

MONARCH-A

Monitoring and Assessing Regional Climate change in High latitudes and the Arctic

UNDERSTANDING CLIMATE CHANGE IN THE ARCTIC

With permafrost melting, glaciers receding and sea ice disappearing, nowhere on Earth is climate change more present than in the Arctic. However "before and after" photos of glaciers are not enough. The project MONARCH-A seeks to produce a dedicated and comprehensive information package showcasing Arctic climate change in a 30-50 years perspective.

The Arctic is warming, and data from the first decade of the 21st century show that the speed is accelerating. What happens in the Arctic has global consequences, since melting ice sparks raising sea levels, and potentially impacts ocean circulation that transport heat from the tropics to higher latitudes, including Europe.

In this complex context of different data measurements, there is a need for a global overview of Essential Climate Variables (ECVs) over time.

MONARCH-A aims at furthering such an overview, by bringing diverse climate indicators, such as sea levels, permafrost extension, snow cover extension, ice sheet elevation, sea ice drift and volume, and ocean current measurements together into a single information package on climate change in the Arctic. Moreover, by re-analyzing old data, the project will be able to harmonize datasets and establish an overview of changes in terrestrial carbon and water fluxes, sea levels and ocean circulation in the Arctic in a 30-50 years perspective. Such an overview will ensure new scientific input for more informed decisions to be taken at political level, as international environmental policies addressing climate change are progressively fine tuned in years to come.



JOHNNY JOHANNESSEN
IS PROJECT COORDINATOR



staphy © Fotolia.com

MONARCH-A provides for enhanced reanalysis of Essential Climate Variables (ECV) in the Arctic region. The retrospective time scale of data analysed is between 30-50 years in this project.

QUESTIONS & ANSWERS

What do you want to achieve with this project?

We aim to generate a dedicated information package tailored to a subset of multidisciplinary Essential Climate Variables and their mutual forcing and feedback mechanisms associated with changes in terrestrial carbon and water fluxes, sea level and ocean circulation, and the marine carbon cycle in the high latitude and Arctic regions.

Why is this project important for Europe?

Rapid decreases in Arctic Sea ice concentration and decreases in sea surface carbonate saturation prove that northern hemisphere high latitude regions are highly susceptible to climate change. The scientific rationale of MONARCH-A is to inform Europeans about the consequences of these changes.

How does your work benefit European citizens?

MONARCH-A achievements may have strategic benefits for Europe. Recently, the European Commission adopted a Communication on the Arctic region that highlights the effects of climate change and human activities, and alludes to the need for a systematic and coordinated response to rapidly emerging challenges.

MONARCH-A

Monitoring and Assessing Regional Climate change in High latitudes and the Arctic



LIST OF PARTNERS

- Stiftelsen Nansen Senter for Fjernmåling, Norway
- The University of Sheffield, England
- Universitat Hamburg, Germany
- Centre National de la Recherche Scientifique, France
- Scientific foundation Nansen International Environmental and Remote Sensing Center, Russia
- Universitetet i Bergen, Norway
- Danmarks Tekniske Universitet, Denmark
- Institut Francais de Recherche pour l'Exploitation de la Mer, France

COORDINATOR

Stiftelsen Nansen Senter for Fjernmåling, NERSC, Norway

CONTACT

Prof. Johnny JOHANNESSEN
Tel: +47 (55) 205800
E-mail: Johnny.Johannessen@nersc.no

PROJECT INFORMATION

Monitoring and Assessing Regional Climate change in High latitudes and the Arctic (MONARCH-A)
Contract no: 242446
Starting date: 01/03/2010
Duration: 36 months
EU Contribution: € 3.888.201,60
Estimated total cost: € 2.884.484

