Climate change

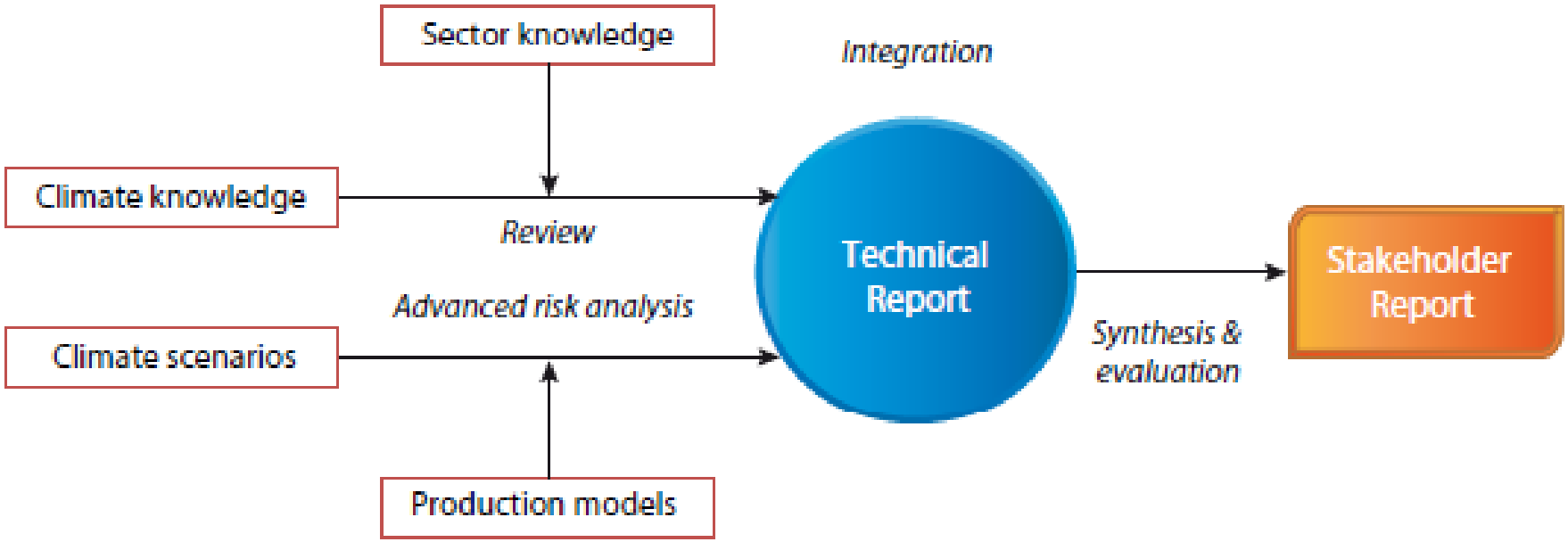
Impacts &

Adaptation options

Thinking ahead & being prepared…

- Adaptation Technical Working Group
- Industry / sector events / workshops
  - what happens on farm?
  - what can we do & what would it look like?
- **Priorities**
  - **raising awareness, understanding impacts & developing tools**

… understanding the impacts



Who, how, what, where…

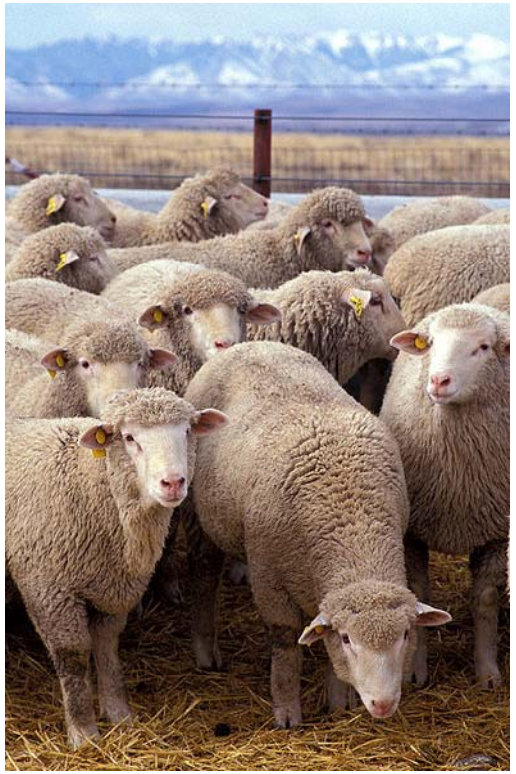
- NIWA, AgResearch, Plant & Food, Scion, Landcare & Dairy NZ
- climate 'downscaled' to model on farm production
- impacts, production &mgmt
  - tactical, strategic and transformational
- Technical + Summary report

What more do we know?

- production impacts updated
- higher carbon dioxide (fertilisation) effect
- drought - doubling to over doubling
  - more flexibility, buffers, setting fall back positions
- water - significant variation by catchment
  - managing water amid increasing uncertainty
- cross sector
  - erosion, pests & diseases, infrastructure, risk management…

Sheep & Beef

- impacts are positive – dry matter gains – & negative – more feed supply variability
- average pasture production ↑
- seasonality will drive mgmt
  - ↑ spring growth
  - ↓ autumn & summer growth
- options
  - stocking rates, feed conservation, mating times, animal growth rates



Changing pasture growth rates 1990/2040

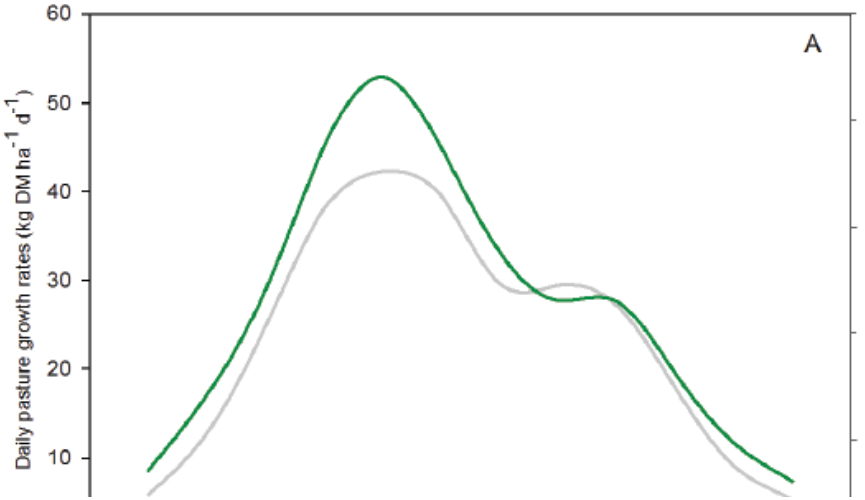


Figure 4. Projections of monthly pasture growth rates under the high climate change scenario for the 1990 (grey) and 2040 (green) time periods in Southland. (A) Average monthly pasture growth rates.

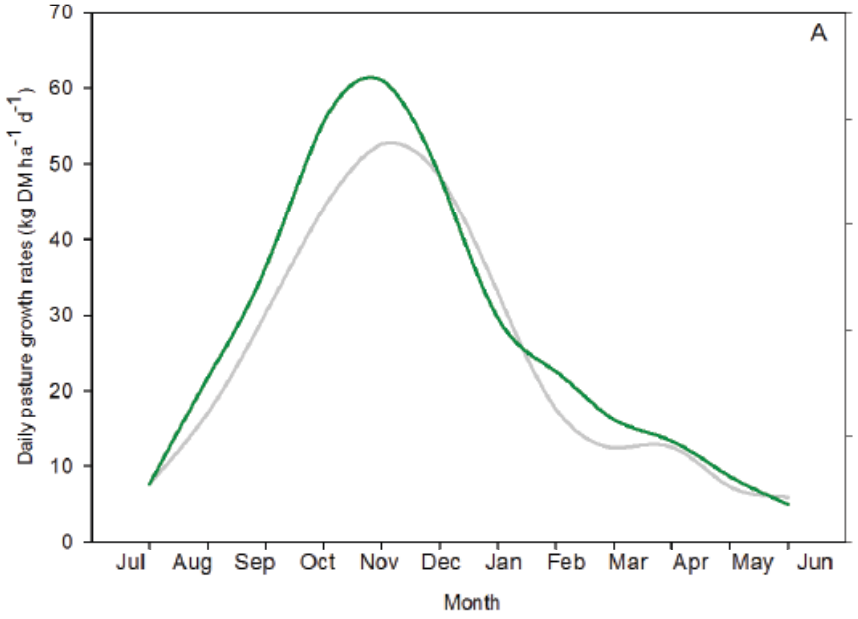


Figure 6. Projections of monthly pasture growth rates under the high climate change scenario for the 1990 (grey) and 2040 (green) time periods in Waikato. (A) Average monthly pasture growth rates.

Dairy

- seasonal changes
  - ↑ winter and spring growth rates
  - shorter springs & earlier summers
  - more variable autumns
- changes in seasonal production timing
  - shifts in spring breakeven dates & planned calving dates
  - ↑ feed deficits & ↑ surpluses
- options
  - Irrigation, pasture renewal, milk platform infrastructure

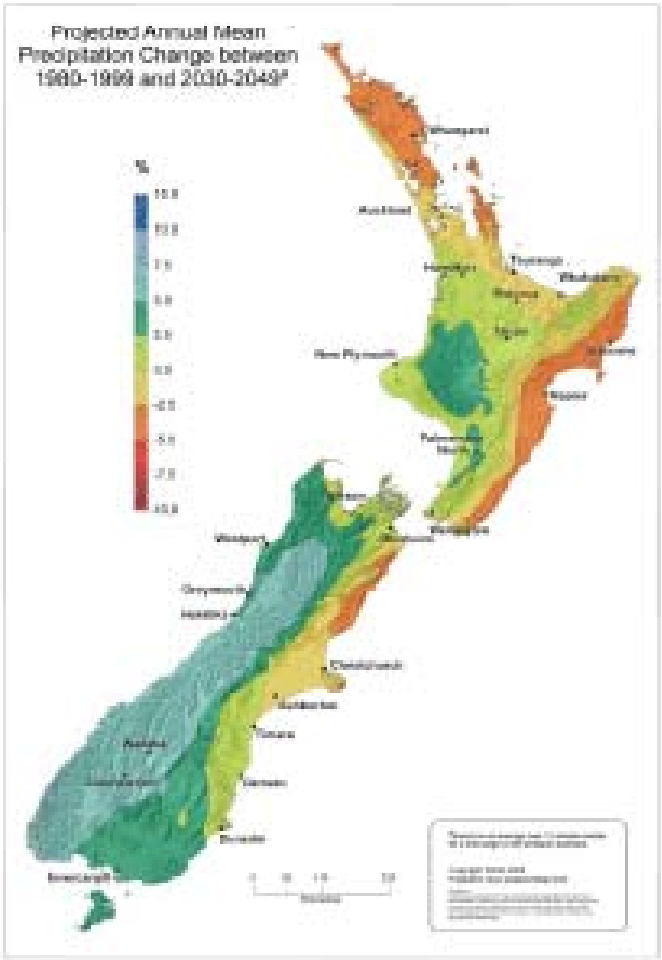
Broad acre cropping

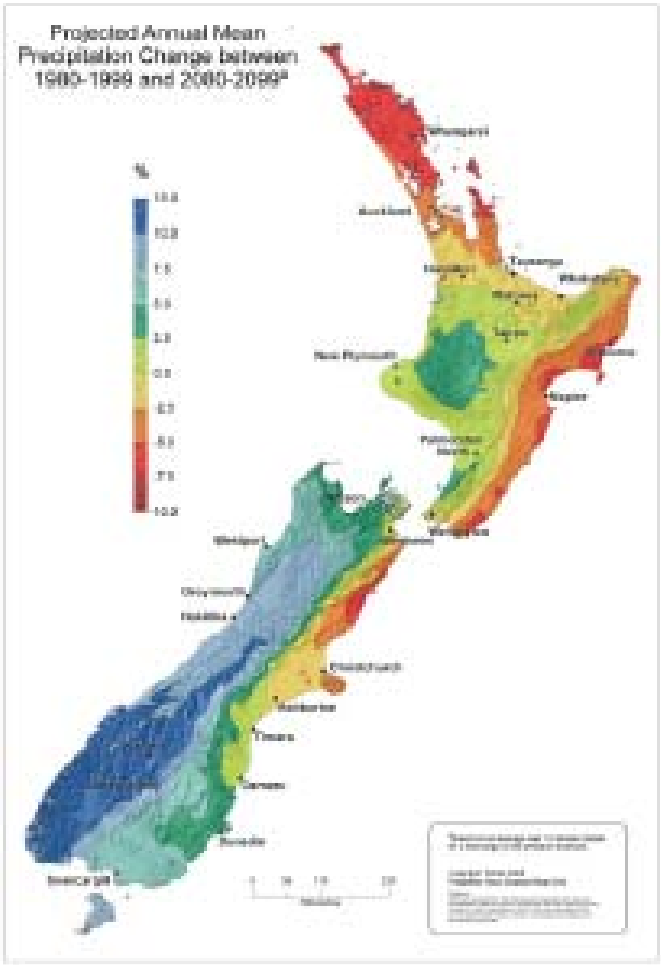
- affects yield & quality
- cereal crops ↑
- some crops may ↓ (maize, peas & potatoes)
- Options
  - improving irrigation & water efficiency, new crops, changing sowing / cropping dates

Forestry

- ↑ yields radiata pine
- ↑ risks
  - wind
  - fire
  - storms
  - pest & disease
- Options
  - pest & erosion mgt, monitoring thinning regimes, risk mapping

Annual mean precipitation changes





Water

- average and variability set to change
  - ↑ south & west, ↓ north & west (particularly summer & autumn)
- significant variation by catchment
- ↑ evaporative demand
- soil moisture levels fall more rapidly
- ↑ floods and droughts
- ↑water temperature
- ↑ stress in-stream biota
- ↑ demand (production & in-stream)

“…planning for the future not the past…”

- old rules of thumb may no longer apply
- talk, read, look at your region/enterprise…
- build on good practice
- identify key thresholds and opportunities
- review stockwater, drainage, stopbanks & storage
- improve water efficiency and management
- look at cropping and grazing schedules
- get involved in catchment management

Want to know more?

- technical and summary reports
- reports, fact sheets and case studies
  - sector, region, subject
- toolbox
- industry/sector bodies
- Australia, UK and US

www.mpi.govt.nz/
environment-natural-resources/
climate-change

Resources and Tools - Climate Change

Environment & Natural Resources

- Soil and Nutrients
- Water
- Climate Change
  - Reducing greenhouse gases and climate change
  - Impacts and adapting to climate change
  - Other Climate Change Initiatives
  - International Response to Climate Change
  - Research and Funded Projects
  - Resources and Tools
- Emissions Trading Scheme
- Funding Programmes

Adapation Toolbox

The Climate Change Adaptation Toolbox has been designed to help you find out about a changing climate....

Read more

Background information

Previous consultation and background information about Climate Change...

Read more

By Topic

Factsheets, Case Studies and additional information by Topic...

Read more

By Sector

Factsheets, Case Studies and additional information by Sector...

Read more

Last Updated: 12 January 2011

Related Resources

No related resources found

Contact MPI

View our contact details

for general enquiries phone

0800 00 83 33

Resources: adaptation tool box

Environment & Natural Resources » Climate Change » Resources and Tools » Adaptation Toolbox

Environment & Natural Resources

- Soil and Nutrients
- Water
- Climate Change
  - Reducing greenhouse gases and climate change
  - Impacts and adapting to climate change
  - Other Climate Change Initiatives
  - International Response to Climate Change
  - Research and Funded Projects
  - Resources and Tools

Introduction

What is the Toolbox?

The Climate Change Adaptation Toolbox has been designed to help you find out about a changing climate, what it might mean for your business and what you can do. The Toolbox uses a five step risk-based process, providing information and resources to work through the process.

Why think about adapting to a changing climate?

In summary…

- opportunities and challenges for farmers, growers, foresters and rural communities
- action can be from existing good practice to more strategic or transformational options
- adaptation is about future proofing farm businesses and profitibility
- resilience over the long term means understanding climate change and acting