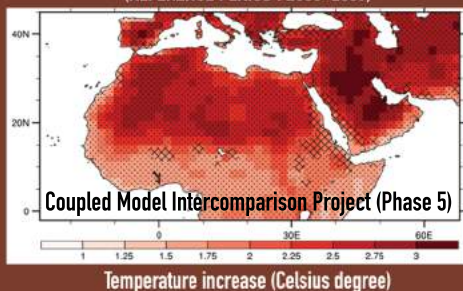


A population of about 400 million is affected by dust storms, dryness, heat extremes and unparalleled air pollution in the “EMME” – Eastern Mediterranean and Middle East region, with severe environmental, health and socio-economic effects. Identified as a global Climate Change “hot spot”, EMME is facing adverse impacts ranging from extreme weather events to poor air quality, with increasing intensity in the coming decades.

Temperature projection in 2050 (summertime)  
(REFERENCE PERIOD : 2000-2009)



“EMME-CARE” provides scientific, technological and policy solutions through the establishment of a world-class Research and Innovation Centre of Excellence, focusing on environmental challenges. To address these, the existing Atmosphere and Climate Division of the Cyprus Institute will be upgraded, its partnerships with world-renown institutes will be strengthened, and its status and contribution in regional/global networks of the field will be enhanced.

With competitive Horizon 2020 funding, as well as national and own resources, EMME-CARE will implement a combination of Research, Education, and Innovation activities, which will involve laboratory studies, instrument development, continuous comprehensive atmospheric observations, field experiments and computer modelling of the regional climate and chemical composition of the atmosphere. The programme focuses on the atmospheric environment (greenhouse gases, the water cycle, extreme weather, atmospheric dust and air pollution) and will address climate change and air pollution impacts.

EMME-CARE fully utilizes the strategically enabling geopolitical location of Cyprus to create and foster a gateway between Europe and the Middle East. By building on a critical mass of top scientists and engineers, promoting innovation via regular staff exchanges, networking regionally (Middle East) and globally, transferring knowledge and technology, and by supporting entrepreneurship and spinoffs, EMME-CARE will address challenges by furthering scientific leadership and excellence.



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# EMME – CARE

EASTERN MEDITERRANEAN MIDDLE EAST  
CLIMATE & ATMOSPHERE RESEARCH CENTER



funded by



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CEA (France)  
Prof. Philippe CIAIS  
Greenhouse Gases monitoring  
& modelling



University of Helsinki, UHEL  
(Finland)  
Prof. Markku KULMALA  
EU Research Infrastructure & aerosols

## INTERNATIONAL NETWORKS



World Meteorological Organization - Global Atmospheric Watch

Aerosol Robotic Network



European Monitoring and Evaluation Programme

Aerosol, Clouds, and Trace gases Research Infrastructure



ICOS

Integrated Carbon Observation System

Research for Global sustainability



Mediterranean Experts on Climate and Environmental Change

Earth Networks



Middle East North Africa Coordinated Regional Climate Downscaling Experiment

## TOPICS

### Science

- Early warning systems for dust storm and extreme weather events
- Air quality monitoring & management (indoor/outdoor)
- Promotion/coordination of a regional atmospheric network (pollution, climate)
- High-resolution Regional climate projections (2050, 2100)
- Climate Change governance and impacts (health, economy, society)

### Education & Training

- Accredited Master & Doctoral programs in Meteorology and atmospheric sciences
- Training (WMO sponsored) sessions on climate change, weather forecasting
- Hands-on practice on atmospheric instrumentation
- Knowledge exploitation and transfer

### Innovation

- Early warning systems for dust storm and extreme weather events
- New cost-effective (portable) atmospheric sensors
- Unmanned Aerial Vehicles (drones) in meteorology and air quality
- Regional (city-scale) Carbon (emission) footprint
- Regional Air Quality forecasting



**EMME-CARE**  
EASTERN MEDITERRANEAN  
MIDDLE EAST - CLIMATE &  
ATMOSPHERE RESEARCH CENTRE

## GOALS

Creation of a new **Center of Excellence**

**CARE-C** Climate and Atmosphere REsearch Centre

