

2018

APEC CLIMATE SYMPOSIUM

Overcoming the Challenges of an Uncertain Future
with Enhanced Climate Information and Services

KEYNOTE SESSION

Climate Change: Connecting Knowledge and Action

PROF. MARK HOWDEN

Director, Climate Change Institute, Australian National University





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University

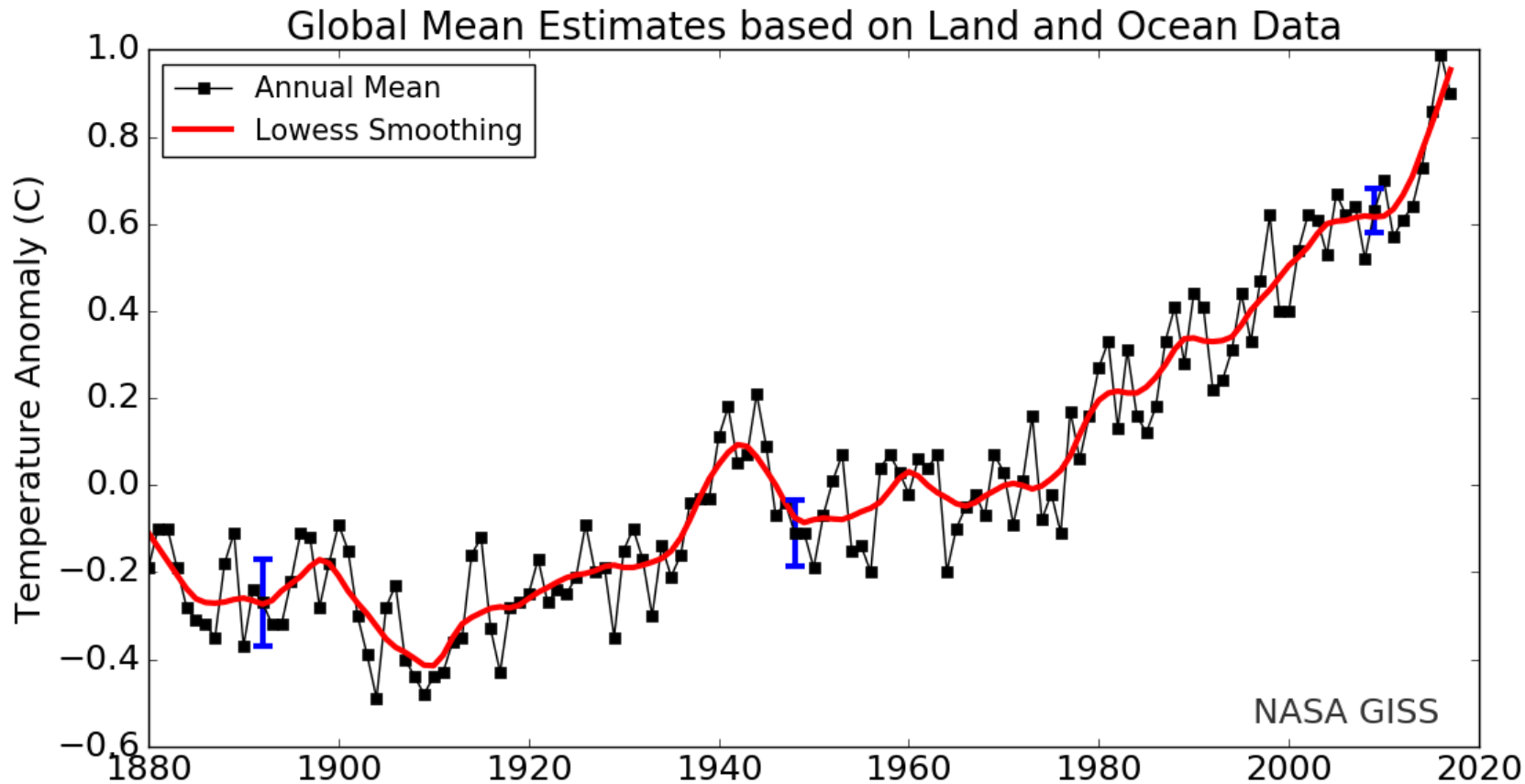
Climate change: connecting knowledge and action



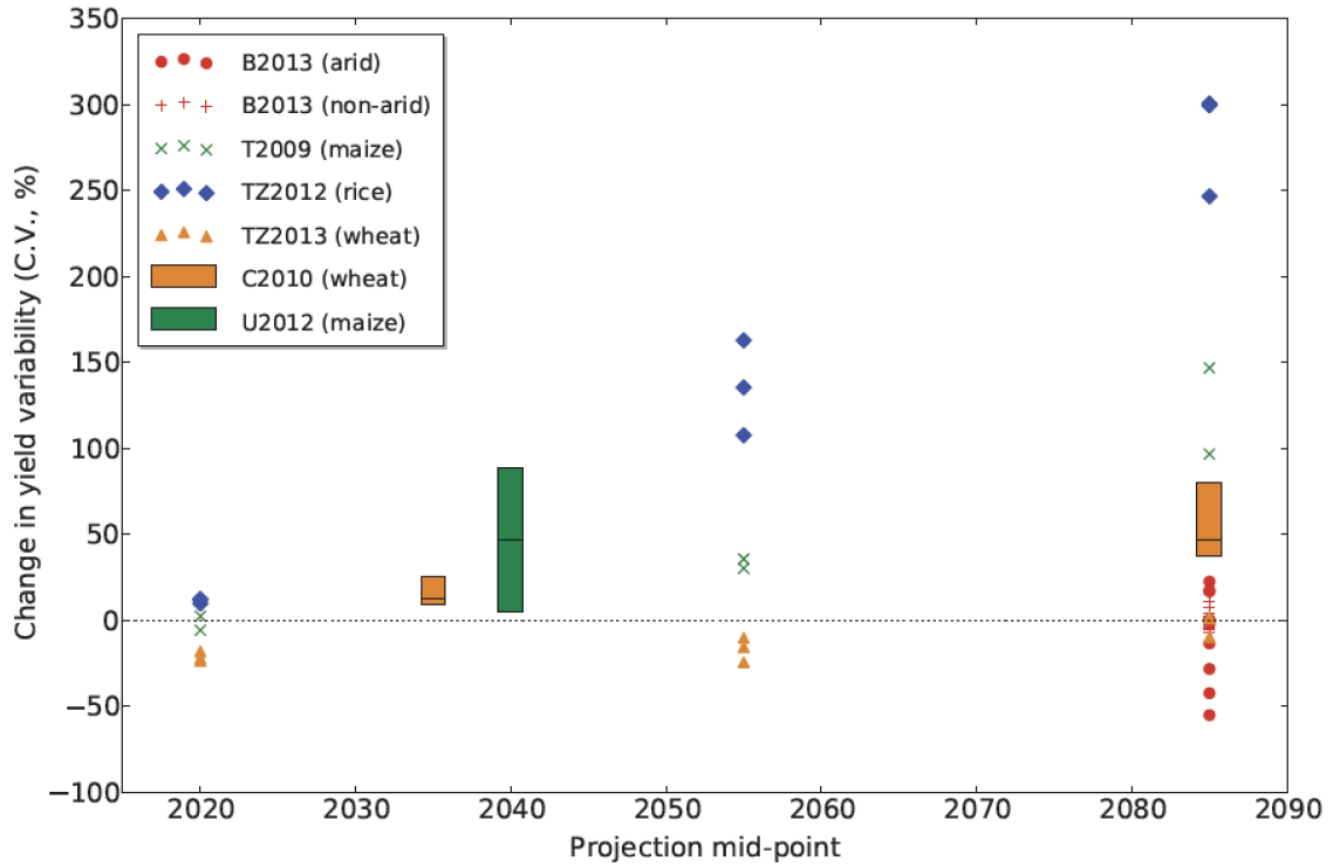
Prof. Mark Howden, Drs Steven Crimp and Rebecca Colvin
ANU Climate Change Institute
Vice Chair, IPCC Working Group II



Global temperatures keep rising



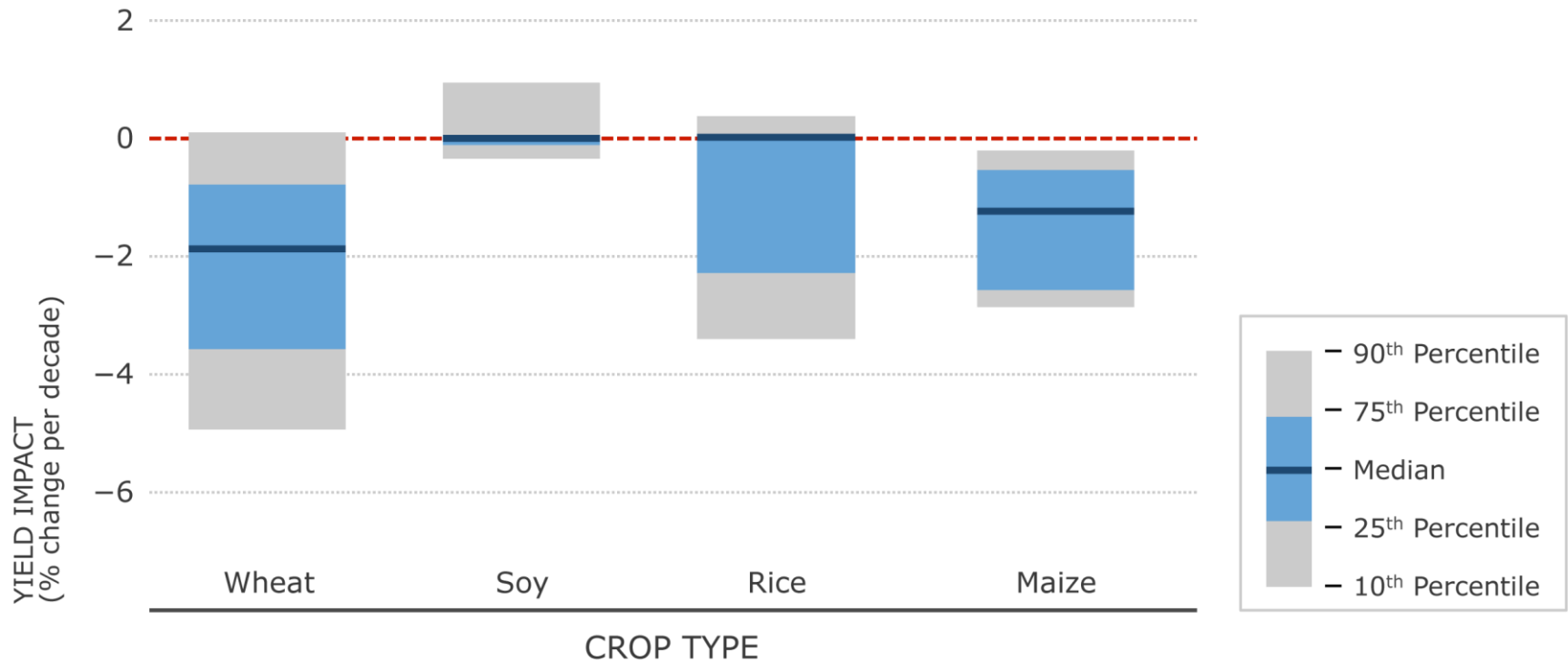
Variability of impacts likely to increase



- Increased asset base and value
- Increased exposure
- Increasingly global impacts from regional events
- Perhaps increased frequency, degree and changes in location of extreme climate events due to climate changes
- Perhaps changes in location of extreme climate events
- Increased expectations of science by stakeholders



Most climate change studies do not include variability



The human mind is not equipped to deal with climate change...

‘If you were to design a problem that the mind is not equipped to deal with, you know, climate change would fit the bill. It's distant. It's abstract. It's contested.’

Dan Kahneman in *Hidden Brain*, 2018

Distant

- Time – impacts decades away (or not)
- Space – we talk about the Arctic sea ice

Abstract

- Invisible – cannot see GHGs
- No reference point – 2°C, ppm
- Rare – trace amounts of GHGs

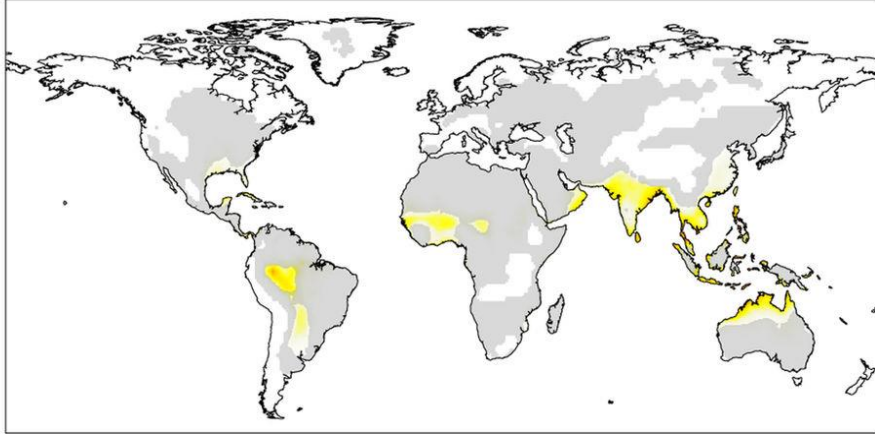
Contested

- Uncertainty – confidence intervals v. reality
- Politicised – challenges social order
- Conflictual – always about what do *others* do
- Painful – favoured solutions cause losses

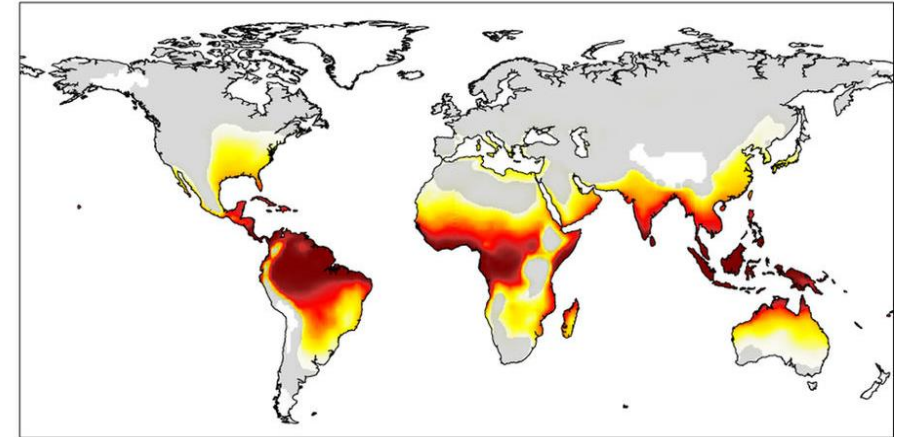
- *‘Should climate change occur in part via a result of more frequent El Niño or La Niña events or other large-scale circulation changes, then linking management decisions to seasonal climate forecasts would allow decision-makers to ‘drift’ in the correct direction’*
- This would be enhanced with more skillful seasonal climate forecasts

Heat stress frequency: global

Historical



RCP 8.5



0 50 100 150 200 250 300 350

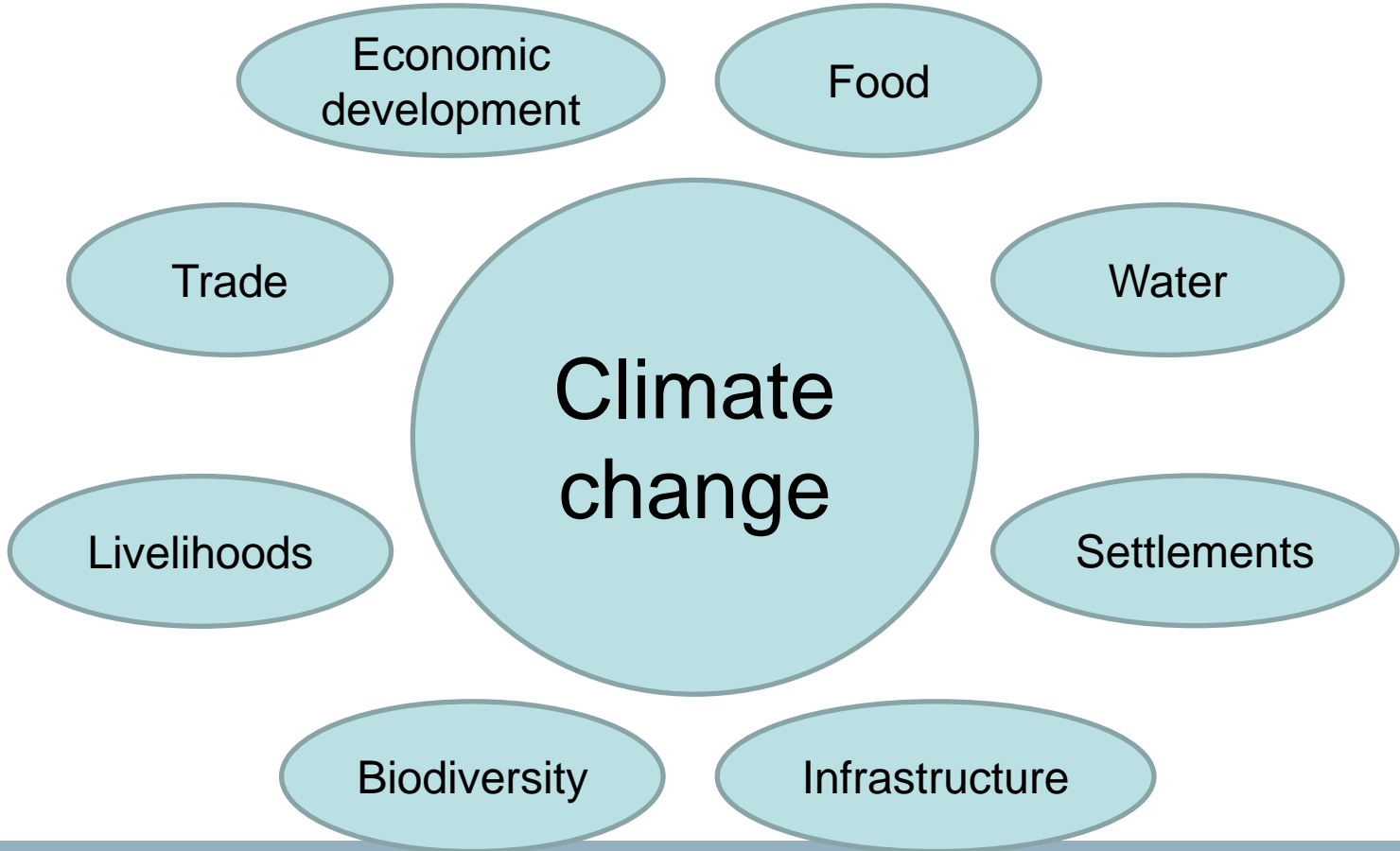
Number of days per year above deadly threshold

Forecasts plus an action plan

- Inform, educate and empower people
- Mobilize community partnerships and action to identify options and respond in a timely way
- Develop policies and plans that support individual and community health efforts
- Link people to needed personal health services and ensure the provision of health care
- Ensure competent public and personal health care workforce
- Evaluate effectiveness of the action plan



Climate-centric approach



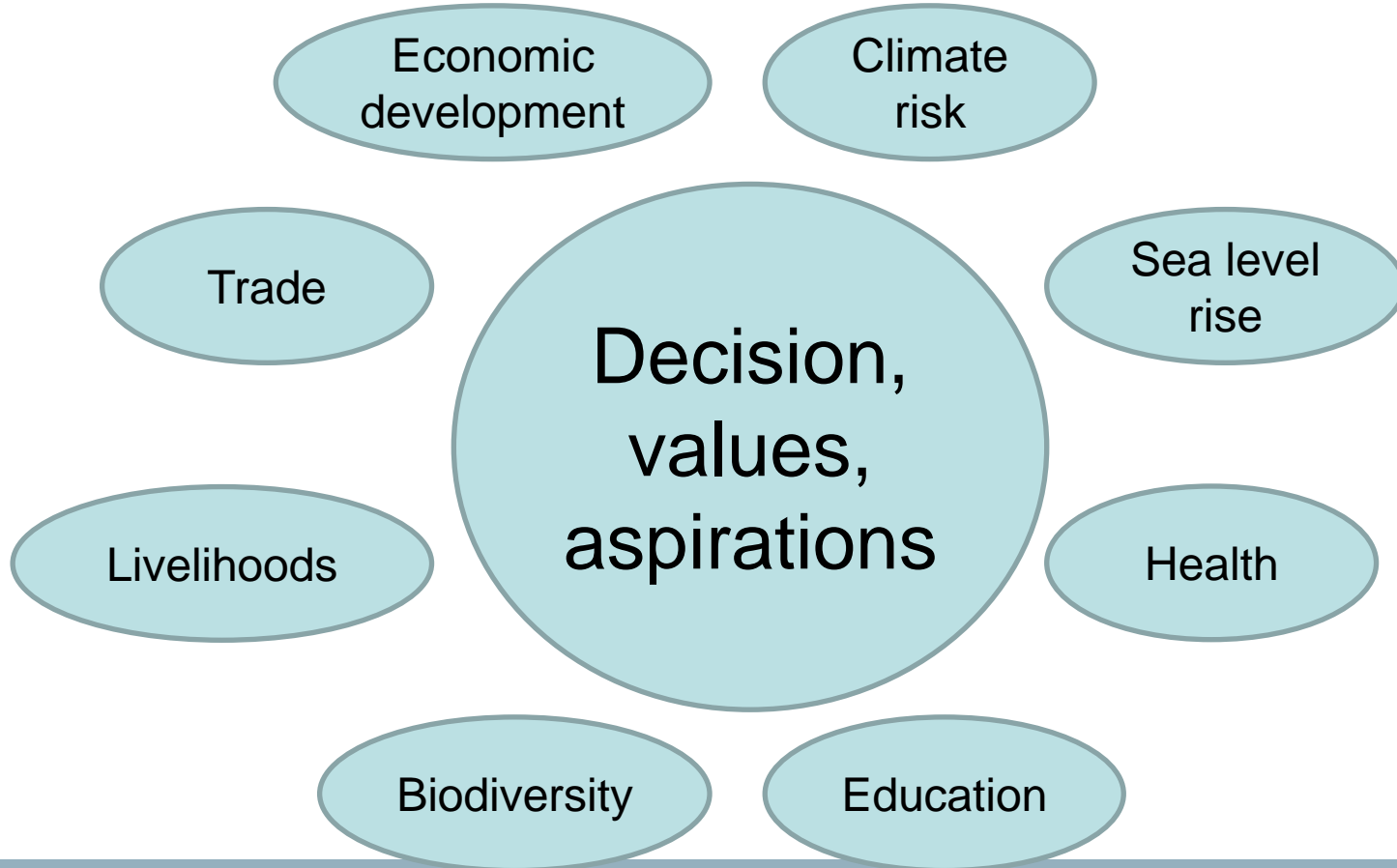


The knowledge injection model fails



- Often scientists have a poor understanding of stakeholder needs
- Only 23% of producers said the current focus on downscaled GCM data was providing them with climate information that they wanted in terms of variables
- 77% of producers said, for climate change, that they wanted climate information on the 5 to 20 year timeframe not the multi-decadal timeframes currently delivered

Decision or values-centric approach



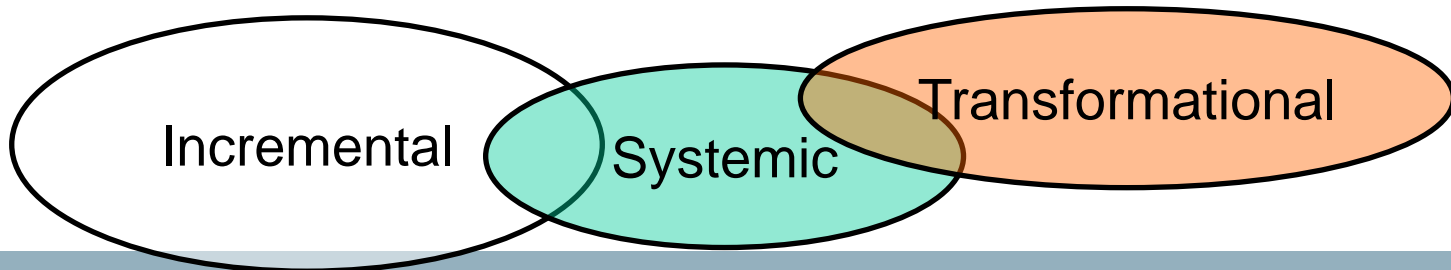
Participatory action research

- The active involvement of stakeholders in generating and using science
- Relevant, credible and legitimate research
- Increases the pool of knowledge and resources
- Key difference is in the attitudes of researchers: acknowledging that stakeholders and solutions to their problems are the primary reasons for the research
- Developed in the 1940's in response to exclusion of many voices and sources of knowledge

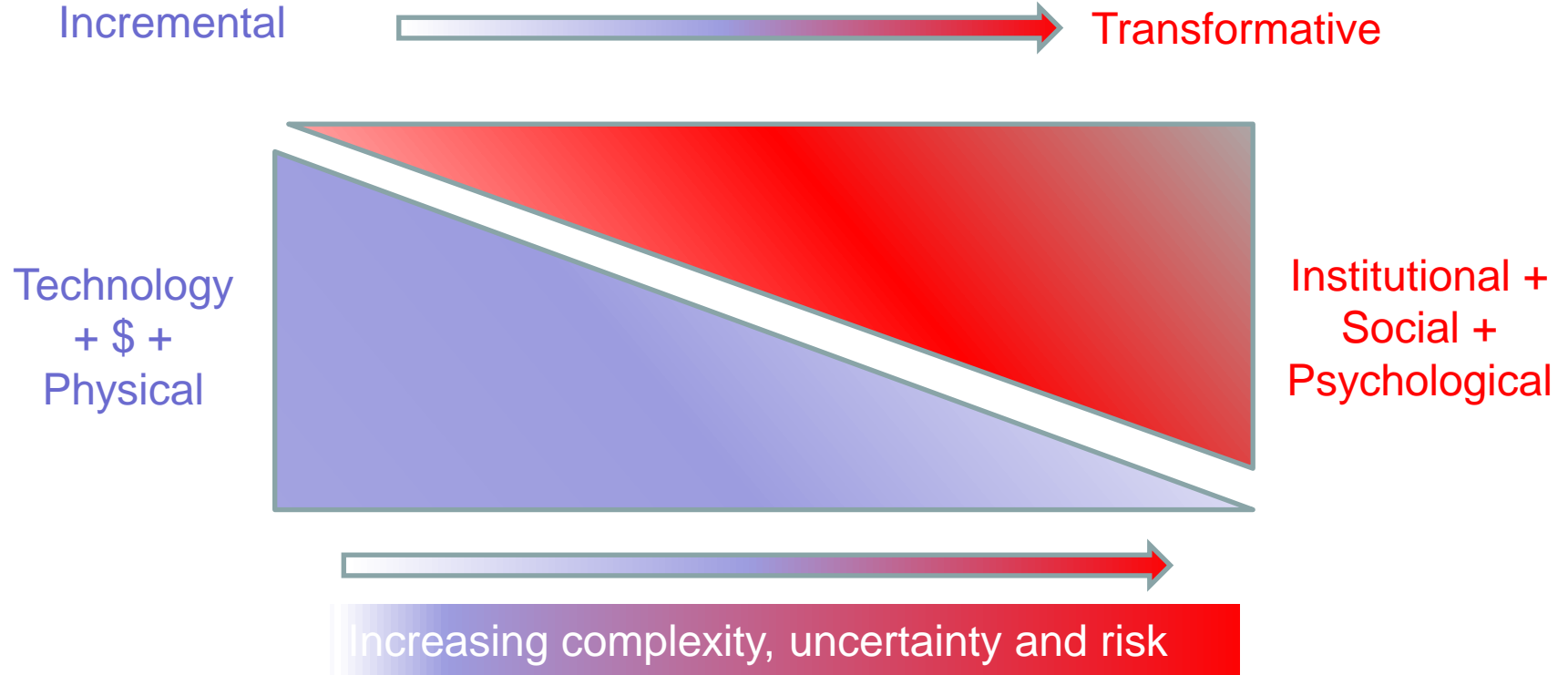
- Establish the stakeholders values, goals and climate-related decisions before thinking about the climate science
- Start with what is known (past and present) about climate risk before exploring the future
- Be clear about the public values vs science values that you are responding to, and make decisions consistently in terms of project design and implementation

- Social, psychological and institutional aspects are crucial in terms of:
 - motivation
 - capacity
 - intent
- But also in relation to barriers and limits to action
- Adaptation journey – people start with the technical and tactical but end up focusing on strategy and values
- Leadership – can come from anyone, anywhere
- Narratives can be powerful with these journeys

- Seasonal climate forecasts tend to be used to fine tune existing systems
- Focus on existing systems only may result in maladaptation – and in missed opportunities
- Need to consider more systemic and transformational adaptations
 - increasingly so as changes continue



Adaptation spectrum and types of science



Summary

- Climate changes already happening
- Seasonal and other climate forecasts have a role in adaptation
- But need to be tightly integrated into an action plan
- Participatory approaches and social science can help identify what is important and adoption pathways
- Over-reliance on climate forecasts can however lock-in systems to their current state rather than exploring alternative options
- Build capacity for proactive, strategic decision making



Australian
National
University

Thankyou

Prof Mark Howden
ANU Climate Change Institute
mark.howden@anu.edu.au
+61 2 6125 7266

Vice Chair, IPCC Working Group II

