



European Commission's 7th Framework Programme
Grant Agreement No. **226520**

Project acronym: **COMBINE**

Project full title: **Comprehensive Modelling of the Earth System for Better
Climate Prediction and Projection**

Instrument: Collaborative Project & Large-scale Integrating Project

Theme 6: *Environment*

Area 6.1.1.4: *Future Climate*

ENV.2008.1.1.4.1: *New components in Earth System modelling
for better climate projections*

Start date of project: 1 May 2009

Duration: 48 Months

Milestone Reference Number and Title: M5.1 Sea-ice initialisation

Lead work package for this milestone: WP5

Organization name of lead contractor for this milestone: METO

Due date of milestone: 30 April 2011

Actual submission date: 30 April 2011

M5.1: Sea-ice initialisation

Sea ice is an important component of the climate system. In addition to high latitude impacts, sea ice influences climate sensitivity through the ice-albedo feedback and the meridional ocean circulation. There is also growing evidence that sea ice anomalies may influence large-scale atmospheric circulation patterns, including the North Atlantic Oscillation. The representation of sea ice in climate models will therefore be improved in WP4, and detailed impacts studies in WP8 will include the Arctic region. To gain maximum benefit from these improvements and assessments it is important that forecasts start from realistic sea ice distributions. Previous decadal forecasts, however, have not explicitly initialized sea ice.

The objectives of M5.1 are to implement the initialisation of sea ice for decadal forecasts. This has been achieved by all partners (see Table 1). Full details of the implementation and preliminary assessment of sea ice initialisation is reported in deliverable D5.2.

Partner	Model	Sea ice initialisation
UCL	LIM2	Full field
SMHI	EC-Earth	Full field Anomaly
MF-CNRM	CNRM-CM5 (GELATO)	Full field
METO	HadGEM3 (CICE) HadCM3	Full field Anomaly

Table 1: Summary of sea ice initialisation implemented in a range of models