



TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

The CNRS supporting the 2030 Agenda – a few examples:



Climate change is a challenge for society and a major scientific challenge of our century. Thanks to unprecedented research efforts in recent decades, its many manifestations and its main mechanisms are now better known. The main impact is an increase in the planet's overall temperature, a consequence of the very rapid accumulation of greenhouse gases (GHGs) generated by human activity over the last 150 years. However, many other impacts have been demonstrated, such as the increase in the frequency and intensity of extreme weather events – heatwaves or floods –, melting polar ice or mountain glaciers, the gradual rise in sea level, and more generally changes in the water cycle and in the planet's other major cycle, the cornerstones of life. Assessing environmental and societal (mainly local) vulnerabilities and the associated risks, while developing solutions to limit GHG emissions and to adapt to certain unavoidable changes is a new field of multidisciplinary research and innovation for the CNRS, fuelled by partnerships with many organisations and stakeholders in society.



RESEARCHERS INVOLVED IN CLIMATE CHANGE

Their goal is to observe, understand and model the complexity of the interactions between natural and anthropized environments, and the social, health, economic and environmental issues that must guide future choices. Scientific publications, involving many CNRS researchers as authors or reviewers, draw on the synthesis reports of the IPCC (Intergovernmental Panel on Climate Change). The CNRS is an active participant in the Conferences of the Parties on Climate Change (COP-Climate), informing on climate change and providing the scientific basis for discussions on solutions.



Claude Lorius, 1984, Antarctica. The study of the evolution of carbon dioxide concentration in ice cores helps us deduce past climatic variations.

Claude Lorius, climate explorer in Antarctica and CNRS Gold Medallist in 2002, featured in the film Ice and The Sky, a documentary by Luc Jacquet, released in 2015, the year of the COP 21 climate conference in Paris. © Jean-Robert Petit/CNRS photo library.

MODELLING TO UNDERSTAND THE COMPLEXITY OF CLIMATE AND ITS IMPACTS

Climate modelling and simulation of climate change can explain how climate change results from different natural or anthropogenic disturbances and enable assessment of the impact of human activity. They also make it possible to qualify the extreme events that may result, such as summer heatwaves, to forecast the evolution of resources – and especially water resources – or to examine the effect of action taken to tackle climate change in connection with international programmes such as the World Climate Research Programme (WCRP) and Future Earth. In France, the activity is coordinated via the CLIMERI research infrastructure, using the storage resources of the CNRS computing institute (IDRIS). The observational data collected collectively are made available by the Institut Pierre Simon Laplace and the AERIS Atmosphere and Service Data Pole, which manages the data and develops services to ensure unrestricted access to all atmospheric research.

Find out more: www.aeris-data.fr

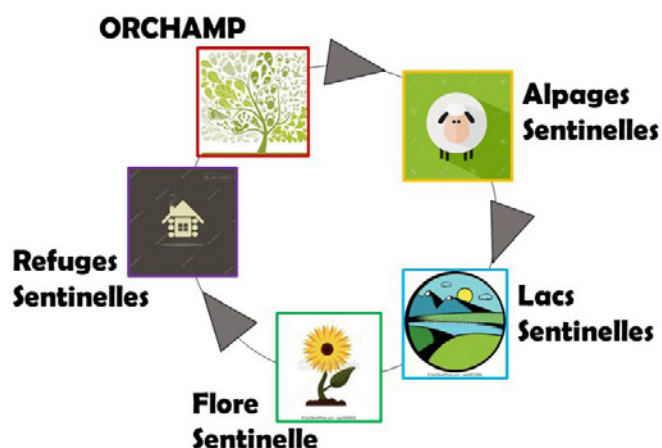
THE OCEAN, A REGULATOR AND VICTIM OF CLIMATE CHANGE

Research shows that the ocean plays a prime role in climate change, limiting its magnitude by absorbing GHGs and heat. However, the ocean is also changing as a result, with warming, acidification and disturbance of marine ecosystems. The CNRS endeavours to contribute to the United Nations Decade of Ocean Science through UNESCO to understand how these changes can affect the various services rendered to humanity: climate regulation, resources (fisheries, etc.), and culture and ecosystems (corals, mangroves, etc.). The CNRS is also a founding member of the Ocean-Climate Platform.

Find out more: ocean-climate.org

THE SENTINELS OF THE ENVIRONMENT

The Sentinels of the Alps project is a partnership initiative working on the development, sharing and integration of systems to observe the relationships between climate, humankind and biodiversity on the scale of the French Alps. The project aims to define and implement a coherent observation strategy based on synergies and the functional integration of five existing sentinel systems covering lakes, mountain pastures, meadows, flora and refuges. The project is supported by the Zone Atelier Alpes and receives funding from the Agence Française de la biodiversité (2018–2020).



Find out more: www.za-alpes.org

THE KERMAP START-UP

Based on multidisciplinary skills, a permanent technological watch and satellite and airborne data, KERMAP provides expertise on climate change adaptation, vegetation monitoring, carbon storage, air pollution and urban comfort. It also develops innovative solutions to facilitate the ecological transition of territories.

Find out more: www.kermap.com

THE CLIMALEX RESEARCH GROUP

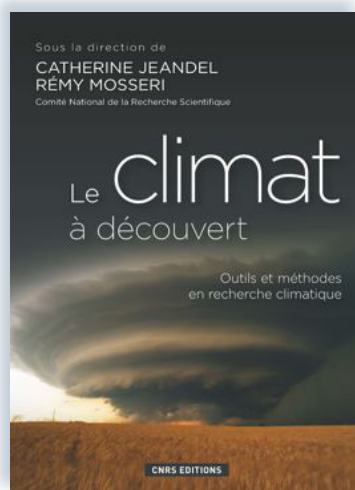
This 'Climate and Standards: Interdisciplinary Perspectives' group of researchers from the field of law works to further thinking on the normativity at work in the field of climate change.

Find out more: climalex.wordpress.com

CLIMERI RESEARCH INFRASTRUCTURE

This provides the community with the results of regional and large-scale climate simulations. These results feed into many multidisciplinary projects and climate services. There is greater exploitation of the data via the Copernicus climate service at the European level, which brings together information on past, present and future climate, as well as tools that facilitate the development of mitigation and adaptation strategies for decision-makers. At national level, the results and data (observations and simulations) of the research project fuel the DRIAS service hosted at Météo-France.

Find out more: climeri-france.fr



The CNRS has published books to further understanding of past, present and future climate phenomena. The book on adaptation was published in partnership with Comité 21, which brings together non-state actors in environment and sustainable development.

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