

MedECC: Towards an improved scientific assessment of climate change and its impacts in the Mediterranean Basin

A network of Mediterranean Experts on Climate and Environmental Change (MedECC) is currently constituting itself with the aim to provide sound scientific information about environmental issues of concern for the Mediterranean region.

Context and rationale

Recent anthropogenic climate change is manifest in the Mediterranean, alongside other changes in the environment such as sea and air pollution, soil degradation and biodiversity loss. The shared history and the close connections between countries and regions bordering the Mediterranean call for strong cooperation with respect to adaptation to, and mitigation of ongoing environmental change. Yet a comprehensive assessment of recent trends, likely future development and the consequences of environmental change for natural systems, the economy and human well-being, including questions of poverty and migrations, is still lacking. Existing assessments cover only parts of the region in disconnected chapters (e.g. the reports of the IPCC or the World Bank) or only some topics (e.g. climate variability). While substantial scientific knowledge exists (e.g. in leading research institutions around the Mediterranean, from large European projects such as CIRCE, or MedCLIVAR), a coherent and comprehensive synthesis and assessment of recent and expected changes for environmental policy is lacking.

There is widely shared concern that, in the Mediterranean region, research activities, monitoring data and other knowledge generation about climate change and other environmental changes are insufficiently coordinated. Observational data and research findings are not easily accessible and therefore insufficiently used to inform climate and other environmental policy at regional, national and local levels. The large difference in monitoring and research effort in different parts of the region is creating unbalanced information. These gaps have been pointed out on many occasions, e.g., by the Union for the Mediterranean (UfM), by the MEDCOP21 Conference organized in June 2015 in Marseille, and on other occasions.

A network of Mediterranean Experts on Climate and Environmental Change

In order to prepare the ground for improved assessments and a comprehensive synthesis of global change knowledge in the Mediterranean region, a side event was organised during the Conference 'Our Common Future under Climate Change' (CFCC) in Paris, France, July 9, 2015, gathering about 40 scientists and representatives of the supporting institutions. The goal and conclusion of the event was to build a network of scientists working towards a regional science-policy interface for climatic and other environmental changes across the Mediterranean.

Implementing this mechanism would meet a number of existing intentions by important stakeholders, such as the Draft Mediterranean Strategy for Sustainable Development (MSSD 2016-2025), the Regional Framework for Adaptation to Climate Change in the Mediterranean (UNEP/MAP), as well as the proposal included in the 'Agenda of Positive Solutions' approved at MEDCOP21. Support is also expected from the French MISTRALS

research programme, other initiatives, such as Med-Cordex, and institutions including the 'Centro Euro-Mediterraneo sui Cambiamenti Climatici' (CMCC, Italy), the Energy, Environment and Water Research Center at the Cyprus Institute (EEWRC), the French 'Laboratoire d'Excellence Objectif Terre—Bassin Méditerranéen' (LABEX OT-Med). Regional expert networks are likely to cooperate, e.g. the 'Grup d'Experts en Canvi Climàtic de Catalunya' (GECCC, Catalonia), or the 'Groupe Régionale des Experts sur le Climat en Provence-Alpes-Côte-D'Azur' (GREC-PACA, France).

A possible structure for MedECC

MedECC will be based on an open and independent international scientific expert network working towards a mechanism of on-going support for decision-makers and the general public on the basis of available scientific information and on-going research. Membership will be open to scientists working on different aspects of climate and environmental changes with appropriate personal academic credentials, independent of their nationality, institutional affiliation and of their national government. MedECC aims to cover all major geographical sub-regions of the Mediterranean area, defined as the ensemble of countries bordering the Mediterranean Sea, including Jordan and Portugal (the Mediterranean Sea, their land and sea territories).

Its thematic scope should include all aspects of climate change and biodiversity conservation, embracing the domains of IPCC and IPBES. These include the physical and chemical characteristics of the atmosphere and the ocean, all aspects of natural and human systems potentially impacted by the changing environment, and the economic and social solutions in the form of adaptation and mitigation.

The governance of MedECC needs to be developed. It must ensure that work is fully oriented towards the highest possible scientific standards, with full participation of experts from all involved regions and required scientific disciplines. Appropriate interaction with public and private decision-makers and stakeholders needs to be developed, through a formally established science-policy interface.

Funding of MedECC activities will be sought through several sources once the mechanism is formally established. Similar to IPCC and IPBES, it is expected that research institutes and individual scientists provide their knowledge on a voluntary basis. It is recognised that scientists from low-income countries may need additional financial support for their contribution.

MedECC Aims

- 1) To gather the scientific community working on climate change and its impacts in the whole Mediterranean basin. This includes building a bridge between existing

research structures and programs and facilitating data-sharing through existing or new platforms.

- 2) To update and consolidate the best scientific knowledge about climate and environmental change in the Mediterranean basin and render it accessible to policy-makers, key stakeholders and citizens.
- 3) To contribute to future IPCC, IPBES or related assessments in the Mediterranean basin.
- 4) To bridge the gap between research and decision-making, contributing to the improvement of policies at national, regional, and local level by providing consolidated scientific assessments on particular issues and by responding to requests by decision-makers.
- 5) To identify gaps in the current research on climate change and its impacts in the Mediterranean and interact with funding agencies for the development of new research programs to fill these gaps.
- 6) To help building the capacity of scientists from Southern and Eastern Mediterranean Countries (SEMCs) at the international level and standards; encouraging training, research and development efforts in these countries.

Products

The intended outputs of MedECC, depending on participation and financial support, may include:

- 1) Regular and comprehensive “state of the art” reports about climate and environmental change for the entire Mediterranean basin, including summaries for decision-makers for approval by government representatives.
- 7) Specific reports on demand by decision-makers on specific issues, sectors or scientific domains.
- 8) Scientific workshops co-hosted by MedECC and research institutions or MedECC supporting institutions.
- 9) Training for decision makers, professionals and other stakeholders involved in environmental change mitigation and adaptation.
- 10) Dialogue between the scientific community, decision makers and stakeholders on specific issues of environmental change in the Mediterranean basin.

Structure

The MedECC is a voluntary membership expert group with a flexible structure (see scheme – this is a proposed structure requiring further discussion):

- 1) Steering committee
- 11) Advisory board (stakeholders, supporting institutions, scientist representatives)
- 12) Members (experts, not representing institutions)
- 13) A formalized assembly, constituting the mechanism of exchange with decision-makers

Membership

Approx. 150 experts have expressed interest to join MedECC. Once established, membership shall remain open

to all scientific experts working on climate and environmental change from the natural sciences, social sciences and/or a humanities perspective. Members must have appropriate personal academic credentials, independent of their nationality or institutional affiliation. The governance of MedECC will be responsible to confirm these participations and enlarge the membership basis, especially with scientists from the Southern and Eastern rims of the Mediterranean Basin.

Ad hoc Steering Committee

A group of scientists has taken the initiative for the July 2015 Paris meeting and initial drafting of the documents – these currently act as Ad hoc Steering Committee until the opportunity has been found to select a committee with better thematic and geographic coverage of Mediterranean environmental science.

Joël Guiot (CEREGE, Aix-en-Provence, France), Wolfgang Cramer (IMBE, Aix-en-Provence, France), Ghani Chehbouni (IRD, Rabat, Morocco), Jean-Pierre Gattuso (LOV, Villefranche, France), Manfred Lange (Aglantzia, Cyprus), Piero Lionello (University of Salento, Italy), Riccardo Valentini (CMCC, University of Tuscia, Viterbo, Italy), Elena Xoplaki (University of Gießen, Germany / Greece).

Supporting institutions

Based on rules that need to be established, MedECC will closely interact with different public and private institutions concerned by climate change and other environmental issues. It currently benefits from support from Plan Bleu (UNEP/MAP), the World Bank Center for Mediterranean Integration (CMI), the Government of the Region Provence-Alpes-Côte d’Azur, the Advisory Council for the Sustainable Development of Catalonia of the Government of Catalonia (CADS), and the Institute of Research for Development (IRD, France). The collaboration of the Union for the Mediterranean and its Expert Group on Climate Change will be welcomed by MedECC members and current supporting institutions.

During 2016, MedECC will seek opportunities to organize a larger assembly.