

PAST4FUTURE

AT A GLANCE

Title:
Climate change – Learning from the past climate

Instrument:
FP7. SP1-Cooperation. Collaborative project. Large-scale integrating project. FP7-ENV-2009-1.

Total Cost:
9,233,877.60 €

EC Contribution:
6,647,909.00 €

Duration:
60 months

Start Date:
January 1, 2010

Consortium:
22 partners from 12 countries

Project Coordinator:
University of Copenhagen

Project Web Site:
www.past4future.eu

Key Words:
Climate change; abrupt change; interglacial; sea level; sea ice; ocean circulation; thresholds; greenhouse gases; solar insolation; volcanic forcing; ice sheets.

THE CHALLENGE

Paleo-climatic records contain a wealth of information on the stability and variability of climate and its ability to perform abrupt changes. The challenges for the multi-disciplinary Past4Future team are to better understand the climate system, to improve the prediction of future climate changes and to advance the knowledge on abrupt climate changes in interglacial periods.

The Past4Future program will address the following challenging key questions:

- What is the risk of abrupt changes in interglacials?
- Can we understand the greenhouse gas records of the interglacial periods?
- What is the risk of rapid collapse of ice sheets?
- Were there significant changes in ocean circulation during previous interglacial periods?

PROJECT OBJECTIVES

The key objective for Past4Future is to provide the answers to the following key questions:

- What are the dynamics of the climate over interglacial periods?
- What causes climate changes and abrupt changes over the course of interglacial periods?
- What causes climate changes and abrupt changes over the course of interglacial periods?
- Can we understand the greenhouse gas records of the interglacial periods?
- What can the past tell us about risks for climate changes/threats in the future?



METHODOLOGY

The majority of program resources is targeted towards science areas that will result in the greatest possible strengthening of the understanding and quantification of Earth system dynamics and feedback processes of potential relevance for climate change and possible abrupt changes in the coming centuries. Past4Future is designed to build on previous and nationally funded work in a synergistic fashion.

New investigations of already obtained paleo-material, use of existing paleo-archives, strong collaboration between European and international research programs with new paleo-records, and the inclusion of key experts to operate and develop climate and Earth system models, will result in a strong and integrating program.

EXPECTED RESULTS

The program results will strengthen our understanding the responses of the Earth system in warmer climate, and will improve predictions of climate change risks and possible abrupt changes in the coming centuries. Past4Future will deliver knowledge that is of particular relevance from a European perspective. The need to predict future climate change strongly influences the prospects of both citizens and policy makers of the European Union. The program will inform the international debate on climate system stability and the dissemination of results will be targeted to both citizens and governmental and non-governmental stakeholders. Past4Future will leave a legacy of improved understanding of past drivers of sea level and sea ice changes as well as of greenhouse gas concentrations.

PROJECT PARTNERS	
# 1 Københavns Universitet, Denmark [COORDINATOR]	# 12 Max Planck Gesellschaft zur Förderung der Wissenschaften E.V., Germany
# 2 Unifob AS, Norway	# 13 Vereniging voor Christelijk Hoger Onderwijs Wetenschappelijk Onderzoek en Patiëntenzorg, the Netherlands
# 3 Centre National de la Recherche Scientifique, France	# 14 Commissariat à l'Énergie Atomique, France
# 4 Aarhus Universitet, Denmark	# 15 University College London, United Kingdom
# 5 Universität Bern, Switzerland	# 16 Consiglio Nazionale delle Ricerche, Italy
# 6 Agencia Estatal Consejo Superior de Investigaciones Científica, Spain	# 17 Alfred-Wegener-Institut für Polar- und Meeresforschung, Germany
# 7 Universitat Autònoma de Barcelona, Spain	#18 The Chancellor, Master and Scholars of the University of Cambridge, United Kingdom
# 8 Natural Environment Research Council, United Kingdom	# 19 PAGES Association, Switzerland
# 9 University of Bristol, United Kingdom	# 20 Université du Québec à Montréal, Canada
# 10 Université Catholique de Louvain, Belgium	# 21 East China Normal University ECNU, China
# 11 Universität Bremen, Germany	# 22 University of Ottawa, Canada

