



Mr Malcolm Roberts
180 Haven Road
Pullenvale Qld 4069

By email catalyst@eis.net.au

25 March 2010

Dear Mr Roberts,

Thank you for your letter date 12 February 2010 addressed to Dr Megan Clark. Dr Clark has asked me to respond on her behalf, and I have addressed the three main issues you raise in turn below.

1. Inquiry into IPCC

CSIRO contributed extensively to the IPCC. More than 100 Australian experts, authors, contributors and reviewers have been involved in the IPCC process since 2001, including 35 CSIRO scientists. They were among more than 3000 scientists who contributed to the understanding of climate change impacts and adaptation, risk, and opportunities for mitigation collated in 2007 by the IPCC.

The IPCC does not conduct research on its own: its core activity is to review and assess the most recent research relevant to the understanding of climate change.

The IPCC has responded to accusations of criticism on their website at <http://www.ipcc.ch>. On this website there is information of an Independent Review of IPCC Processes and Procedures. CSIRO welcomes an open, independent and balanced review of the IPCC, as the process of peer review is an key element of science.

2. Cooling

All measurements of the climate system indicate the long term warming trend is continuing. It is inappropriate to use short term data sets to determine long term trends.

Global temperature records show a warming from 1910 to 1940, followed by a slight cooling in the 1940s, a levelling off in the 1950s and 1960s, then another warming from the 1970s onward. Overall, the surface of the Earth has warmed by about three quarters of a degree Celsius over the past century. This is a statistically significant climatic change and it is very unusual in the context of the past 1700 years.

Data over the past decade provide little insight into long-term trends; the period is simply too short, so trend magnitudes are highly sensitive to the choice of start and end years. Nevertheless, the past decade has been the warmest in the instrumental record.

For more information, please see <http://www.csiro.au/news/Has-Global-Warming-Stopped.html>

3. Evidence and data showing human influence

The CSIRO and Bureau of Meteorology Snapshot provided observed trends in climate.

The temperature trend maps/time series are calculated from homogeneous or high-quality temperature datasets developed for monitoring long-term temperature trends and variability. These datasets are available for download here:

<http://www.bom.gov.au/climate/change/datasets/datasets.shtml>

(Annual dataset is used for annual maps/time series, daily dataset is used for seasonal maps/time series)

The rainfall trend maps are calculated from a high-quality rainfall dataset developed specifically for monitoring long-term trends and variability in Australian rainfall. These datasets are available for download here:

<http://www.bom.gov.au/climate/change/datasets/datasets.shtml>

CSIRO results showing human contributions to greenhouse gas emissions are provided in many publications, such as the following:

Raupach, M.R., Marland, G., Ciais, P., Le Quere, C., Canadell, J.G., Klepper, G. and Field C.B. (2007). Global and regional drivers of accelerating CO₂ emissions. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 10288-10293, doi:10.1073/pnas.0700609104. (<http://www.pnas.org/cgi/reprint/0700609104v1>)

Canadell, J.G., Le Quéré, C., Raupach, M.R., Field, C.B., Buitenhuis, E.T., Ciais, P., Conway, T.J., Gillett, N.P., Houghton, R.A., Marland, G. (2007). Contributions to accelerating atmospheric CO₂ growth from economic activity, carbon intensity, and efficiency of natural sinks. *Proceedings of the National Academy of Sciences of the United States of America*, **104**, 18866-18870, doi:10.1073/pnas.0702737104. (<http://www.pnas.org/cgi/reprint/0702737104v1>)

The Human perturbation of the carbon cycle. UNESCO/Scope/UNEP Policy Brief Number 10, November 2009. <http://www.globalcarbonproject.org/carbonbudget/08/files/091115%20USU-PB10%20CARBON%20%20BasseDEF.pdf>

The links between observed greenhouse gas increases and observed temperature and rainfall trends in Australia is provided in publications such as:

CSIRO and Bureau of Meteorology (2007): Climate change in Australia. Technical Report, 140 pp. www.climatechangeinaustralia.gov.au

Cai W and Cowan T, (2006) SAM and regional rainfall in IPCC AR4 models: can anthropogenic forcing account for southwest Western Australian winter rainfall reduction? *Geophysical Research Letters*, **33**, L24708.

I hope this helps to address your concerns.

Yours sincerely



Andrew Johnson
CSIRO Group Executive - Environment