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Managing the Unavoidable:

The relationship between responding to climate change and responding to disasters.

Managing the unavoidable

- **International context: how did we get here?**
- **Responding to extreme events in Australia**
- **Sharing the risk**
- **Concluding remarks**

The International Context: a bit of history

1988:

Toronto Conference Statement called for a 20% reduction in CO₂ emissions.

James Hansen testified before a U.S. Senate committee that he was 99% certain that global warming was underway.

The WMO Executive Council, following a request from US and allies, endorsed the IPCC and its brief.

1990:

WG III contribution to IPCC First Assessment: “Limitation and adaptation strategies must be considered as an integrated package and should complement each other to minimize net costs.”

The International Context: a bit of history

1992:

Action on adaptation to climate change, including extreme weather, is seen as

- (a) a “kind of laziness, an arrogant faith in our ability to react in time to save our skins”* (greenies)
- (b) tantamount to admitting climate change is a real phenomenon (skeptics)
- (c) too expensive, and should be sacrificed in favour of emissions reductions (scientists)

1995:

The IPCC Second Assessment finds that there is insufficient data to determine whether the frequency or intensity of extreme events have changed.

The International Context: a bit of history

2001:

The Marrakesh Accords mandate National Adaptation Programmes of Action for countries with limited adaptive capacity: “participatory assessment of vulnerability to current climate variability.”

The IPCC Third Assessment notes that extreme rain events and drought have increased and frosts have decreased, in some locations, but still there is not sufficient evidence for changes in heat waves, fire and cyclones.

2002:

Developing countries negotiate the Delhi Declaration, calling for greater attention to adaptation in international climate-change policy negotiations.

The International Context: a bit of history

2005: The climate change “commitment”

“Even if atmospheric composition were fixed today, global-mean temperature and sea level rise would continue due to oceanic thermal inertia. The ... warming commitment could exceed 1°C... For sea level rise, the ... commitment is 10 centimeters per century [and] a substantial long-term commitment may be impossible to avoid.”*

The International Context: a bit of history

2006:

The Nairobi Work Programme for developing countries is initiated.
The Stern Review says that adaptation “is the only way to deal with the unavoidable impacts of climate change to which the world is already committed.”

2007:

For the first time, the IPCC Fourth Assessment includes a section* on disasters and hazards and cites evidence of increasing:
floods, severe storms, coastal storm surges, Atlantic hurricanes, heat waves, droughts and some pests and diseases.

Trends in bushfires remain difficult to assess but a signal is emerging in some regions.

Responding to Extremes in Australia

Practical guidance for developed countries has been limited. Australia is vulnerable.

What is our goal?

To clarify and secure the common interest.

A good approximation to the common interest in response to climate change is to reduce the vulnerability of things valued in Australia's many and diverse communities.

Responding to Extremes in Australia

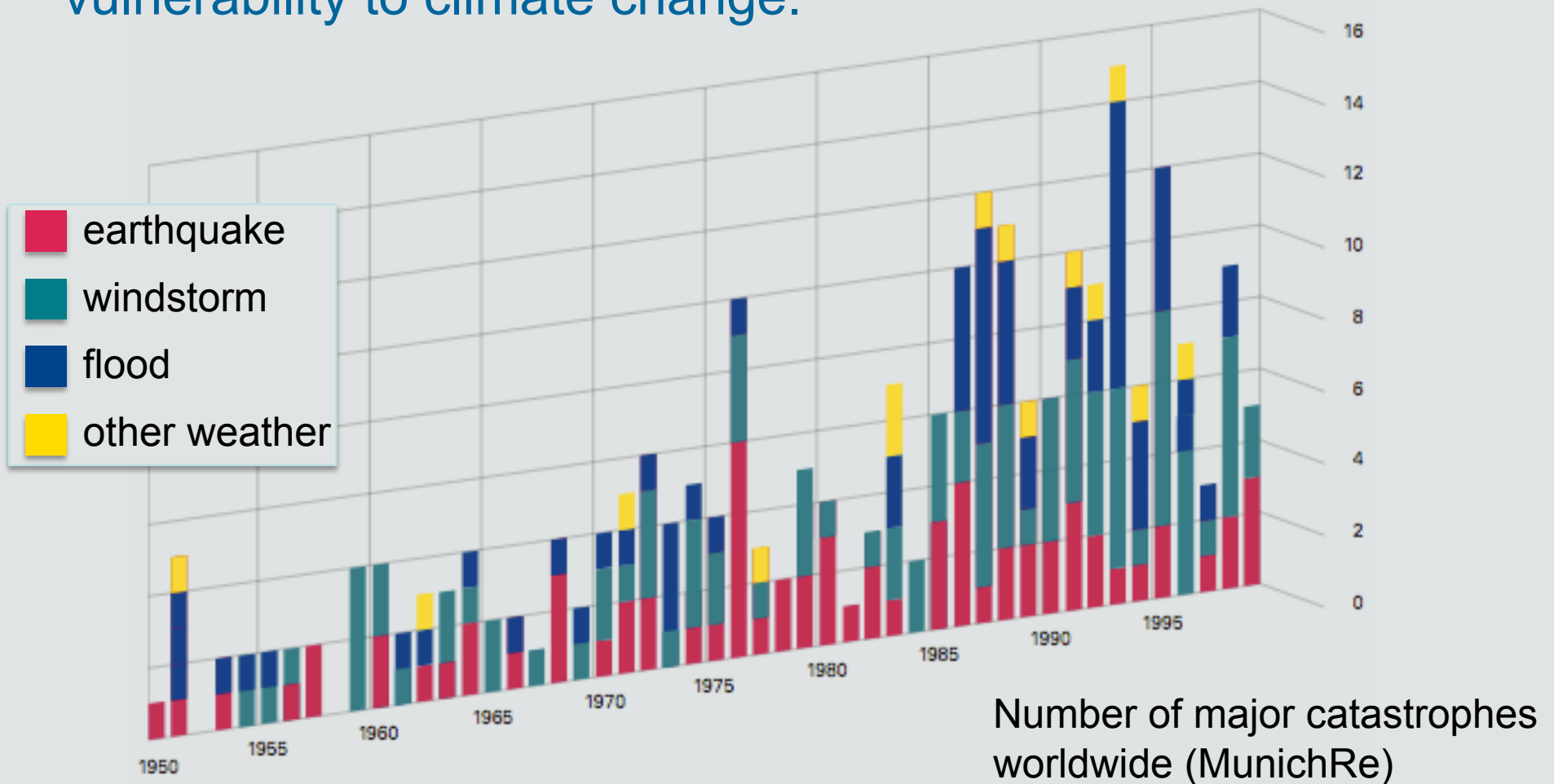
“A crisis is a terrible thing to waste.”*

- extreme weather events often stimulate the political will to invest in reducing vulnerabilities, including more generally to the impacts of climate change.

Reducing vulnerability is a somewhat different problem in each community, sector or ecosystem. Specific values and interests vary greatly from place to place and are subject to change over time.

Responding to Extremes in Australia

From a common interest standpoint it is reasonable to focus on extremes as one means to address our vulnerability to climate change.

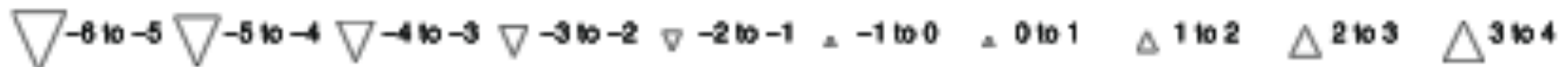
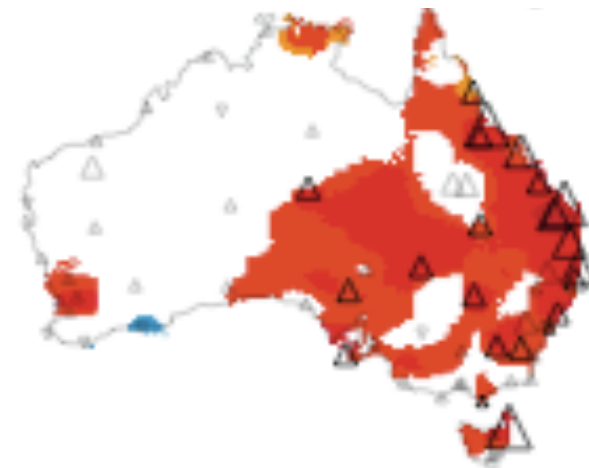
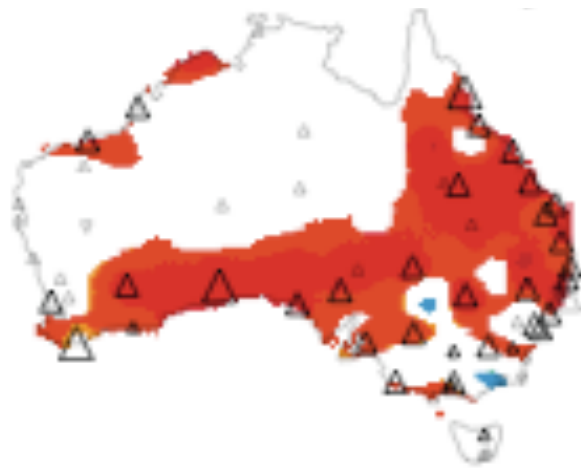


Responding to Extremes in Australia

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Mean minimum temperature (°C/decade)

Mean maximum temperature (°C/decade)



Annual trends in extremely warm nights (left) and extremely hot days (size of triangle = %/decade)

Responding to Extremes in Australia

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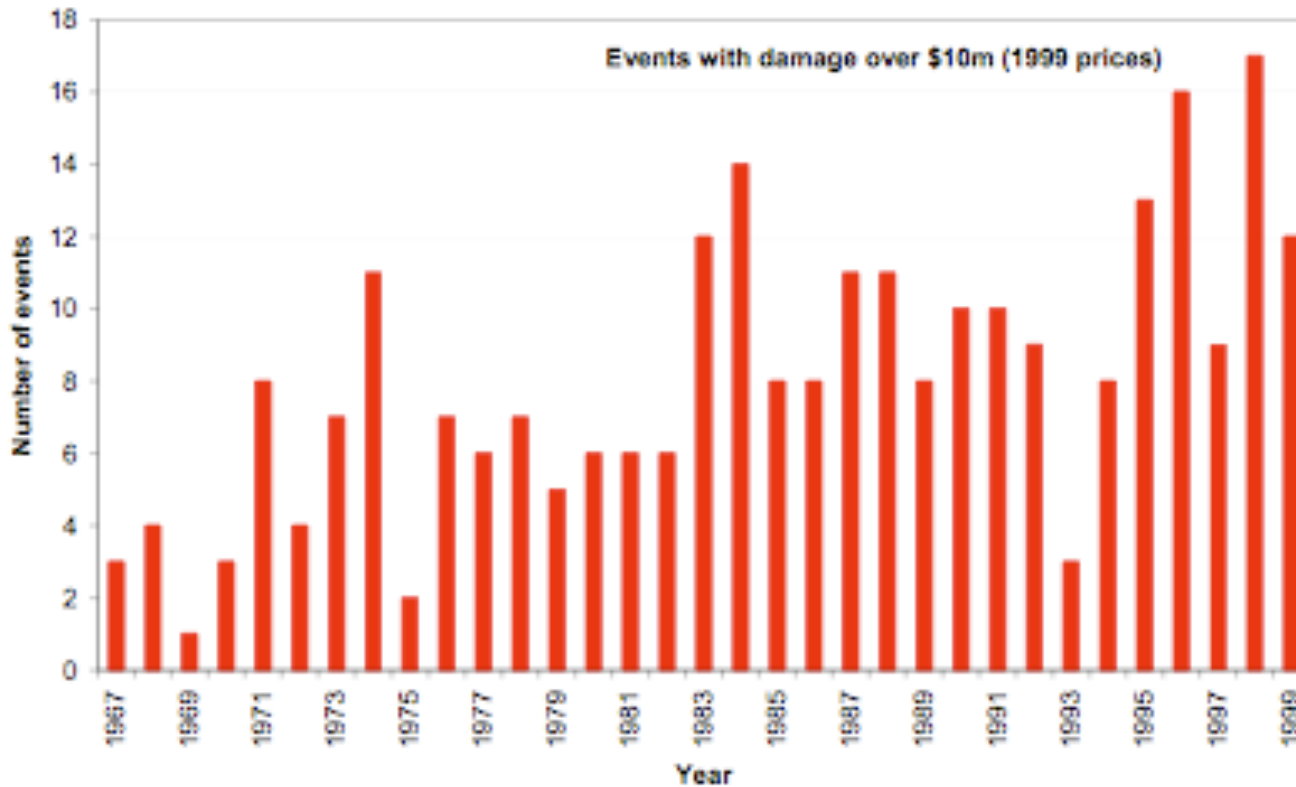
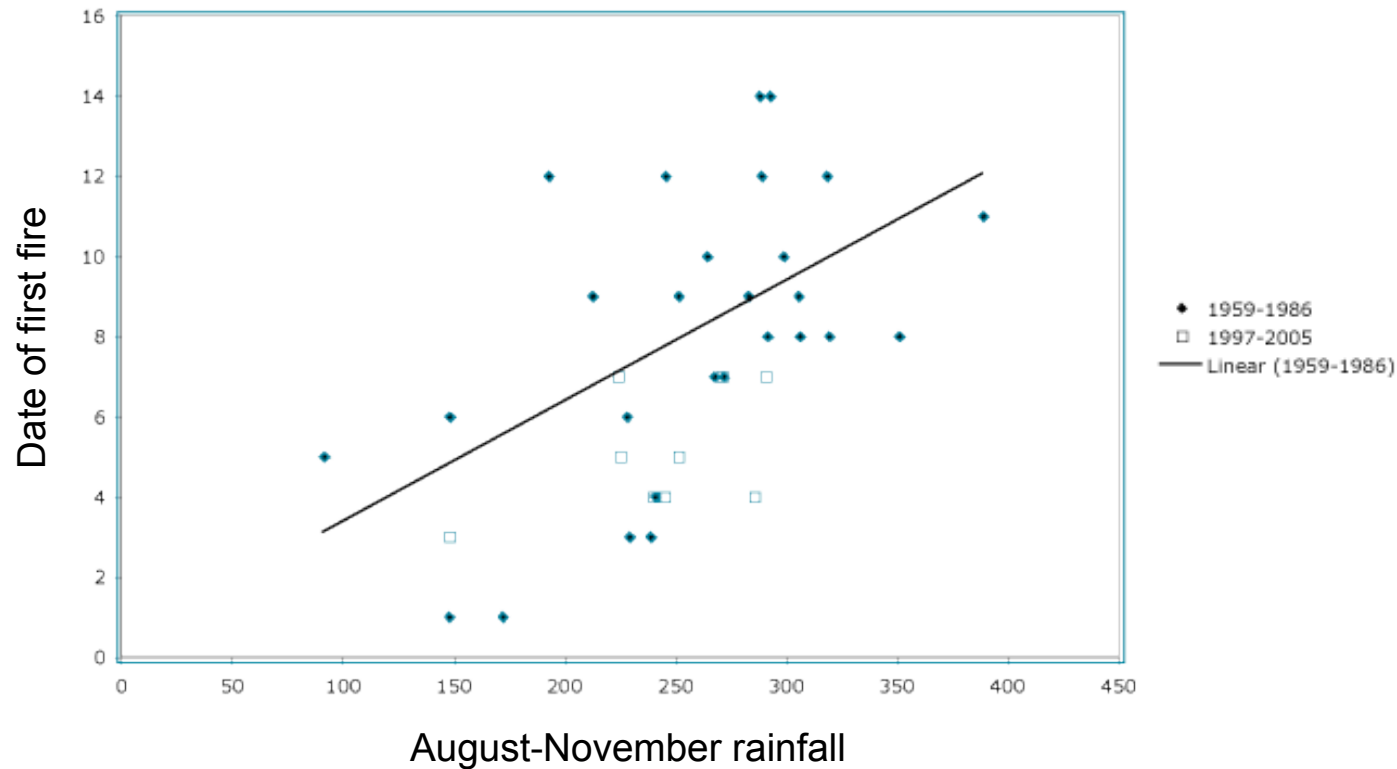


Figure 1: Number of natural disasters in Australia with damage over \$10 million (1999 prices) from 1967-1999 (BTE, 2001).

Responding to Extremes in Australia

From a common interest standpoint it is reasonable to focus on extremes as one means to address our vulnerability to climate change.



Across Victoria, low rainfall and high daytime temperatures during the late winter to early summer are significantly correlated with larger burnt areas and an early start to the fire season.

Responding to Extremes in Australia

Under a changing climate regime, the organization, the geographic scale of covering risk, and the roles of private and public insurance will have to be reconsidered.

A major problem is the ambiguity of risk in the evolving context.

Sharing the risk

A four layer approach to manage the risks of climate change:

1. Individual cover ensures risk segregation by discriminating between policyholders using risk characteristics, and will:
 - hamper high risk development,
 - provide incentives to improve risk mapping,
 - provide incentives to enforce current regulation,
 - promote obtaining information on loss-reducing measures, and
 - drive the development of new measures.

This approach needs to be balanced with equity considerations.

Sharing the risk

A four layer approach to manage the risks of climate change:

1. Individual

2. Private insurers can:

- bundle different types of insurance together to prevent adverse selection. Bundling is compulsory in some countries, e.g. France.
- use deductibles to lower the transaction costs and number of transactions in the event of a single large disaster.

Sharing the risk

A four layer approach to manage the risks of climate change:

1. Individual

2. Private insurers

3. Reinsurance requires

- increased capital due to the ambiguity of risk of future large disasters,
- new approaches including catastrophe bonds, options and futures (although pricing can be difficult).

Sharing the risk

A four layer approach to manage the risks of climate change:

1. Individual
2. Private insurers
3. Reinsurance
4. Government reinsurance can diversify sufficiently to spread risk. Government has a role in:
 - solving liquidity shortfall in widespread disasters,
 - providing coverage of last resort in events with considerable disruption of public safety and large catastrophes requiring coordinated effort.

Sharing the risk

A four layer approach to manage the risks of climate change:

1. Individual
2. Private insurers
3. Reinsurance
4. Government reinsurance

This multi-layer structure can adopt an adaptive approach with annual adjustments to cope with evolving risk profiles.

Concluding remarks

A value commitment to the common interest of the community at hand means that individual interests must be

- **integrated if possible,**
- **balanced if necessary, and**
- **reconciled when they come into conflict.**

All interests are politically contestable as to appropriateness and validity.

Concluding remarks

Some introspection suggests that we in the aggregate may have contributed unwittingly to disappointing outcomes to date in the climate change regime by substituting such *means* as scientific assessments, national frameworks, and treaties as satisfactory *outcomes*.

The recommendation is to refocus efforts on the common interest and to evaluate our efforts accordingly. Responding to weather disasters is one way to achieve that focus.