

Climate change predictions on track: Victoria University expert

A new report co-authored by David Frame, Director of the New Zealand Climate Change Research Institute at Victoria University, has confirmed that climate change predictions made 20 years ago are proving reasonably accurate.

Professor Frame and Dr Dáithí Stone, from the Lawrence Berkeley National Laboratory in California, have had their findings published in the latest edition of *Nature Climate Change*.

The report compares predictions from the first Intergovernmental Panel on Climate Change (IPCC) Assessment Report, published in 1990, with global climate change data gathered over the past 20 years.

Their analysis suggests that the global climate is responding largely as predicted by the first IPCC report, which included a range of predictions for global temperature increase to the year 2030.

Half-way through that period, data show that the actual global mean surface temperature increase was 0.35–0.39 degrees Celsius, which is in reasonable agreement with the 1990 predictions.

This is in spite of several climate-altering events that were not predicted, such as the eruption of Mount Pinatubo in 1991, the collapse of the Soviet bloc industry in the 1990s, and the recent rapid, fossil-intensive growth in economies such as Asia.

Professor Frame and Dr Stone have taken a common approach to characterising the natural multi-annual and decadal variability in climate models, and compared the results from these models against observed changes.

From the resulting study, it seems highly unlikely that recent changes can be accounted for by natural variability alone, even if the current generation of models significantly underestimated natural variations.

Professor Frame says that although the timescales associated with climate change are inconvenient for the evaluation of climate predictions, the 1990 prediction is sufficiently long ago that scientists are now in a position to begin checking it against data.

'It is important for scientists to go back and see how early climate change predictions are going.

'What we've found is that these early predictions seem pretty good, and this is likely due to the climate responding to concentrations of greenhouse gases in the earth's atmosphere at a rate broadly in line with what scientists in 1990 expected.'

Professor Frame, who is Vice-President of New Zealand Association of Scientists, is one of a number of researchers including Professor Tim Naish and Associate Professor James Renwick at Victoria University who are contributing to the work of the IPCC on a voluntary basis, as lead authors for the Panel's 5th Assessment Report.

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