

That adapting to climate
change is *easy*, up to a point...

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Coverage

- 1. A note on the style of this seminar.*
- 2. A “tipping point” in the climate change debate.*
- 3. How big a challenge is adaptation?*
- 4. The state of adaptation literature and policy discussions.*
- 5. That climate change might be easier than some seem to think – suggestive examples.*
- 6. Redirecting the research and policy debate.*

1. This seminar...

- As much provocation as seminar -- broad and general, but some evidence across sectors.
- Adaptation research and policy requires detail and focus, but also a general trajectory.
- **Propositions**
 - *we are in danger of a trajectory that wastes time, reinvents wheels and ignores existing knowledge and capacities.*
 - *we might get 1/3 – 2/3 to a believable adaptation policy without inventing anything new.*
 - *we can re-orient thinking about adaptation research and policy.*

Sources:

- Expanded version of Dovers S. 2009. Normalizing adaptation. *Global Environmental Change*. 19: 4-6.
- Current review of the global adaptation literature, and involvement in Austn discussions.
- Generally, see Lindenmayer et al (eds) 2008. *Ten commitments: ideas to save the Lucky Country's environment*. CSIRO Publishing.
- ... more references along the way.
- Slides on web soon.

2. A “tipping point” in the climate debate

- 20 years of natural science effort – is it happening, how much, and when?
- *Yes, perhaps a lot, and some locked in - hence adaptation.*
- A question for social science and other knowledge systems (professional, practical, community-based).
- An interesting and difficult transition:
 - *need ongoing science, but more...*
 - *other disciplines only starting to engage.*
 - *many instant climate adaptation experts.*
 - *considerable confusion in domains of practice.*

Adaptation vs. mitigation as policy problems

- **Mitigation** – very difficult politically:
 - *but, given its root cause in modern economies (fossil energy use), with agreement and a target, amenable to systemic policy interventions (ETS, tax, energy policy).*
- **Adaptation** – newer issue, not amenable to systemic policy interventions:
 - *huge variations across jurisdictions, sectors, places.*
 - *demanding varied and multiple policy interventions.*
- Mitigation is a **diabolical** policy problem, adaptation a very **messy** one.

Predicting policy impact

- Well-understood definitions of (un)certainty in climate science (IPCC).
- Reasonable capacity to model and predict impact of major mitigation policy options.
- Little prospect of predicting the effectiveness of adaptation policy options:
 - *what likelihood strategic policy assessment impacting on sectoral policy, or an education program causing behaviour change?*
- A strong justification for no-regrets options – ie. what we should be doing anyway.

3. State of literature and policy debates

- **The adaptation literature (broadly):**
- Small, but growing rapidly.
- Strong on general ends, noting a lack of examples and models of adaptation, and very little instruction on the policy and institutional means.
- A self-referencing climate literature, not drawing on:
 - *experience and examples in cognate sectors eg. emergency management, NRM, public health.*
 - *relevant disciplines eg. public policy, law, public administration, institutional theory.*
 - *the broader domain of sustainable development.*

(Diversion: whatever happened to sustainable development?)

- Once upon a time ... climate change one of several 'meta-issues' gathered under the framework of sustainable development, from 1987.
- Have separated in research and policy.
- CC interconnected with, and similar problem attributes and cause-effects to, env health, land degradation, biodiversity, human development, etc.
- Lost opportunity for cross-fertilization.

Dovers S. 1997. Sustainability: demands on policy: *J.Public Policy*. 16: 303-318;
Imran Habib. 2009. *Climate policy integration*. UNDESA Working Paper 73.

The policy debate (broadly):

- Similar to the literature
 - *adaptation as a "new" policy problem.*
 - *becoming a bandwagon.*
 - *struggling for trajectory and purpose.*
- Not connecting sufficiently to:
 - *existing practical, professional and academic knowledge.*
 - *a long history of documented policy experience in relevant sectors.*

The dangers...

1. That we seek to apply mostly natural science understanding to emerging social, legal, policy & institutional challenges.
2. That we reinvent wheels in research, and ignore relevant, existing knowledge.
3. That we treat adaptation as a new and exceptional policy problem, ignoring relevant policy experiences (both good and bad).
4. That we pursue adaptation in uncoordinated ways – ie within sectoral.

4. Adaptation – how hard?

- Is climate change adaptation the biggest challenge ever to face humanity, or something more tractable?
- Human societies have long been adapting to changing and variable climates – science, understanding, institutions, policy, management, behaviour.
- Nowhere more so than in Australia – a highly variable climate:
-- we should be quite good at it ... are we?

Climate change: a simple typology

1. Not too dissimilar to existing variability over recent centuries, within institutional & societal memory, but to which we could adapt better than we have. Up to 2°C? *Routine problems.*
2. Significantly exacerbated variability – droughts, floods, cyclones, heatwaves, vector-borne diseases, etc – not outside our lived and historical experience, but very challenging. Extremes become quite common. 2 – 4.5°C? *Non-routine problems.*
3. Change and variability beyond human experience and institutional memory, threatening productive base of societies, inundation of major cities, health of large parts of the population, economic stability, integrity of ecosystems, etc. Strong non-stationarity, and extremes the norm. Over 4.5°C? *Complex, unbounded problems.*

See typology of disaster problems: Handmer J & Dovers S 2007 *The handbook of emergency and disaster policies and institutions*. Earthscan.

Type 3: Upper end climate change, and complex,
unbounded disaster problems...

“Things are gonna slide in all directions,
Won't be nothing, won't be nothing you can measure
anymore,
The blizzard, the blizzard of the world has crossed the
threshold.
And it's overturned the order of the soul...
... I've seen the future, brother, it is murder.”

Well-known climate scientist, Leonard Cohen (1992)

Proposition:

- Existing, evidenced proposals provide a basis for a climate adaptation response, certainly addressing level 1, and some of level 2.
- 1/3 – 2/3rds to a world's best practice adaptation policy, without having to think hard?
- *(Level 3 is another matter, but attended to some degree by attending 1 & 2.)*
- Consider relevant sectors – what should we be doing already, for other reasons, that would also serve to decrease vulnerability to climate change and variability...

5. "Evidence"

- Some broad suggestive evidence from ten issues and sectors.
- Not definitive in any of the following – but reasonable propositions from ten sectors and issues.

Example 1:

- *Our water systems will be stressed by climate change – what should we do?*
- Water management = climate variability, in allocation for human consumption and maintenance of environmental values. Vigorous implementation of NWI = ability to cope with increased variability. As with other national policy frameworks (eg. EU WFD), the NWI reflects accrued wisdom of unimplemented past ideas and policy, that address climate variability.

Hussey and Dovers (eds) 2007, *Managing water for Australia*. CSIRO Publishing; Troy (ed) 2008. *Troubled waters*. ANU E-Press.

Example 2:

- *Our rural towns will be wiped out...*
- Investigations of local and regional economic vulnerability to climate change recommend a familiar list of (adaptive) strategies that should be pursued for other reasons – diversification of employment base, niche market development, local skills enhancement, increased collaboration amongst firms, better local socio-economic data, etc.

Li et al (forthcoming) *Integrated assessment of climate change impacts on urban settlements: synthesis report*. Fenner School ANU for Aust Dept of Climate Change; Rogers (ed), 2006. *The changing nature of Australia's country towns*, VURRN Press.

Example 3:

- *Biodiversity will be threatened and unable to adapt – what should we do?*
- The vulnerability of biodiversity to climate change would be addressed by familiar, existing proposals -- landscape-wide approaches to vegetation management and connectivity, a representative and properly resourced and managed reserve network, longevity of policy programs, comprehensive long term ecological monitoring, etc.

Lindenmayer & Fischer. 2006. *Habitat fragmentation and landscape change*. Island Press; Pittock et al. 2008. Running dry: freshwater biodiversity, protected areas and climate change. *Biodiversity*. 9: 30-38.

Example 4:

- *What needs to be done to reduce the vulnerability of remote Indigenous communities to climate impacts?*
- The impacts of climate change on health and well-being in remote communities invites the implementation of things we should do anyway – decent medical services, workable communication systems, standard education services and opportunities, support of local resource-based enterprises, employment in NRM work, etc.

Altman & Jackson. 2008. Indigenous land and sea management. In: Lindenmayer et al (eds) *The ten commitments*. CSIRO Publishing.

Example 5:

- *How can our urban and industrial systems adapt to carbon constraints, heat waves, sea level rise, etc?*
- Past neglect of strategic and operational energy reform and urban development, implementing already identified idiocies – wrongly oriented houses dependent on air-conditioning, private car reliance designed into the structure of cities, stifling of independent local scale energy production, inefficient industrial processes; inadequate developer contributions and public investment to public transport, poorly managed urban vegetation, etc.

Gleeson. 2006. *Australian heartlands: making space for hope in the suburbs*. Allen & Unwin; Stasinopoulos et al. 2009. *Whole system design*. Earthscan; www.sydneycoastalcouncils.com.au/system-approach-to-regional-climate-changeadaptation-strategies-in-metropolises/index.php

Example 6:

- *Climate extremes will impose new pressures on emergency management.*
- The sharp end of climate adaptation – emergency and disaster management. Well-known options: cross-sectoral policy coordination; improved communications, sensible prescribed burning regimes, enhanced community scale capacities, improved building standards, strengthened remote/regional livelihoods, urban planning that reduces rather than increases vulnerability, etc.

Handmer & Dovers. 2007. *The handbook of disaster and emergency policies and institutions*. Earthscan.

Example 7:

- *Need to organise adaptation at regional and local scales, and the literature and policy are asking how.*
- Long history of local-regional scale organisation and capacity building in:
 - catchment management, regional development, emergency management, livelihood development, and especially in NRM.
- Large body of experience and implementable lessons..

Robins & Dovers. 2007. Natural resource management regions in Australia: the haves and have nots. *Geog. Research*. 45: 273–90; Robins & Dovers. 2007. Community-based NRM boards of management: are they up to the task? *AJEM*. 14: 111–22.

Hang on ... is 'adaption policy' the wrong question?

- 1-7 above suggest that the real question is how to achieve adaptation-relevant measures into other, sector- and issue-based policy.
- So 'adaptation policy' is really about policy integration through administrative structures and processes, informing decision making, embedding long term processes.
- But ...

Example 8:

- *Climate 'mainstreaming' is really important but we don't know how to do it.*
- Lots of traditional measures – min councils, joint delivery, central policy units, etc.
- Environmental policy integration (EPI) literature and practice – full of options , especially re strategic environmental assessment.
- Very little evaluation of these options re climate.

Ross & Dovers. 2008. Making the harder yards: environmental policy integration in Australia. *Aust J Public Admin.* 67: 245-60; Imran Habib. 2009. *Climate policy integration.* UNDESA Working Paper 73.

Example 9:

- *We don't know how to do long term policy challenges.*
- Statutory authorities for ongoing tasks; use of statutory objects to ensure persistence; superannuation and other policy responses to demographic change; infrastructure planning, State plans...
- (... the RAC, Commission for the Future, Standing Ctee on Long Term Strategies, LWA.)
- What has worked, why, and what might be usable for adaptation?

Dovers. 2005. Environment and sustainability policy. Federation Press;
Connor & Dovers. 2004. Institutional change for sustainable development.
Elgar; Marsh & Yencken. 2004. *Into the future: the neglect of the long term
in Australian politics*. Black Inc.

Example 10:

- Climate adaptation, at a meaningful local scales, asks new questions of data sets.
- Examples of effective data transformation, but high transaction costs -- require:
 - *protocols for data access and use at household scale, and sharing between agencies and jurisdictions.*
 - *managing political and commercial sensitivities that arise when vulnerability is mapped at local scales.*
 - *locally relevant climate histories and projections.*
- Crucial area of required support for local government, businesses and communities – needed anyway.

Li et al (forthcoming) *Integrated assessment of climate change impacts on urban settlements: synthesis report*. Fenner School ANU for Aust Dept of Climate Change.

(Diversion – why I dislike the term “auto-adaptation”)

- Across the ten, many undescribed adaptations...
- Is “auto-adaptation” a top-down, faintly insulting term?
- *... what local governments, landholders, climate-sensitive firms and households do, and have been doing anyway, but which policy and research didn't get to describe or prescribe first?*
- Need to document and explore – why and when, what barriers, what information or incentives could further enable actions?

Across all ten...

- Existing understanding & examples available.
- Opportunities for nearer term action, often with multiple benefits incl climate adaptation.
- **Important** – greater connection with locally relevant agendas, roles and skills.
- *-- all options subject to further investigation, but hopefully not reinvention.*
- But also many barriers that could be addressed
-- role of policy – remove barriers to auto-adaptation?
- And need for cross-sectoral coordination

6. Redirecting research and the policy debate

- Qualification:
 - *this has been broad, and there are exceptions in the literature and policy.*
 - *great need for detail and specifics, but in a coordinated fashion.*
- However, I submit that the overall assessment holds true.
- Suggestions for research and policy...

In research

- Reconsider the disciplinary mix to match the “tipping point” in debates.
- Seek relevant, applicable but yet-to-be-engaged theory, methods, cases and networks:
-- eg: urban studies, social psychology, public health, emergency and disaster policy, natural resource management, public policy...
- Define policy problems and decision making imperatives – often not the same as agency agendas, or researchers’ questions.

... is there no such thing as “adaptation policy”?

- A messy policy problem:
 - *multiple sectors.*
 - *multiple climate, etc contexts.*
 - *horizontally across jurisdictions.*
 - *vertically thru levels of govt and decision making.*
 - *multiple knowledge systems.*
- Adaptation policy is the task of embedding adaptation considerations in other sectors – matching detail with coordination.

In policy

- An “audit”, of on-the-books (or nearly so) policy options, coordinated across sectors for synergies.
-- *before starting lots of new projects.*
- Matched with an audit of barriers – legislative and policy assessment process (recall NCP).
- Something like a strategic environmental assessment regime, consistently applied, at state and federal levels, to embed adaptation considerations across sectors.
- Decision aids for policy option selection under conditions of uncertainty.
- Coordinating framework policy – climate or ESD?

Dovers, S. 2006. Precautionary policy assessment for sustainability. In: Fisher et al (eds). *Implementing the Precautionary Principle: Perspectives and Prospects*. Edward Elgar.

... and, the skills & knowledge

- Adaptation (and mitigation) requires different skills and knowledge:
 - *in tertiary and technical curriculum.*
 - *in professional workplaces.*
 - *in policy assessment and decision making.*
- And needs people – especially in local government, who will do much of the heavy lifting.
- **Urgent!** Assess, organise and consolidate available frameworks and tools, for example:
 - *eg. multiple integrated assessment projects, local govt risk assessments, methods of localising climate data and projections.*

For a model of open access information provision, see

http://www.naturaledgeproject.net/Sustainable_Energy_Solutions_Portfolio.aspx.

(In)conclusion

- Adaptation might be easier than some think.
- Numerous examples – identify and test.
- Re-invigorate the 'no-regrets' discussion.
- Match sectoral detail with strategic policy assessment and cross-sectoral coordination.
- *...open up adaptation to a wider set of skills and disciplines.*
- *... connect with existing agendas and skills, especially at local scale.*
- *...avoid reinventing wheels.*