

# Understanding rural landholder responses to climate change:

## Factors influencing landholder capacity to adapt

*research* FOR A SUSTAINABLE FUTURE

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# Introduction

- The research questions
- The research project
- Theoretical framework
- Findings
- Conclusions

# The research questions

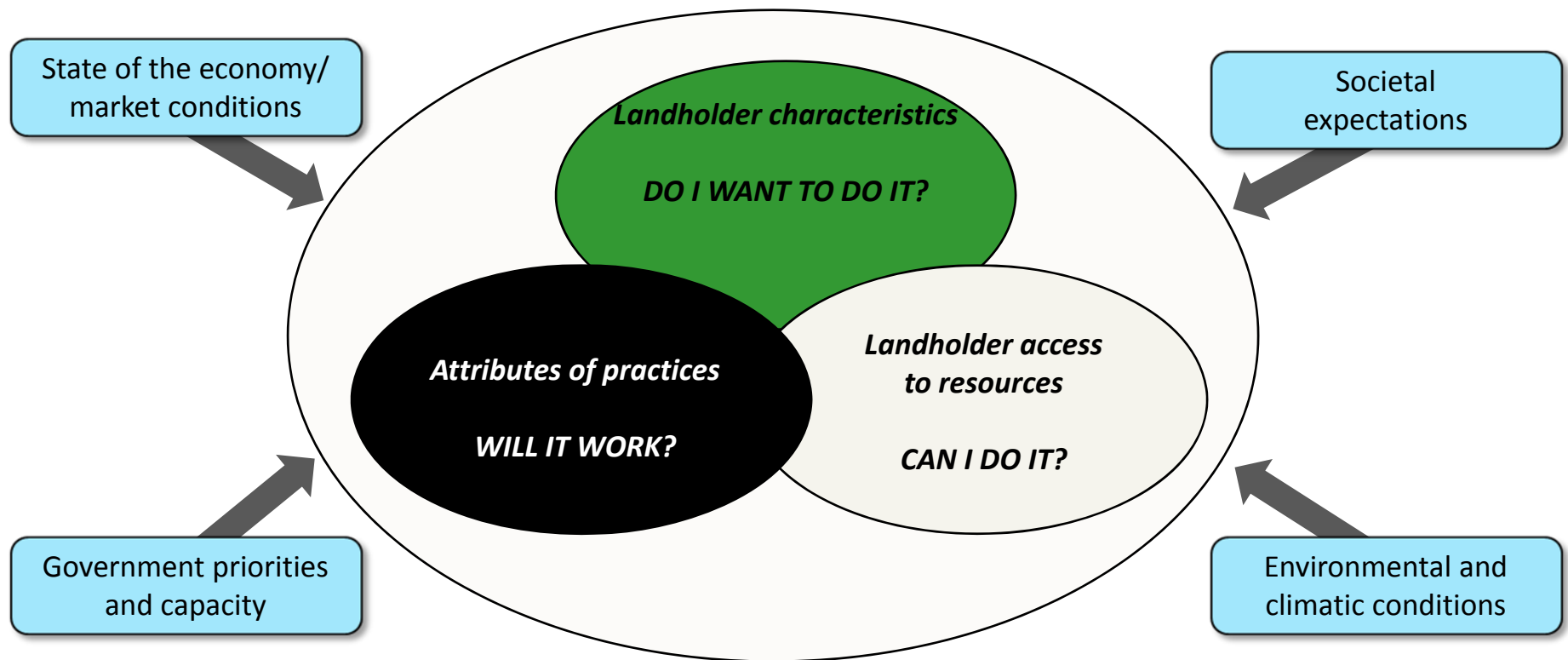
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A social science approach to understanding **adaptation** decisions amongst rural landholders

1. What is the range of landholder beliefs and responses related to climate variability and climate change.
2. How important is climate as a factor contributing to enterprise/land management decisions.

# Theoretical framework

## Factors influencing landholder decision making



# The research approach

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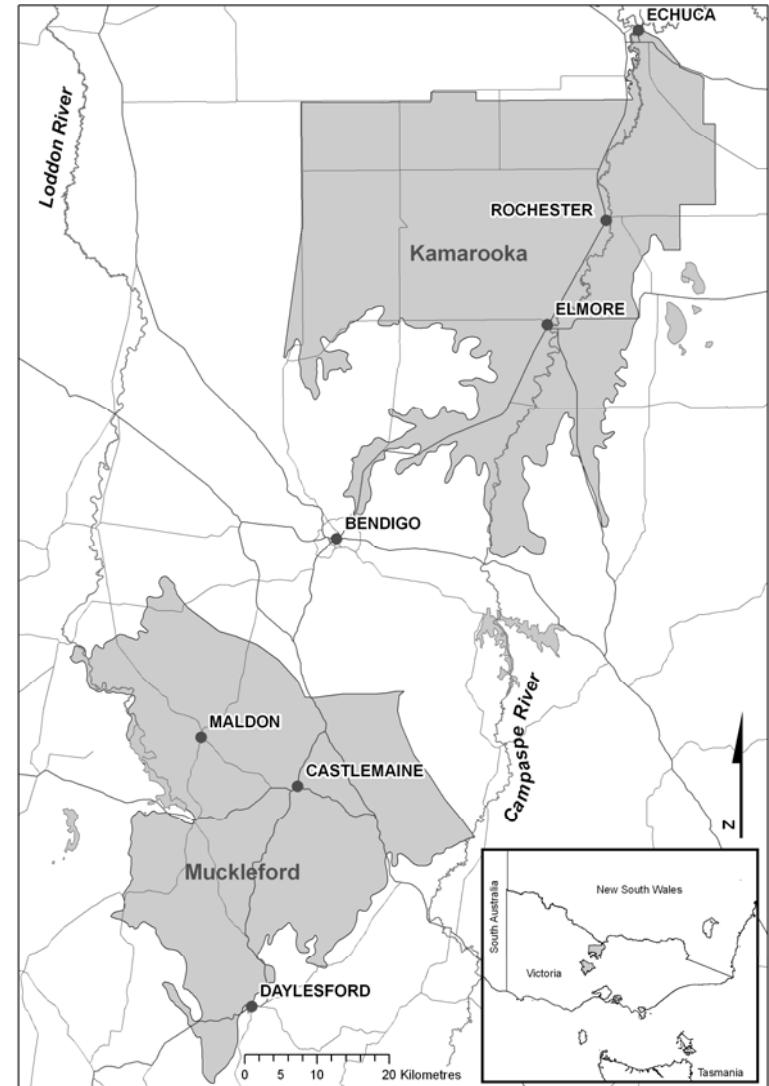
- North Central CMA region
- Qualitative approach
- Field research May 2008



[http://www.nccma.vic.gov.au/What\\_We\\_Do/index.aspx](http://www.nccma.vic.gov.au/What_We_Do/index.aspx)

# The research approach

- Two case study areas
- Different physical and social contexts.
- **Kamarooka**: flat, heavy soils, larger farming properties.
- **Muckleford**: rocky hills, light soils, smaller properties, more non-farmers and absentees.

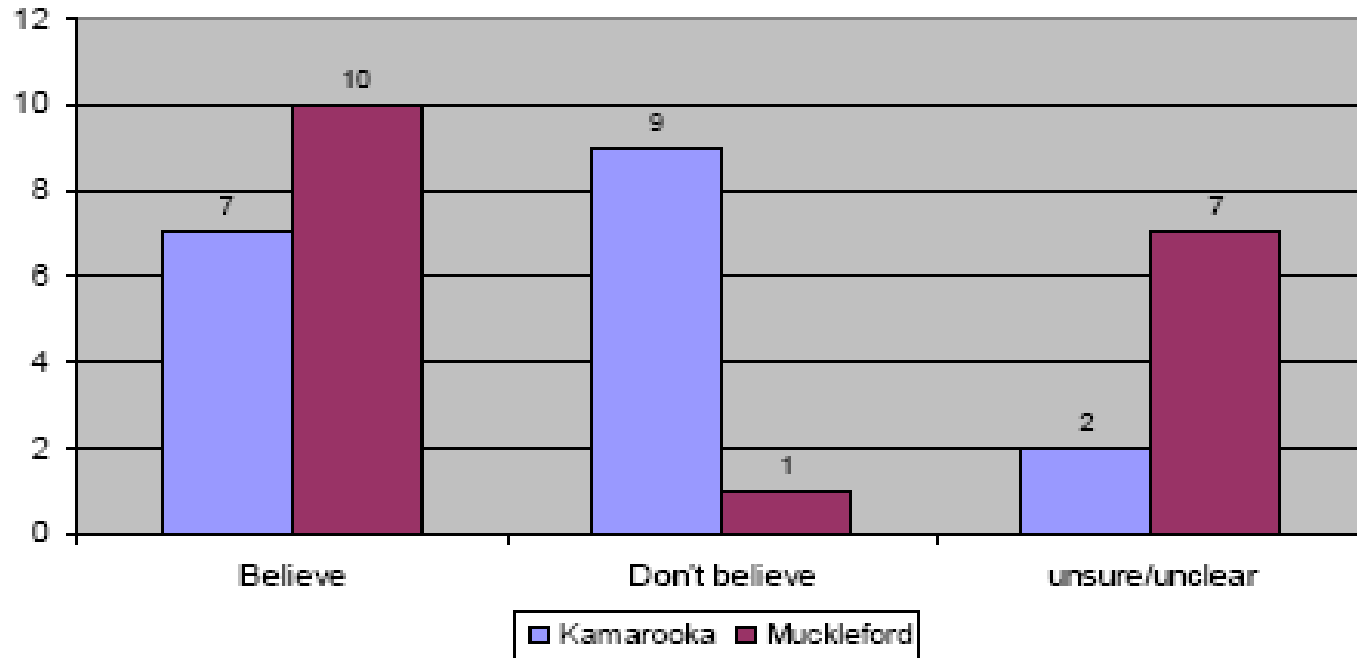


# The research process

Table 1: Summary of interviewee characteristics

	Muckleford	Kamarooka	Total
Interview with males %	83	100	92
Interviews with females %	22	39	31
Age over 65 %	28	6	17
Farmers %	72	94	83
Managing property > 10 yrs %	78	83	81
Property in family (median yrs)	46	82	62
Mean property size (hectares)	374	1576	975
Cropping %	11	94	53
Regen/reveg as primary use %	28	0	14

# Belief in climate change



- *Climate change has to be real, so many people are talking about it*
- *Climate change is not real ... it's just part of the natural cycle ... we are going back to more normal years.*
- *Do you know? ... The climate has always been changing. There are a lot of questions and not a lot of answers.*

# Responses to climate

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- Climate one of many factors that interact in complex and dynamic ways.
- External factors: climate, economic conditions
- Individual factors: individual characteristics, access to resources

# Adaptations

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- Landholders respond to multiple stresses
- In discussing drought, diversity of responses:
  - water – improve security of water supply
  - feed – improve security
  - crop – reduce risk(?) - Kamarooka
  - stock
  - native veg
  - enterprise

# Adaptations – response to risk

- **Muckleford:** hilly, light soil, small scale, single enterprise.  
**Response:** shift towards low input/management system, reduce diversity, reduce debt/financial risk, reduce env degradation, workload.  
*- Why take risks and bust your gut when climate is against you?*
- **Kamarooka:** flat, fertile soils, larger scale, mixed enterprise.  
**Response:** Seek greater efficiency – expanding, intensifying, refining operation.  
*- Happy to go into debt ... spend a dollar to make a dollar*

# Adaptive capacity

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- Agronomic potential
- Lucerne *Lucerne is very important to us. Even over the dry times lucerne just keeps growing, it's amazing what you can get off it!*
- Farming as occupation
- Diversity of enterprise
- Belief in climate change(?)

Perceived **ability to adapt** to climate change, and **optimism** were found to be greater in Kamarooka, corresponding to higher **agronomic potential**, greater enterprise **diversity**, adoption of **lucerne**, and higher proportion of firm **non-believers** in climate change.

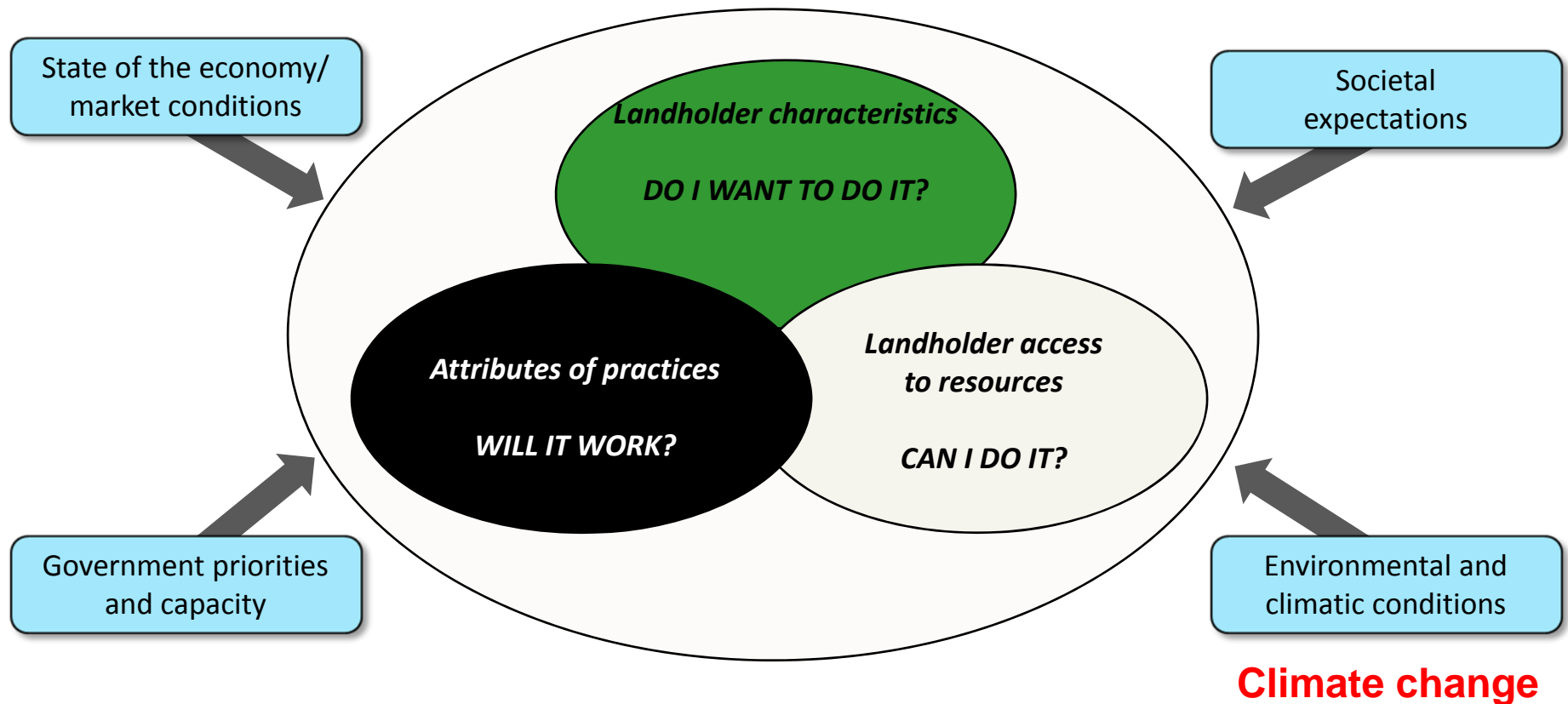
# Conclusions

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- Many possible adaptations (including adaptations outside direct property management), and many factors influencing adaptation decisions.
- Importance of these factors varies according to the specific adaptation considered, the context, and the characteristics of the individual.
- Adaptation is a process of ‘adaptive management’, that is, there is no universal right or wrong adaptation. Individuals consider the options, their situation and the risks, make decisions and learn from the outcome in an iterative process. While we can make some generalisations about factors, what works for an individual will be very context specific.

# Theoretical framework

## Factors influencing landholder decisions making and adaptive capacity



*our aim...*

" TO UNDERTAKE INTERNATIONALLY RECOGNISED RESEARCH IN SOCIAL AND ENVIRONMENTAL SUSTAINABILITY THAT ENHANCES THE LIVELIHOODS AND LIFESTYLES OF PEOPLE IN RURAL AND REGIONAL AUSTRALIA. "

*PROFESSOR ALLAN CURTIS, DIRECTOR*

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# Adaptations

- Landholders respond to multiple stresses
- In discussing drought, diversity of responses:

