

The IPCC WG1 2013 Report: Implications for Adaptation

Mark New

African Climate & Development Initiative
University of Cape Town

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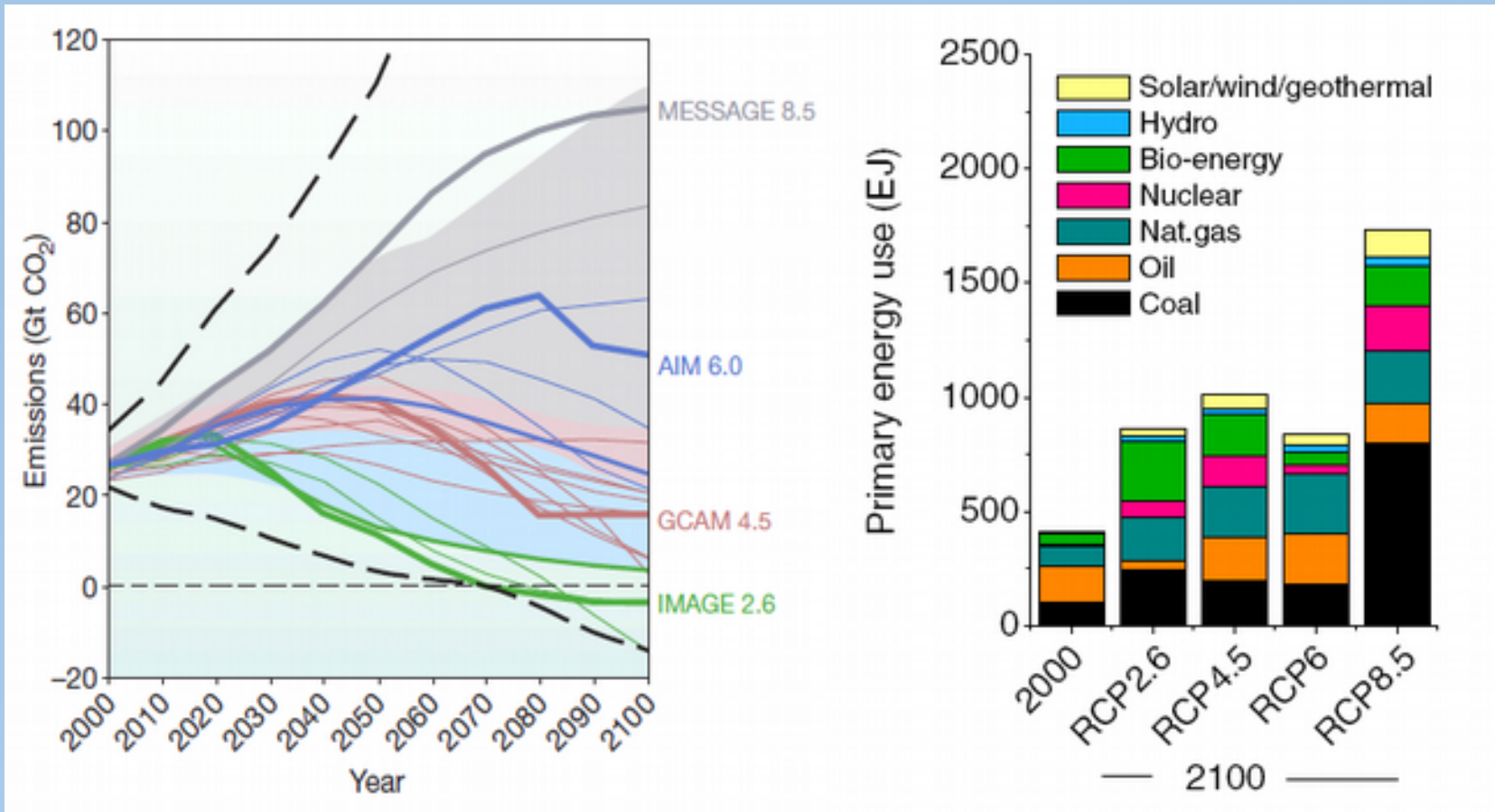


What's New in WG1 AR5

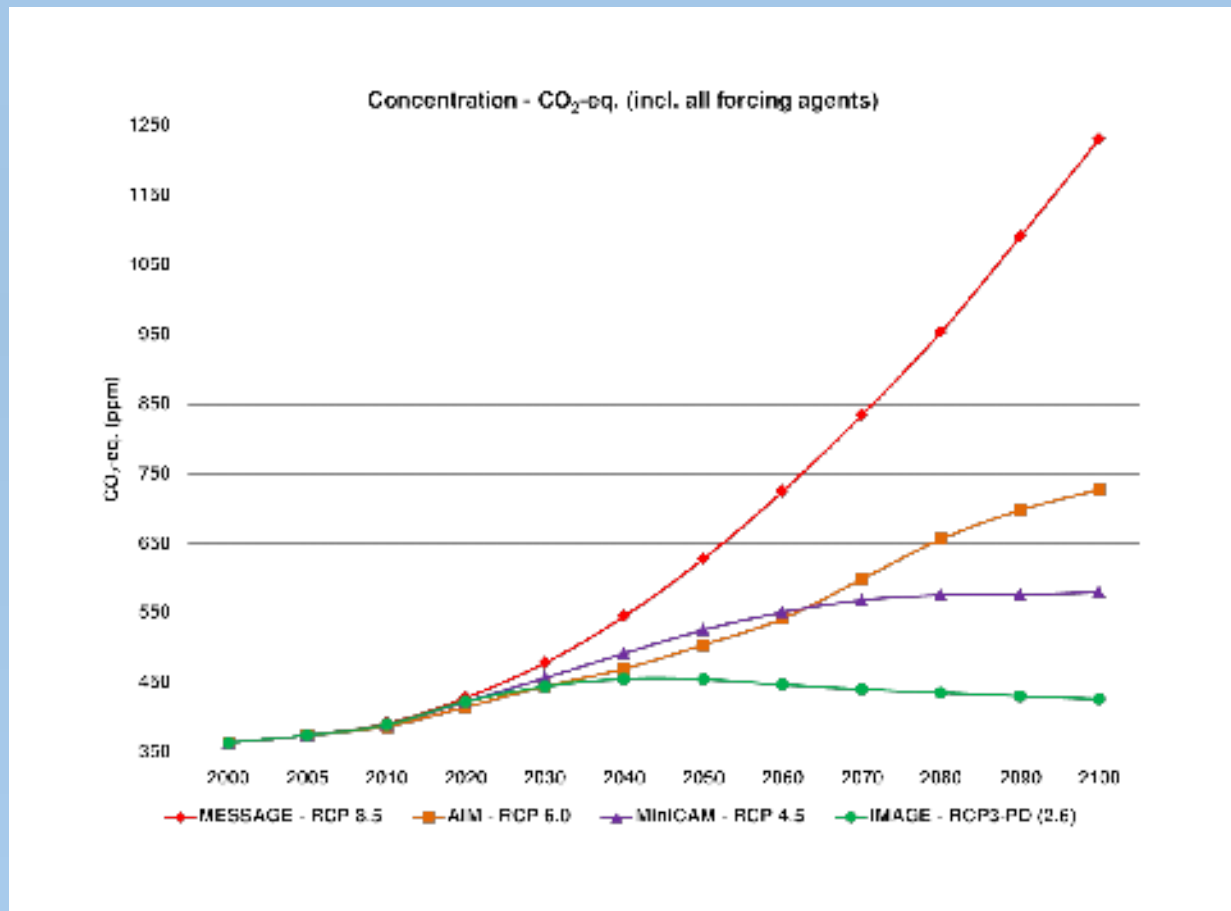
- New forcing scenarios – RCPs
- New generation of global climate models
- Near-term climate projections

- ...and do these matter for adaptation?

Representative Concentration Profiles



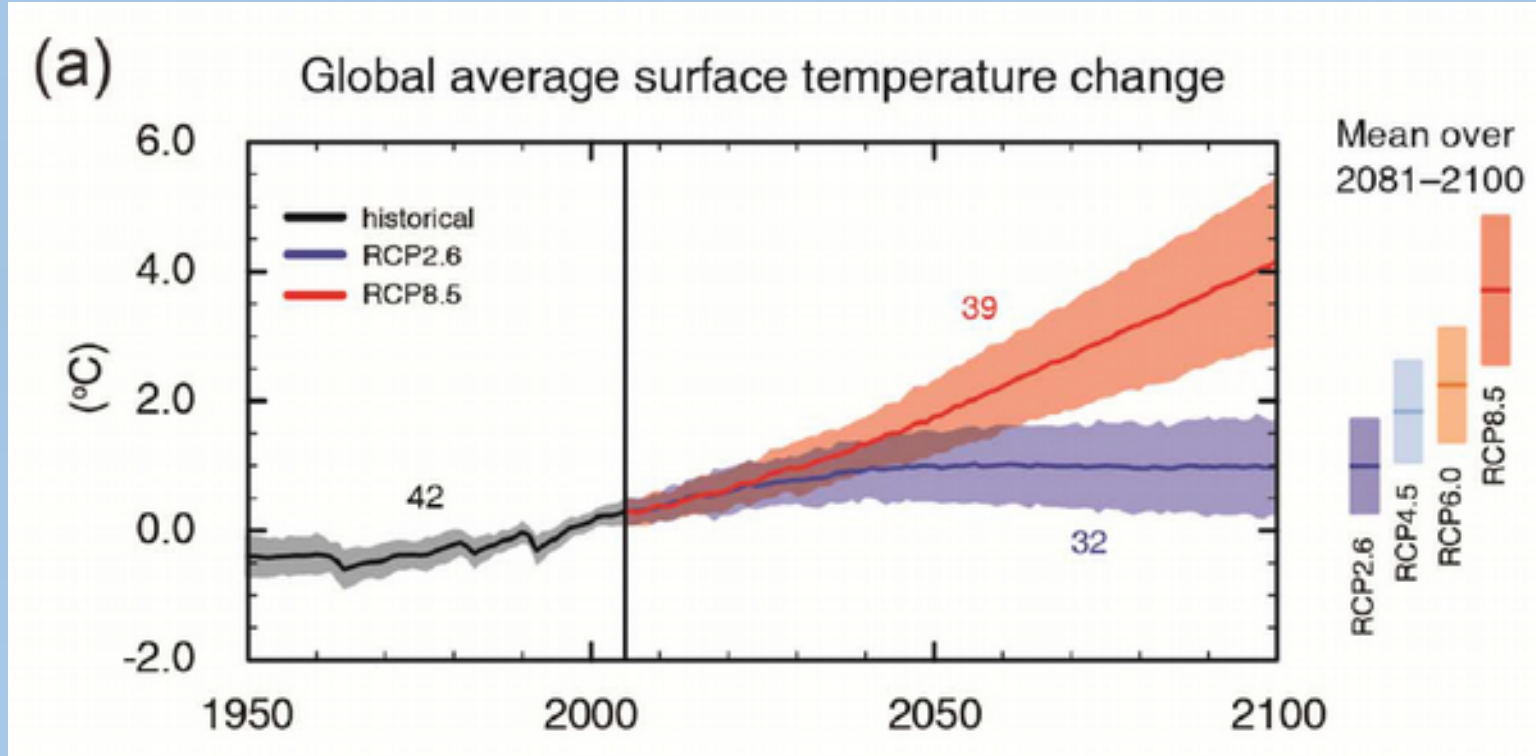
Representative Concentration Profiles



“New” Climate Models

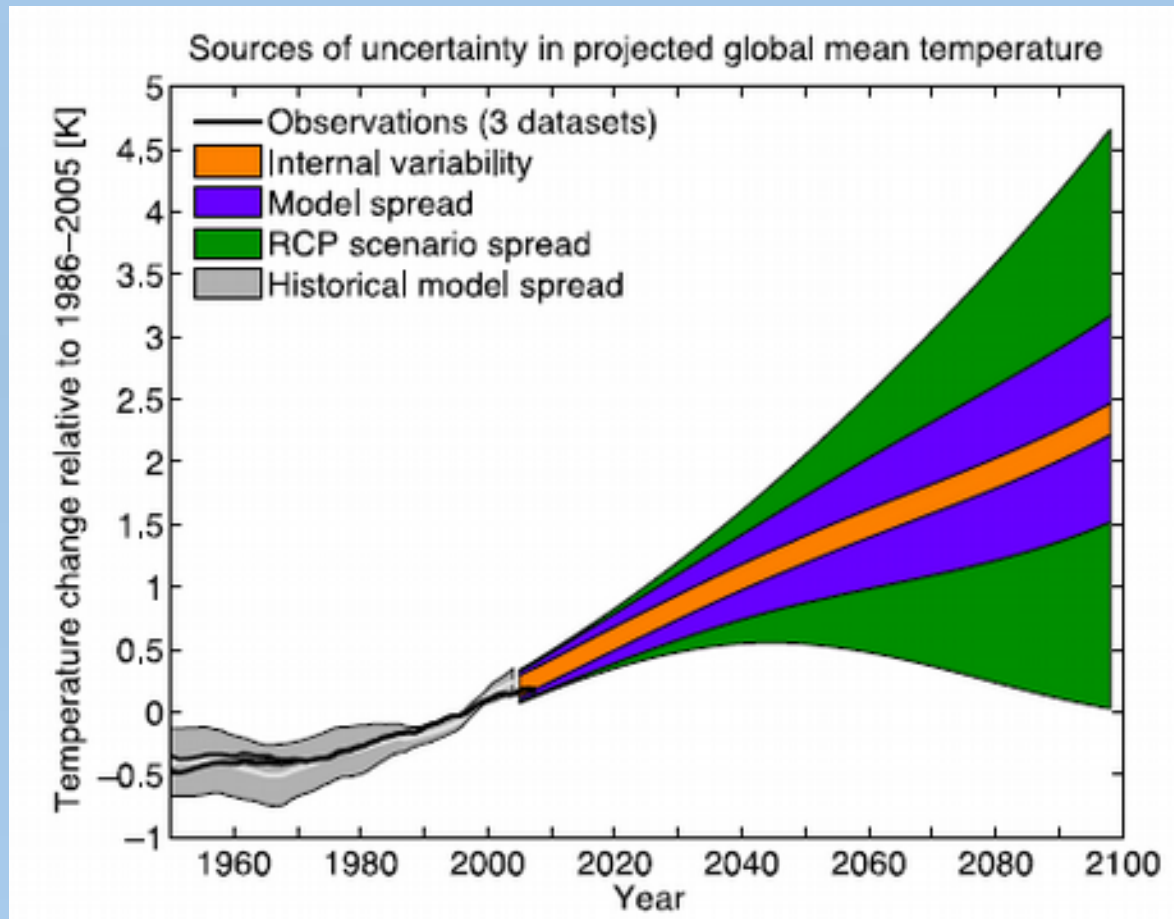
- More models – GCMs and RCMs
- Higher resolution – GCMs and RCMs
- New processes – carbon cycle, nitrogen cycle

Climate System Response

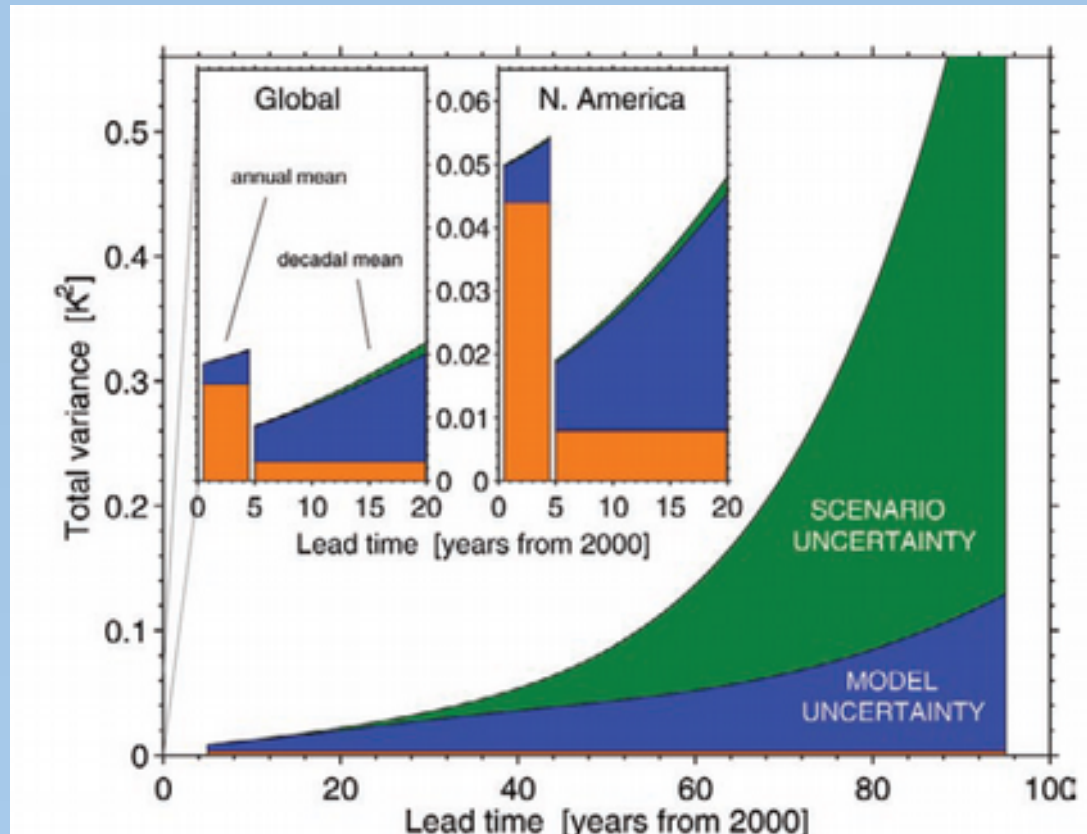


IPCC WG1 SPM 2013

Sources of Prediction Uncertainty

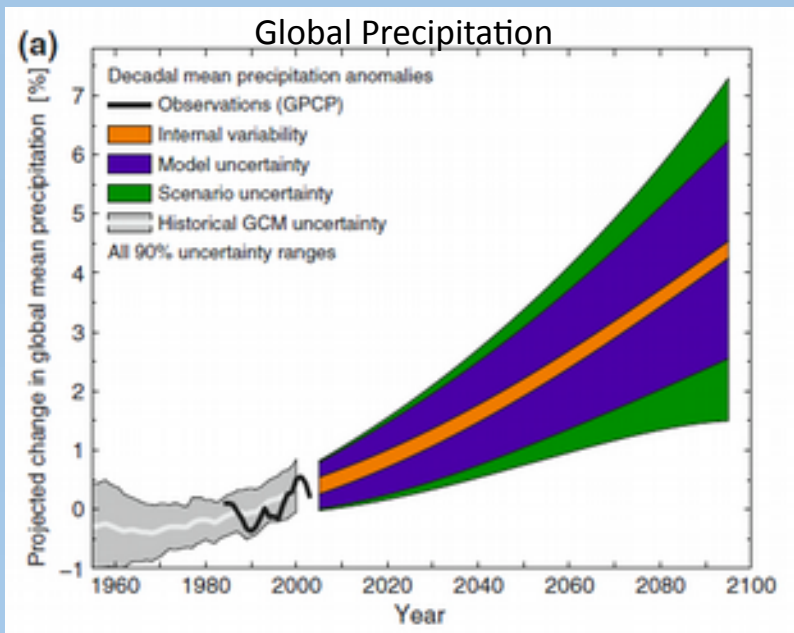


Sources of Prediction Uncertainty

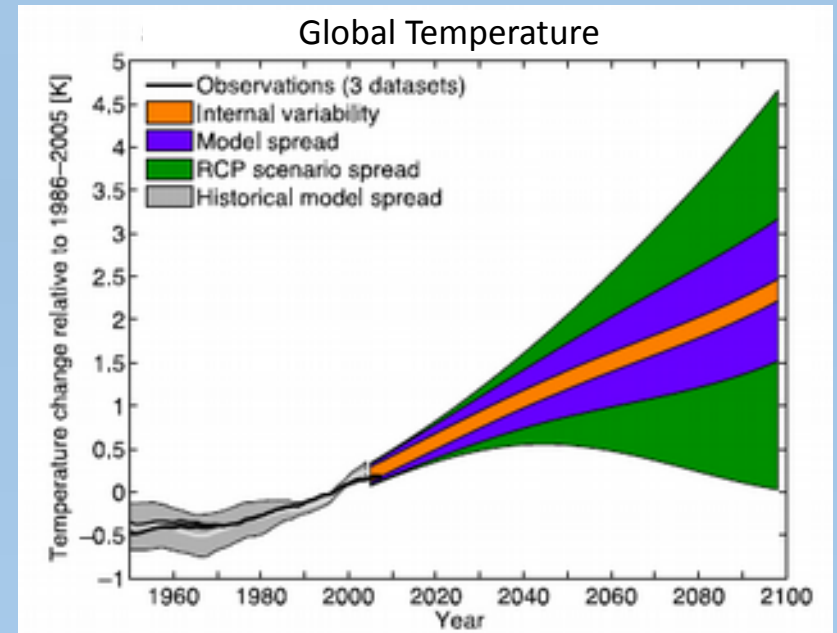


Hawkins, 2009

Sources of Prediction Uncertainty



Hawkins, 2011



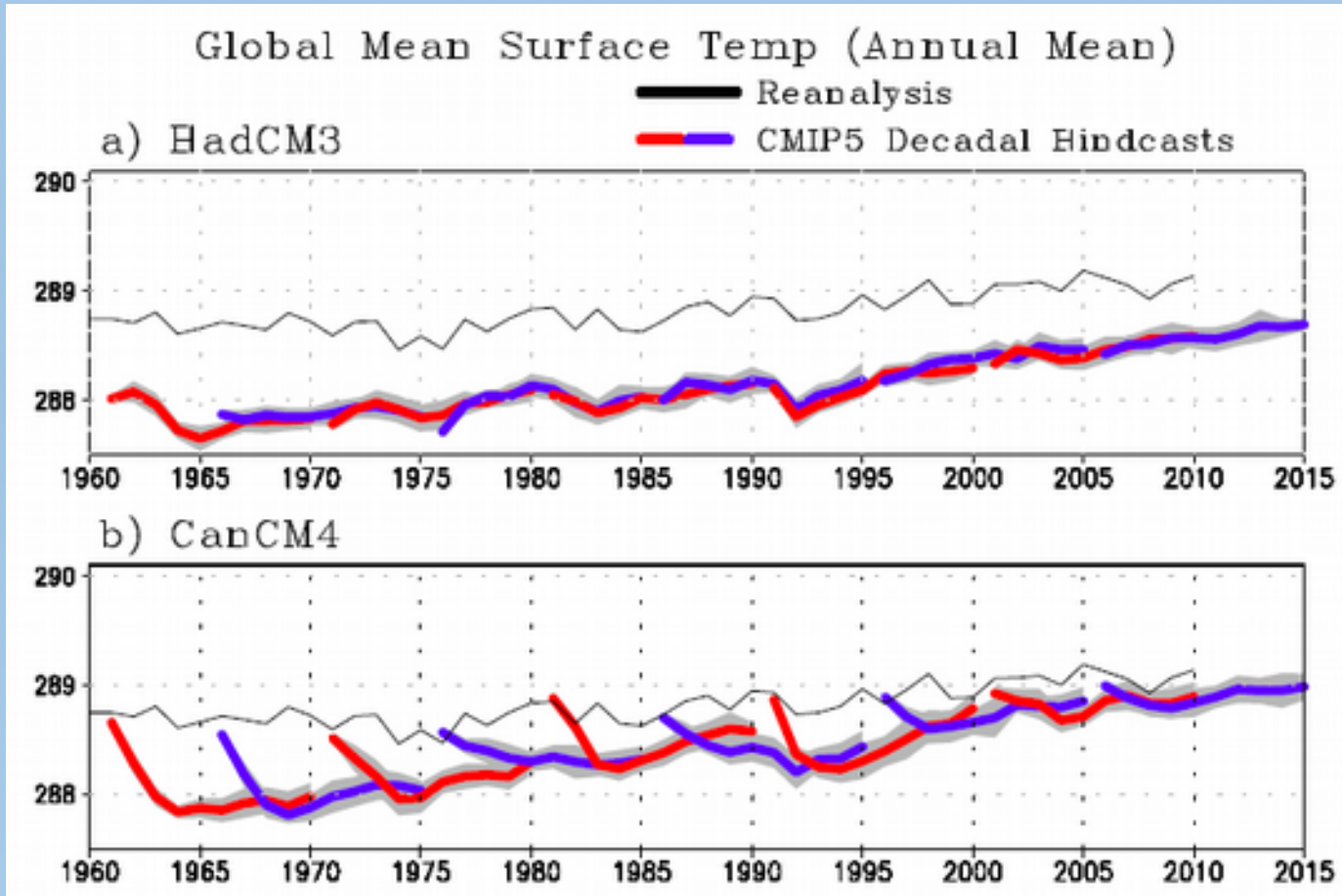
IPCC, 2013

Decadal Projections

- Addresses internal variability
- 10-year simulations, initialised with observations



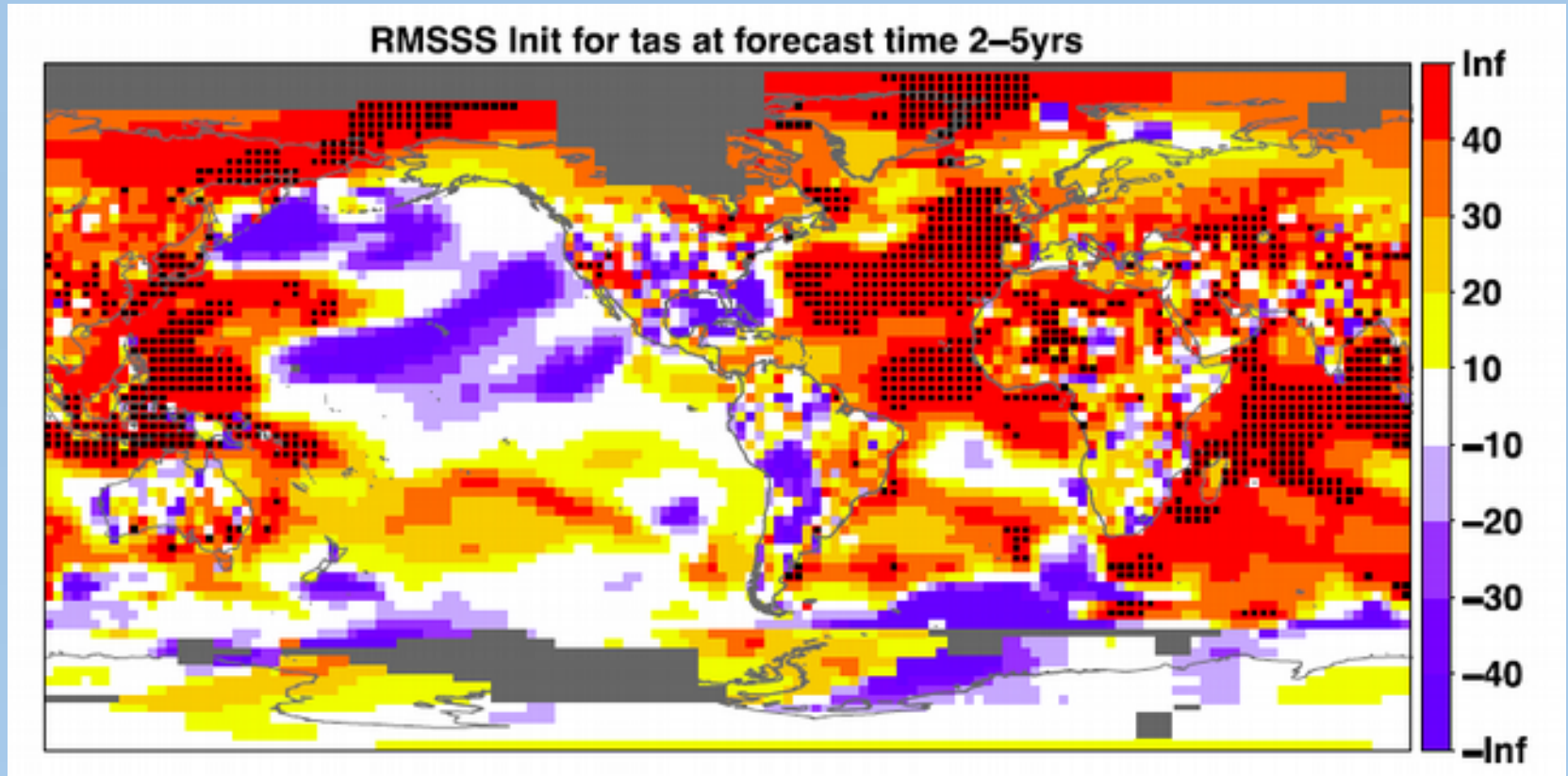
CMIP5 Decadal Hindcasts



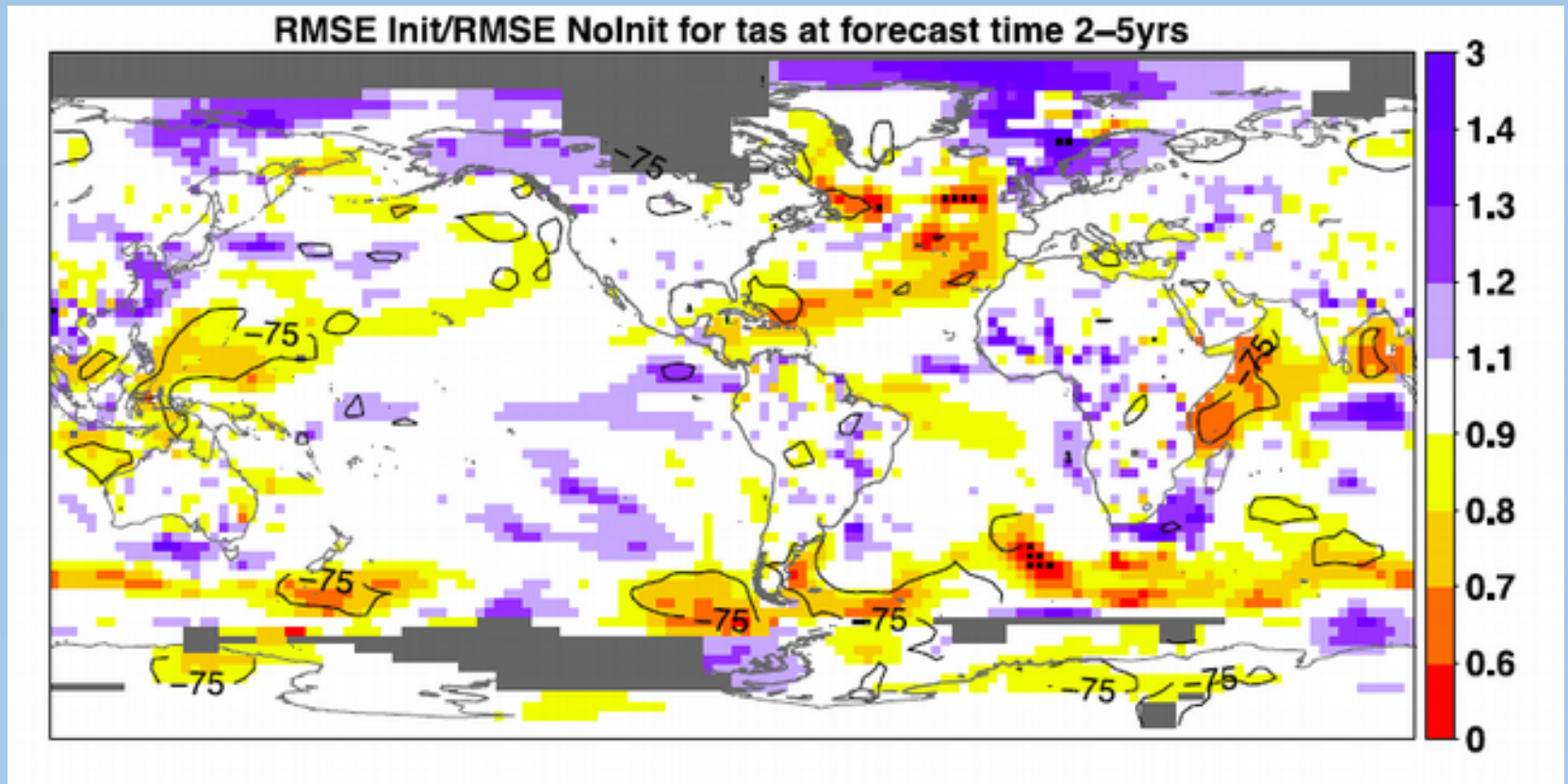
Kim et al, 2012



CMIP5 Decadal Hindcasts: Skill



CMIP5 Decadal Hindcasts: Skill



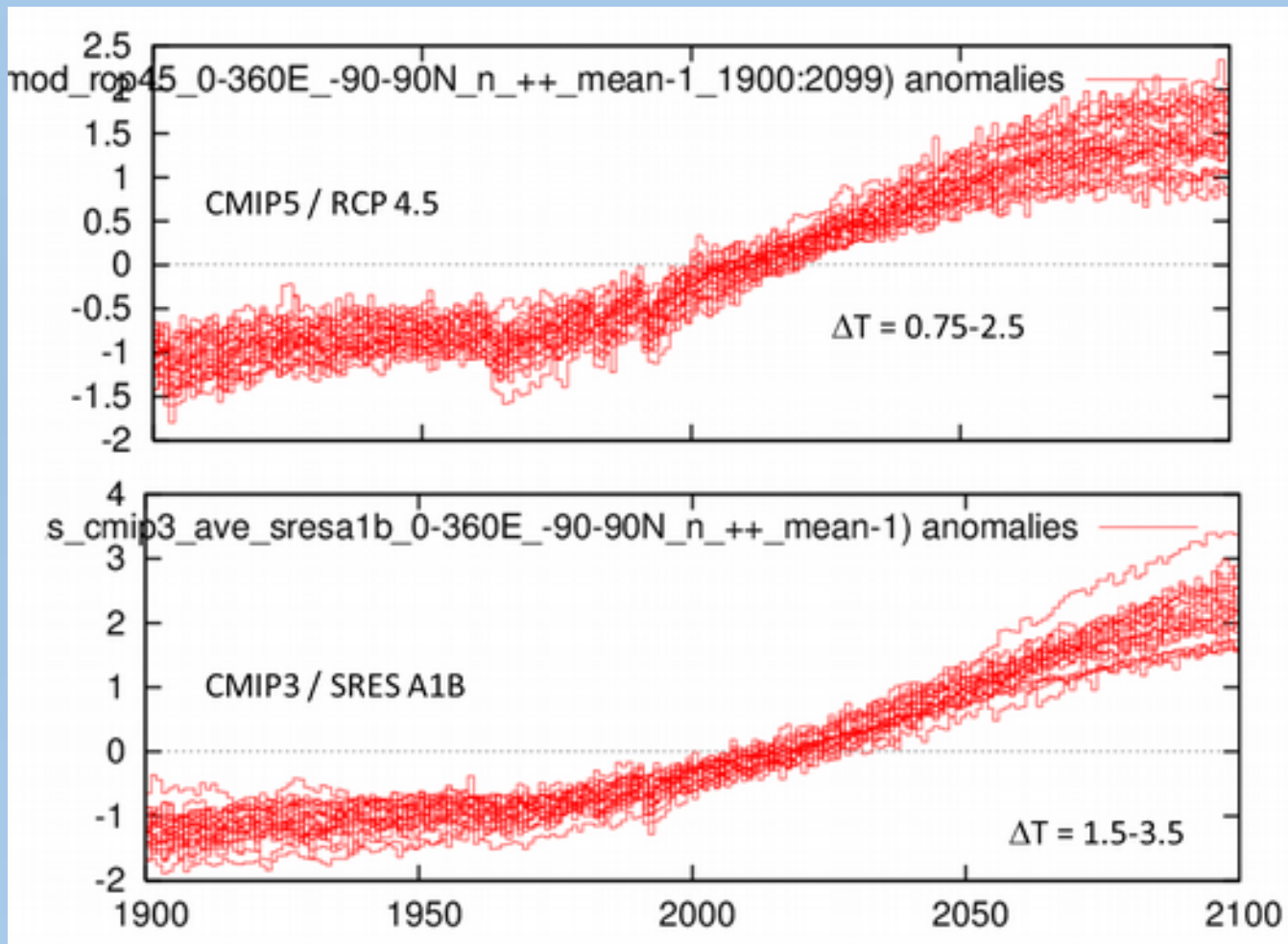


Are “Predictions” Improving?

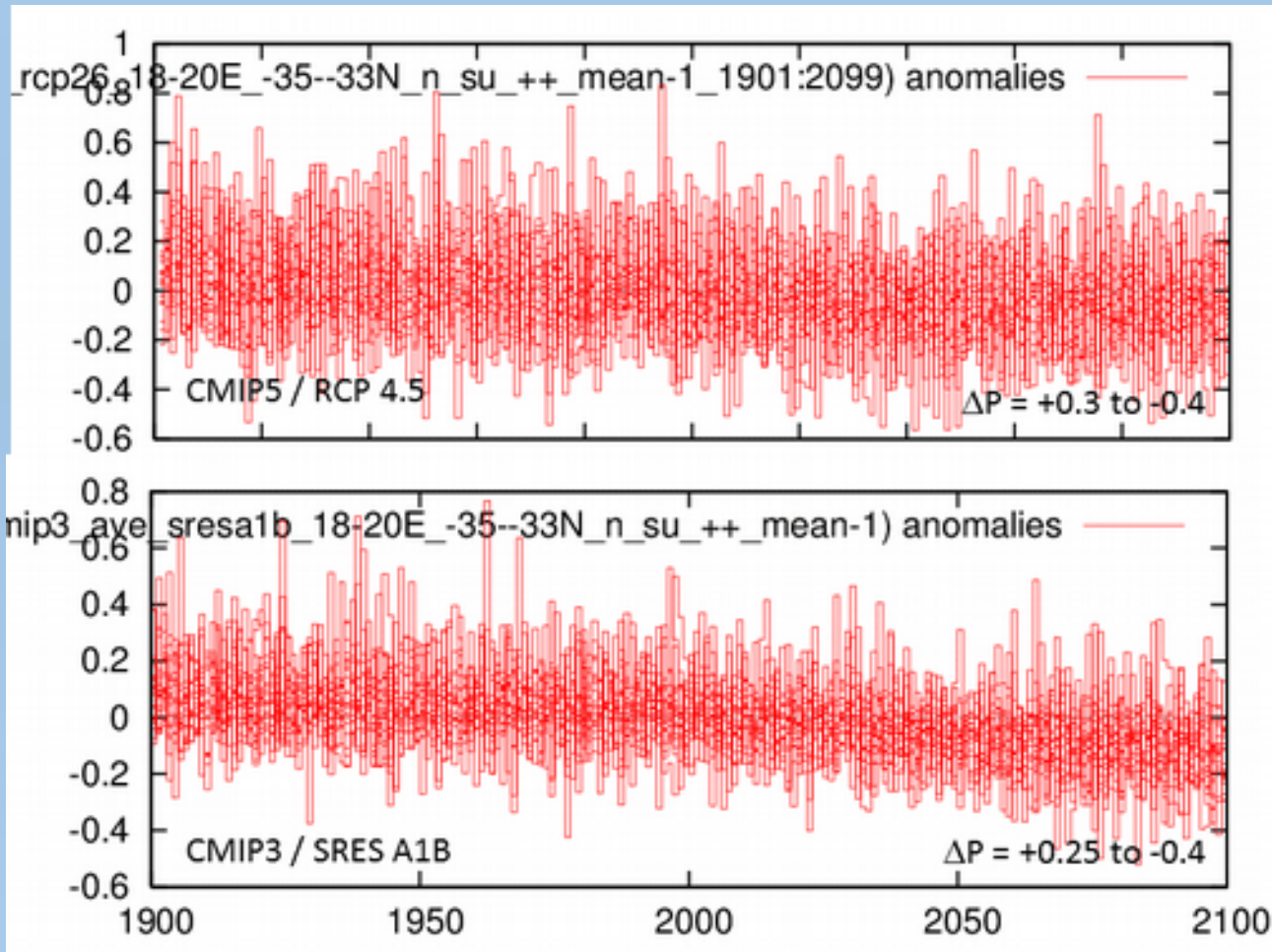
- Charney report 1979: 3.0 C [1.5-4.5]
- IPCC 1990/1992: 2.5 C [1.5-4.5]
- IPCC 1995: Ditto
- IPCC 2001: Ditto
- IPCC 2007: 3.0 C [2.0-4.5] “likely”
- IPCC 2013: [1.5-4.5] “likely”



SW Cape Temperature: CMIP3/CMIP5



SW Cape Rainfall: CMIP3/CMIP5



Does WG1 AR5 Matter for Adaptation?

- Projection uncertainties largely unchanged
- Decadal forecasts still highly experimental
- Many areas of improved evidence and understanding...
- ...which creates a challenge for approaches that are no co-xxxxxxx

