

EXAMPLES OF INTERDISCIPLINARY RESEARCH ON CLIMATE CHANGE

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The *Paris Research Consortium Climate-Environment-Society* aims to encourage and fund interdisciplinary research in climate change and its impacts on society and the environment. It relies on the research expertise of thirteen laboratories in the Paris region (five of which are grouped in the Institut Pierre-Simon Laplace), working mainly in climatology, hydrology, ecology, health and social sciences and humanities.

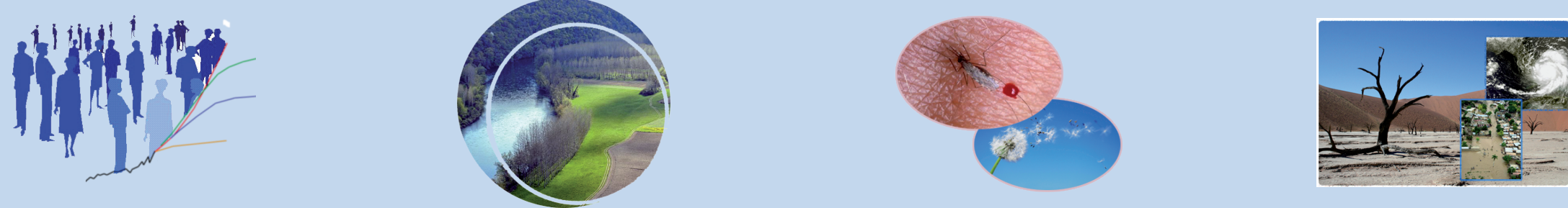
Four key research areas

Global climate, energy policies, and economic development

Climate extremes and vulnerable regions

Climate change, ecosystems, land use and water resources

Impacts of climate change on health



Institut Pierre Simon Laplace and 8 laboratories in the Paris area

A potential of 300 researchers



Health Sciences

Laboratoires de l'UFR Médicale Paris Ile-De-France Ouest

Air quality

Laboratoire interuniversitaire des systèmes atmosphériques (LISA)

Climate Sciences

Institut Pierre Simon Laplace

Centre d'étude des environnements terrestres et planétaires (CETP)

Laboratoire de météorologie dynamique (LMD)

Laboratoire d'océanographie et du climat (LOCEAN)

Laboratoire des sciences du climat et de l'environnement (LSCE)

Service d'aéronomie (SA)

Ecology

Biogéochimie et écologie des milieux continentaux (BIOEMCO)

Ecologie Systématique et Evolution (ESE)

Hydrology

Structure et fonctionnement des systèmes hydriques continentaux (Sisyphé)

Social and economic Sciences

Centre d'économie et d'éthique pour l'environnement et le développement durable (C3ED)

Centre international de recherche sur l'environnement et le développement (CIRED)

Laboratoire d'économétrie de l'Ecole Polytechnique (CECO)

Five examples of the consortium's funded projects :

DECLIC : Greenhouse gas emissions: study of economic patterns and climate change associated with several scenarios

Labs involved: LSCE, LMD, CIRED

This project aims to contribute to the development of a strategy for building the future climate simulations in the framework of the next IPCC Report (AR5). DECLIC will tackle issues at the heart of this strategy such as: for a given scenario of stabilisation of greenhouse gas concentrations in the atmosphere, what will be the compatible levels of these gas emissions in the course of the century, how climate will change, and what mitigation strategies could be planned to reach emission objectives? Emissions will be disaggregated according to IPCC regions and economic sectors, in order to quantify optimal economic trends for stabilizing greenhouse gas.

Coordinators: Pierre Friedlingstein (LSCE), Renaud Crassous (CIRED)

RENASEC : Characterisation of extreme events in France since 1500, and assessment of their frequency and magnitude over time

Labs involved: LSCE, CIRED

Have extreme phenomena evolved in amplitude and frequency since 1500 due to the present climate change in five particularly vulnerable regions in France (Western France, the east of France, the Rhône-Alpes and the Languedoc-Roussillon regions, and the Paris area), as predicted by models? What have been the ecological and socio-economical impacts of these extreme phenomena and what prevention and assistance policies have been adopted *a posteriori*? Results will be used to build a cost model of the major extreme events to improve the evaluation of possible damages if their frequency and magnitude increase.

Coordinator: Emmanuel Garnier (LSCE)

REGYNA : Regionalisation of precipitation, and hydrological and agricultural impact of climate change on vulnerable regions

Labs involved: LOCEAN, LSCE, LMD, CIRED

REGYNA aims to assess precipitation regimes in a context of climate change, quantify the uncertainties associated with these predictions, and comprehend the hydrological and agricultural impacts in three vulnerable regions: the Mediterranean region, West Africa and the la Plata and South Amazon basins.

Coordinator: Benjamin Sultan (LOCEAN)

MORCE MED : Coupled regional modelling platform for the study of the regional impacts of climate change. Application to the Mediterranean region

Labs involved: LMD, SA, LOCEAN, LSCE

This project aims to develop a regional modelling platform centred on the Mediterranean region. It is based on coupling of existing regional models of the various components of the Earth system (ocean, continental land masses, and atmospheric composition) and interfacing with the IPSL's global climate model.

Coordinator: Philippe Drobinski (LMD)

RAMONS : Mobilising and structuring climate science : a French case study

Labs involved: C3ED and voluntary labs from the consortium

RAMONS is related to the analysis of practices of interdisciplinary science. Its purpose is to give to scientists, involved in the dynamics of interdisciplinary research on climate change impacts, the resources needed to reinforce synergies between distinct scientific fields, as well as establish a better interface between their knowledge production activities and society.

Coordinator : Jean-Paul Vanderlinden (C3ED)