Aarhus University, Denmark
- Deeyto Elvira, Marine Institute Galway, Ireland
- Jennings Eleanor, Dundalk Institute of Technology, Ireland
- Couture Raoul-Marie, Norwegian Institute for Water Research, Norway
- Pierson Don, Uppsala University, Sweden

Research funding agencies: MINECO, DLR, IFD, EPA, RCN, FORMAS

Abstract:

WATExR aims to integrate state-of-the-art climate seasonal prediction and water quality simulation in an advanced solution to ensure efficient decision making and adaptation of water resources management to an increased frequency of climate extreme events. The goal is to assess the potential of solution-oriented, innovative integrative advanced modeling tool implemented in QGIS for understanding and anticipating the impacts of climate extreme events, thus increasing the adoption of Climate Services in water resources management. This will be achieved by identifying end-user demands in 7 case studies in Europe and Australia relating to the impact of climate extreme events on water supply companies, fisheries, and water authorities implementing the Water Framework Directive (WFD). WATExR will join the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP2), contributing a selected set of water quality impact models following the ISIMIP2 simulation protocol.

These projects are funded by JPI Climate and co-funded by the European Union.



Topic B - Institutional integration between Research Performing Organisations

8 projects for 29 Mio EUR

DustClim

Title: Dust Storms Assessment for the development of user-oriented Climate Services in Northern Africa, Middle East and Europe

Lead PI: Basart Sara, BSC, Spain

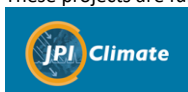
Research performing organisations: BSC, AEMET, FMI, CNRS, CNR-DTA²

Abstract:

DustClim will make a significant step forward in the way sand and dust storms (SDS) affects society. The objectives are to produce and deliver an advanced and thoroughly evaluated dust regional model reanalysis for Northern Africa, Middle East and Europe covering the satellite era of quantitative aerosol information, and to develop dust-related services tailored to specific applications. The novelties of the DustClim reanalysis include an unprecedented high resolution, the assimilation of satellite products over dust source regions with specific observational constraints for dust. There is currently a very limited integration of dust information into practice and policy. The reanalysis will provide reliable information on SDS trends and current conditions that will be used in pilot studies to assess dust impacts upon three key economic sectors (air quality, aviation and solar energy). There will be a continuous feedback between the scientific teams and the main user communities for better defining the dust parameters to be investigated and to optimize the provision of dust services.

² A full list of Research Performing Organisations (RPOs) supporting Topic B can be found on page 28.

These projects are funded by JPI Climate and co-funded by the European Union.



ECLISEA

Title: European advances on CLimate services for coasts and SEAs

Lead PI: Menendez Melisa, UC-IHC, Spain

Research performing organisations: UC-IHC, HZG, BRGM, CNRS, NCSR

Abstract:

ECLISEA aims to advance coastal climate science concerning sea surface dynamics over the European coasts and seas. Focused on (i) developing new data and climate information by supporting harmonized analysis at a consistent European scale, (ii) the research on climate variability, predictability and long-term projections, and (iii) the investigation of the complexity and uncertainties of impact models on the coastal region and shelf seas, ECLISEA proposes an integral research plan with the review of stakeholders needs and the development of a user-friendly and on-line open European prototype of a coastal climate service. Characterization and change of extreme met-ocean conditions or the assessment of uncertainties of regional mean sea level rise from the historical and future perspectives are considered, as well as wind-waves and storm surge climate predictability from seasonal to decadal time scales. The project will produce a set of recommendations and best practices about coastal climate and coastal impact aspects, a European data infrastructure with its atlas viewer, and several models, methods and tools that will be useful for a variety of stakeholder sectors.

These projects are funded by JPI Climate and co-funded by the European Union.



EUPHEME

Title: European Prototype demonstrator for the Harmonisation and Evaluation of Methodologies for attribution of extreme weather Events

Lead PI: Lethem Dom, Met-Office, UK

Research performing organisations: Met-Office, UREAD, Météo France, BRGM, CEA, CNRS, Met Éireann, KNMI, UVGZ

Abstract:

EUPHEME will demonstrate the capability of an integrated attribution system to meet the needs of European stakeholders for advice on how the risks of extreme weather and climate events are being affected by human-induced climate change. EUPHEME will develop state of the art methods for the attribution of extreme weather and climate events on a range of timescales, and new techniques for evaluating their reliability. EUPHEME will develop a scientific platform which hosts data, supports data processing and provides collaboration space for scientists from the partner institutions to carry out attribution analyses using complementary methods and data sources. Finally EUPHEME will provide a user-oriented synthesis, disseminate consistent attribution assessments through a prototype attribution service website and demonstrate the potential of attribution products to a wide variety of stakeholders.

These projects are funded by JPI Climate and co-funded by the European Union.



INDECIS

Title: 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

Lead PI: Aguilar Enric, C3/URV, Spain

Research performing organisations: C3/URV, UC/IHC, AEMET, CSIC, BSC, RMI, FMI, BRGM, Met Éireann, CNR-DTA, KNMI, FFCUL, METEORO, UREAD, SMHI, UVGZ

Abstract:

INDECIS will provide an integrated approach to produce a set of relevant climate indices targeting the high priority sectors (agriculture, disaster risk reduction, energy, health, water) plus tourism. To accomplish this, INDECIS will inventory and catalogue existing datasets of precipitation, temperature, wind speed and sunshine duration, search new data holdings and develop new methods and tools to assure their quality and homogeneity. The project will gather information on climate indicators routinely computed by the participating institutions and third parties across Europe and work to improve them in consultation with sectorial experts. It will use sectorial statistics and teleconnection indices to explore predictive relations and responses to climate variability and change. This will be accompanied by the development of tools for indices near-real time calculation, spatial interpolation, visualization and communication of climate monitors. INDECIS will compare its products with those derived from reanalysis to assess their validity as alternate datasets to produce sectorial indices in the absence of observed datasets and with climate model output for validation and interpretation.

MEDSCOPE

Title: MEDiterranean Services Chain based On climate PrEdictions

Lead PI: Gualdi Silvio, Fondazione CMCC, Italia

Research performing organisations: Fondazione CMCC, CNR, RMI, BSC, AEMET, Météo France, INRA

Abstract:

The MEDSCOPE project aims at advancing initiatives by developing climate forecast capabilities and related services on seasonal-to-decadal timescales. The strategy will be based on exploiting the wide range of existing datasets of climate observations and forecasts to improve our understanding of sources and mechanisms of predictability. This will be complemented by targeted sensitivity experiments focusing on key drivers of Mediterranean climate variability. Improved process understanding will serve as a basis to develop innovative empirical forecasting systems as well as novel process-based methods for bias correction, downscaling and optimal combination of sources of information, all of which will be publicly released via a toolbox. Special efforts will be devoted to sensitivity of climate predictions to models' climate drift, to spatial shifts of variability patterns and to the selection of sub-ensembles representative of the needs of specific applications. The added value provided by MEDSCOPE to climate services will be assessed for various sectors with high societal impact, e.g. renewable energy, hydrology and agriculture and forestry.

These projects are funded by JPI Climate and co-funded by the European Union.



SERV_FORFIRE

Title: Integrated services and approaches for Assessing effects of climate change and extreme events for fire and post fire risk prevention

Lead PI: Lasaponara Rosa, CNR-DTA, Italia

Research performing organisations: CNR-DTA, KNMI, FMI, BRGM, NCSR, UVGZ

Abstract:

The project aims at creating an international collaborative community, expert in remote sensing soil and vegetation, risk management and mitigation, to provide climate information along with decision makers and planning authorities in order to: • increase efficiency of decision and policy makers authorities response, to improve the preparedness level of our societies and to limit the high economic cost of climate variability impact on fire and post fire risks, develop methods and procedures within the framework of fire and post fire risk management in Europe at climatic time scales: • strengthen the science-policy-society nexus using a participatory approach, by improving operational or experimentally tested climate services in Europe, tailoring relevant information for decision and policy makers through a participatory and circular approach, capacity building user-based tools, specific training programs, dissemination activities, • increase the information regarding the drought conditions on wildfire and post fire risks management at climatic time scales for national and local authorities decision-making procedures and planning activities, • collect scenarios on the effects of climate change on vegetation and fire occurrence, • investigate adaptation strategies and approaches to deal with future fire occurrence.

These projects are funded by JPI Climate and co-funded by the European Union.



URCLIM

Title: URban CLIMate services

Lead PI: Masson Valéry, Météo France, France

Research performing organisations: Météo France, CNRS, IGN, RMI, FMI, KNMI, Meteo-Ro

Abstract:

The ambition of the URCLIM project is to advance significantly on Urban Climate Services (UCS), for urban planners and related stakeholders using open urban data and regional climate data. In order to realize this goal, the project has 4 scientific objectives : 1) to develop a methodology for the creation of high resolution maps of urban parameters for climate studies 2) to analyse the propagation of uncertainty from regional climate models to urban scale climate models and local impact models, 3) to evaluate multi-criteria impacts and various types of adaptation strategies, 4) to define pertinent Urban Climate Services in cooperation with stakeholders, and using a visualization interface. Several case studies will also be chosen, each located in a different climate, influenced by different geographical features, and with a different urban history and structure.

These projects are funded by JPI Climate and co-funded by the European Union.



WINDSURFER

Title: WIND and wave Scenarios, Uncertainty and climate Risk assessments for Forestry, Energy and Reinsurance

Lead PI: Shaffrey Len, UREAD, UK

Research performing organisations: UREAD, UC-IHC, FMI, NCSRD, Met Éireann, Fondazione CMCC, Met Norway, KNMI

Abstract:

Extreme winds pose major risks to life, property and forestry while extreme oceans waves can impact on offshore infrastructures and coastal communities. Understanding how European Windstorms may change in the future is critical for assessing future weather risk. There are gaps in understanding current and future windstorm risks, and the impact that windstorms have on key socioeconomic sectors such as insurance, forestry and energy. To address these knowledge gaps and to better inform strategies for mitigating current risks and for climate change adaptation, WINDSURFER will bring together eight leading research institutions across Europe to: 1. develop new methods and tools to better quantify current extreme wind and wave risk and understand how it might change in the future; 2. develop impacts studies and new impact models for European windstorms and associated extreme wind and wave damage; 3. provide localised climate information for current and future wind and wave risk, with a particular focus on the Insurance, Forestry, and Offshore Energy sectors.

These projects are funded by JPI Climate and co-funded by the European Union.



Research Funding Organisations (RFOs) supporting Topic A

- Agence Nationale de la Recherche (**ANR**), France
- Bundesministerium für Wissenschaft, Forschung und Wirtschaft (**BMWFW**), Austria
- Service public fédéral de programmation politique scientifique (**BELSPO**), Belgium
- Deutsches Zentrum für Luft- und Raumfahrt EV (**DLR**), Germany
- Innovationsfonden (**IFD**), Denmark
- Ministerio de Economía y Competitividad (**MINECO**), Spain
- Environmental Protection Agency of Ireland (**EPA**), Ireland
- Nederlandse organisatie voor wetenschappelijk onderzoek (**NWO**), the Netherlands
- Norges forskningsrad (**RCN**), Norway
- Fundação para a Ciência e a Tecnologia (**FCT**), Portugal
- Executive Agency for Higher Education, Research, Development and Innovation Funding (**UEFISCDI**), Romania
- Slovak Academy of Sciences (**SAS**), Slovakia
- Forskningsrådet för miljö, areella näringar och Samhällsbyggande (**FORMAS**), Sweden

Research Performing Organisations (RPOs) supporting Topic B

- Universitaet Graz (**Uni Graz**), Austria
- Institut Royal Météorologique de Belgique (**RMI**), Belgium
- Global Change Research Centre CAS (**CzechGlobe**), Czech Republic
- Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (**AWI**), Germany
- Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung GMBH (**HZG**), Germany
- Danmarks Meteorologiske Institut (**DMI**), Denmark
- Agencia Estatal de Meteorologia (**AEMET**), Spain
- Barcelona Supercomputing Center - Centro Nacional de Supercomputacion (**BSC**), Spain
- Agencia Estatal Consejo Superior de Investigaciones Científicas (**CSIC**), Spain
- Universidad de Cantabria (**UC-IHC**), Spain
- Universitat Rovira i Virgili (**URV-C3**), Spain
- Ilmatieteen Laitos (**FMI**), Finland
- Suomen ympäristökeskus (**SYKE**), Finland
- Bureau de Recherches Géologiques et Minières (**BRGM**), France
- Commissariat à l'Énergie Atomique et aux Énergies Alternatives (**CEA**), France
- Centre National de la Recherche Scientifique (**CNRS**), France
- Institut national de l'information géographique et forestière (**IGN**), France
- Institut national de la recherche agronomique (**INRA**), France
- Météo-France (**Météo-France**), France
- National Center for Scientific Research "Demokritos" (**NCSR**), Greece
- Department of the environment, community and local government (**Met Eireann**), Ireland
- Fondazione Centro euro-mediterraneo sui cambiamenti climatici (**CMCC**), Italy
- Consiglio Nazionale delle Ricerche (**CNR-DTA**), Italy
- Koninklijk Nederlands Meteorologisch Instituut-KNMI (**KNMI**), the Netherlands
- Meteorologisk institutt (**Met Norway**), Norway
- Fundação da Faculdade de Ciências da Universidade de Lisboa (**FFCUL**), Portugal
- Administratia nationala de meteorologie R.A. (**Meteo-Ro**), Romania
- Sveriges Meteorologiska och Hydrologiska Institut (**SMHI**), Sweden
- The University of Reading (**UREAD**), United Kingdom
- Met Office (**Met Office**), United Kingdom

These projects are funded by JPI Climate and co-funded by the European Union.

