

Europe, climate change and ENSEMBLES

Briefing note No. 3

The Met Office has led a five-year EC-funded research project into the likely effects of climate change on Europe. This study, involving 66 partners across Europe and beyond, is the biggest ever integrated climate change research project. The study will report its key findings in November 2009 at a final symposium at the Met Office.

European cities temperature and rainfall data

A major theme of the research programme was to construct new temperature and rainfall datasets for Europe, using a 25 km grid. Seasonal projections of temperature and rainfall anomalies for 32 capital cities have been calculated for the period 2021 to 2050 — giving a mid-point of 2035, which is well within the lifetimes of many of us today. These have been compared to a benchmark temperature and rainfall based on 1961-90 data.

Conditional probability density functions were constructed for the cities to reveal changes in both the mean and extremes, which in this case refers to the ‘tail’ of the distribution. It does not mean the very rare and catastrophic events.

Not every European capital is included but a total of 32 locations have been studied to provide a comprehensive picture of what Europe’s climate could be like in the relatively near future. For example, Valetta, the capital of Malta, is excluded because the island is too small to be resolved on the 25 km grid.

Examples of the temperature and rainfall changes by season at Copenhagen are below. The seasons are represented by blue for winter; green for spring; red for summer and yellow for autumn:

