Adaptation in New Zealand

An overview and some examples

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New Zealand

A brief overview

• 268,680 sq km
• 4.37 million people
• Agriculture and tourism both very important to the economy
• A mild climate, but very variable …

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Climatic variability and extremes…
can have a significant cost to the economy

• Cost of 2007/08 drought NZ$2.8 billion
• In 2007 weather related events cost more than NZ$96 million in damage

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Late 80s to 1990

• Ministry for the Environment (MfE) established under the Environment Act 1986
• ‘Climatic Change: Impacts on New Zealand’, published May 1990 by MfE
  – Comprehensive expert assessment of climate change impacts

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The 1990s

• The Resource Management Act (1991)
• No explicit requirement for councils to plan for the effects of climate change
• National climate change policy focus developed around mitigation
• The CLIMPACTS research programme focused on development of an integrated assessment model
  – Project discontinued
  – No uptake of the software within NZ
  – Subsequent duplication of effort with related work

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The 2000s

• MfE produced a series of summary publications on climate change impacts in 2001
• ‘4 million careful owners campaign’, focused on climate change mitigation
• Amendments to the Resource Management Act (2004) requiring that ‘particular regard’ be given to the effects of climate change
• MfE Policy guidance for councils regarding impacts of climate change and for coastal zone management
• No coordinated focus on adaptation
• No consideration of potential co-benefits from a coordinated sustainable development approach

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Adapting to climate change in eastern New Zealand, 2003-2005

The approach
- Overview of the science
- Summary of regional impacts
- In-depth farmer interviews and case studies
- A series of farmer workshops
- Regional workshops and case studies
- Science/Art interaction

Outcomes praised. Approach encouraged by MfE and former deputy Minister of Agriculture

Farm resilience

Regional resilience

Government approach in the early 2000s

2007 – MAF Plan of Action
- $175 million programme, principally focused on mitigation
- Minimal, if any, focus on co-benefits
- No critical analysis of potential maladaptations
- Adaptation work through:
  - Tech Transfer Programme (by tender)
  - Sustainable Land Management and Climate Change Programme (specific projects, contestable)
  - Sustainable Farming Fund (contestable)
Other current activities

- A few research projects through the Foundation for Research Science and Technology
- Funding cuts to Ministry for the Environment – minimal activity
- Other small ad hoc projects

On-going issues

- No clear national coordination of adaptation, nor wider consideration of a sustainable development context
- No capacity building prior to launch of MAFs Plan of Action
  - On-going ‘tech transfer’ approach as against developing adaptive capacity
- Tensions between economic drivers and long-term sustainability and resilience issues/needs (potential for maladaptation)
- Inconsistent regional policy actions
- Cross-sectoral integration non-existent

What’s happening on the ground?

Coastal zone

Planning for sea-level rise in Hawke’s Bay, New Zealand

The Resource Management Act (1991)

- The Resource Management Act 1991 (RMA) requires all local authorities to address coastal hazards in order to promote the sustainable management of natural and physical resources
- This includes taking future sea-level rise into account
- Hazard zones need to be identified but they can be (and are) contested through the environment court

Defining coastal hazard in Hawke’s Bay

- A regional approach to planning for coastal hazard
- Proposed Regional Coastal Environment Plan (RCEP) publicly notified in August 2006
- Approved in 2008
- Hazard zonation based on now outdated IPCC estimates
The WOW campaign

- Coastline at Te Awanga and Clifton is actively eroding, even without sea-level rise
- Properties are in a defined coastal hazard zone (includes SLR)
- Local council considered relocation the best option
- Coastal residents don't want to relocate and are actively campaigning for hard engineering protection
- Their properties are uninsurable
- Current cost of hard engineering solutions is nearly NZ$10 million
- No guarantee that protection will work
Land management in Hawke’s Bay

Land area of 1.42 million hectares
- Mountains and hill country make up 75%
- 33% indigenous forest
- 10% plantation forest
- 20% at risk of significant erosion which may take 100 years to reverse (at current rates)

Historical context

- Pre-European fires
- Further land clearance with European settlement
- Government subsidies for ‘scrub’ clearing and aerial fertiliser application
- Focus on soil conservation since 1940s
- End of subsidies in 1980s

Recent history

Cyclone Bola, 1988
- Severe flooding and erosion
- NZ$112 million for repair and recovery
- NZ$37 million for insurance claims (NZ$60.55 million in 2007 terms)
- Long-term environmental costs

Are we getting the message?

- A minority are being proactive in planting trees:
  - Fencing waterways
  - Protecting remnants of native forest
  - Woodlots
  - Shelter
  - Erosion control
  - Drought fodder
- The majority argue that trees cost money, and don’t make money
  - What’s the cost of doing nothing?
- The proactive farmers argue for education not regulation

April 2011 storm
What future?