

Understanding rural landholder responses to climate change:

Outline of progress to date

research FOR A SUSTAINABLE FUTURE

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Introduction

- Initial research questions
- Theoretical framework
- Initial research approach
- Findings
- Follow-up research

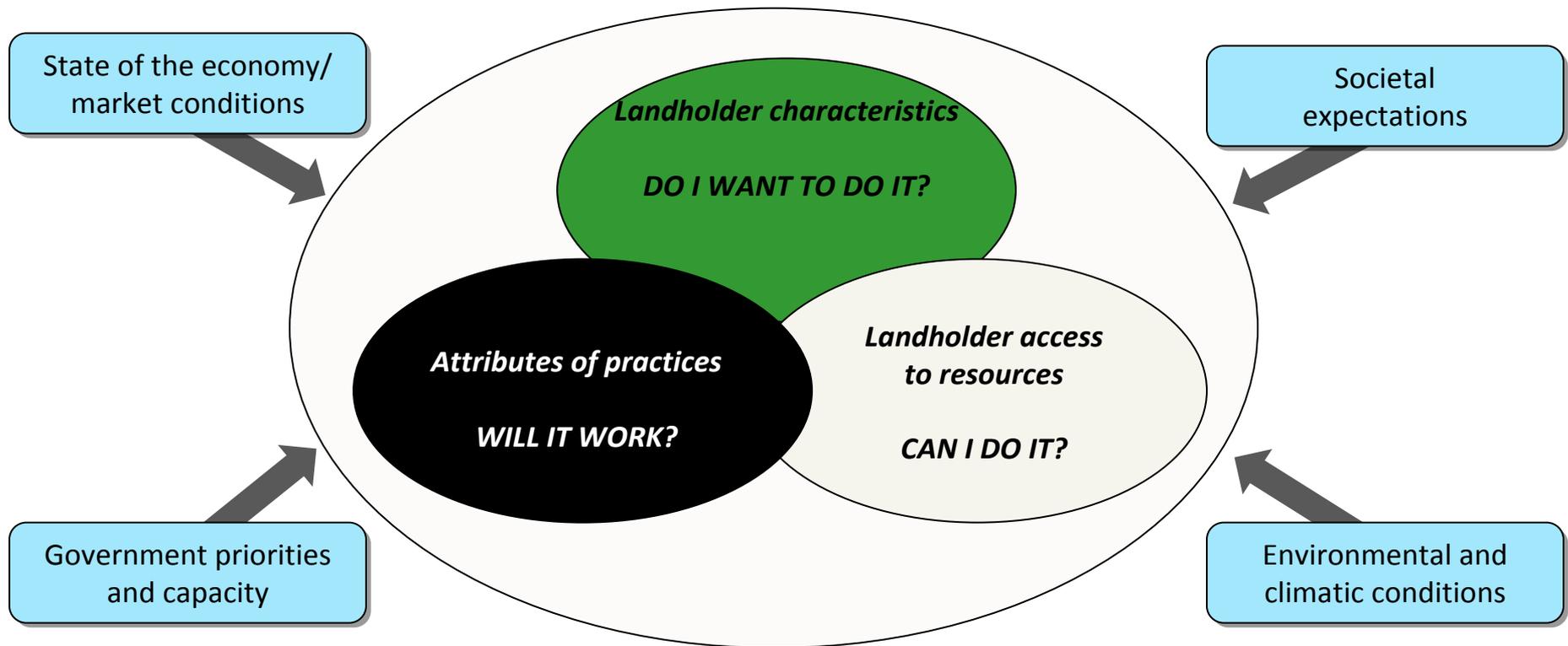
Initial research questions

A social science approach to understanding rural landholder attitudes and adaptation responses to drought and climate change

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

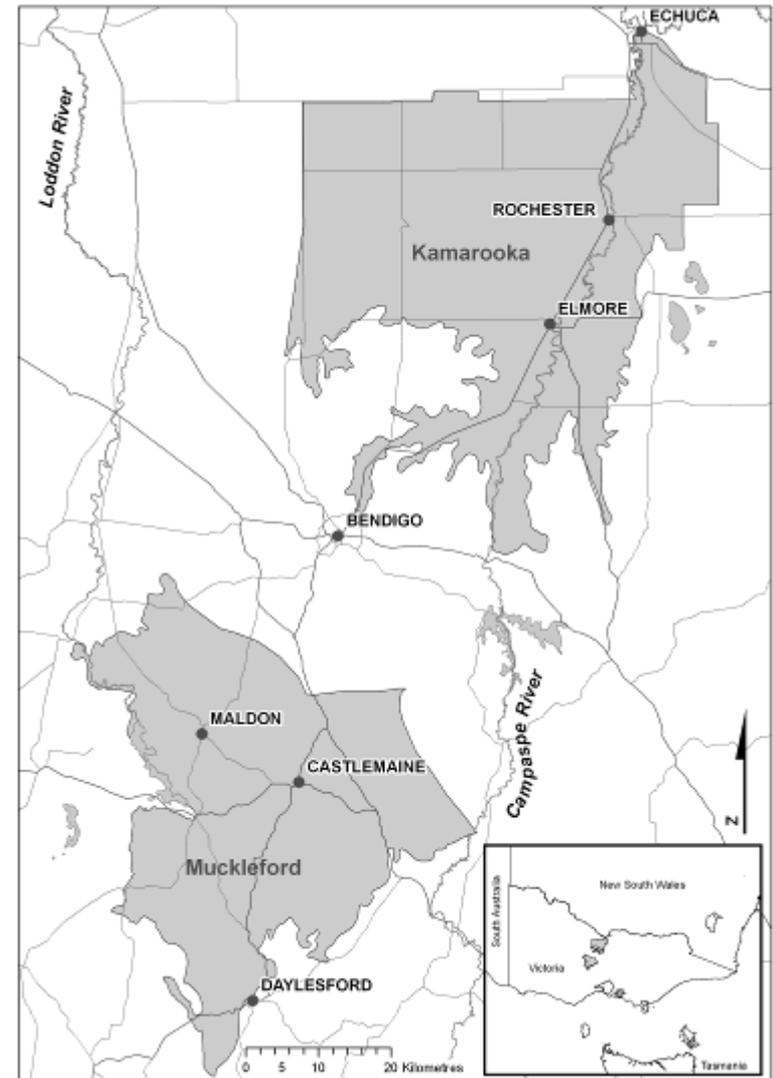
- North Central CMA region
- Qualitative approach
- Field research May 2008



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

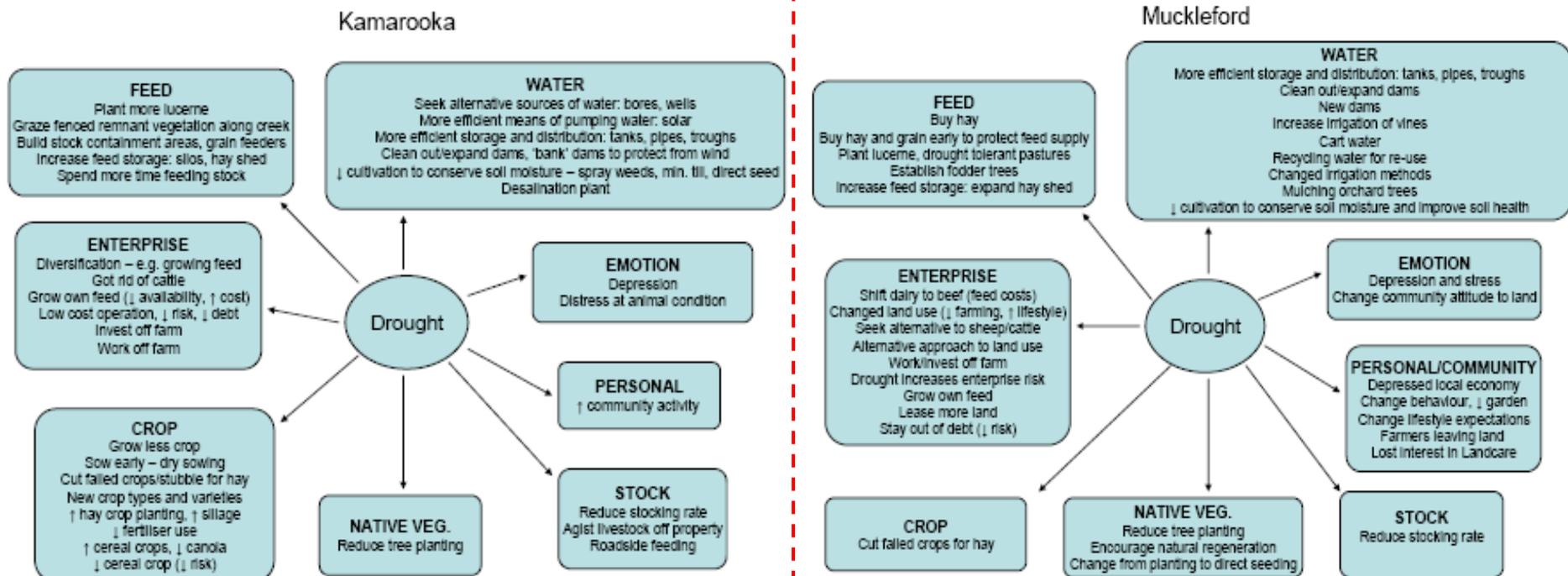
	Muckleford	Kamarooka	Total
Interview with males %	83	100	92
Interviews with females %	22	39	31
Age over 65 %	28	6	17
Farmers %	72	94	83
Managing property > 10 yrs %	78	83	81
Property in family (median yrs)	46	82	62
Mean property size (hectares)	374	1576	975
Cropping %	11	94	53
Regen/reveg as primary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

Responses to climate

- 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

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



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

Conclusions

- Many possible adaptations (including adaptations outside direct property management), and many factors influencing adaptation decisions.
- Conceptual model provides a powerful explanatory tool that highlights the importance of context as a factor influencing decisions.
- Context is critical in understanding adaptation responses. While land management decisions are largely property based, and unique for each property, some factors act in such a way that patterns can be identified at landscape scale.
- Different responses to risk were identified across two case study areas, broadly based on agronomic potential of properties.

Conclusions.....

- The research also raised a number of questions, particularly in relation to identifying causality of observed correlations.

E.g. - what are the links between **agronomic potential**, **enterprise diversity**, and **optimism** in future or belief in capacity to adapt to future climate?

- under what conditions might **belief** in climate change lead to **pessimism** in future and resignation or reluctance to act?

- under what conditions might **belief** in climate change lead to **anticipatory action**, or transformation of the enterprise?

Follow up research

Two further case study areas in North East Victoria expanding on previous research

- **Qualitative research** (interviews) to replicate previous research and expand understanding of contextual factors influencing adaptation, and with specific focus on how landholders understand climate change risk.
- **Quantitative research** (mail surveys) exploring questions raised in previous research, in particular:
 - what is the role of personal factors (beliefs about climate change, world views, risk perception and self-perception of capacity to adapt) in determining the nature of adaptation response (from reactive to anticipatory to transformative)?

Looking forward

- Completion of current research, findings available early 2010
- Ongoing research to explore relationships between context, individual characteristics and adaptation responses
- Research forum, late 2009, exploring current research and future directions in research in rural land manager attitudes and responses to climate change



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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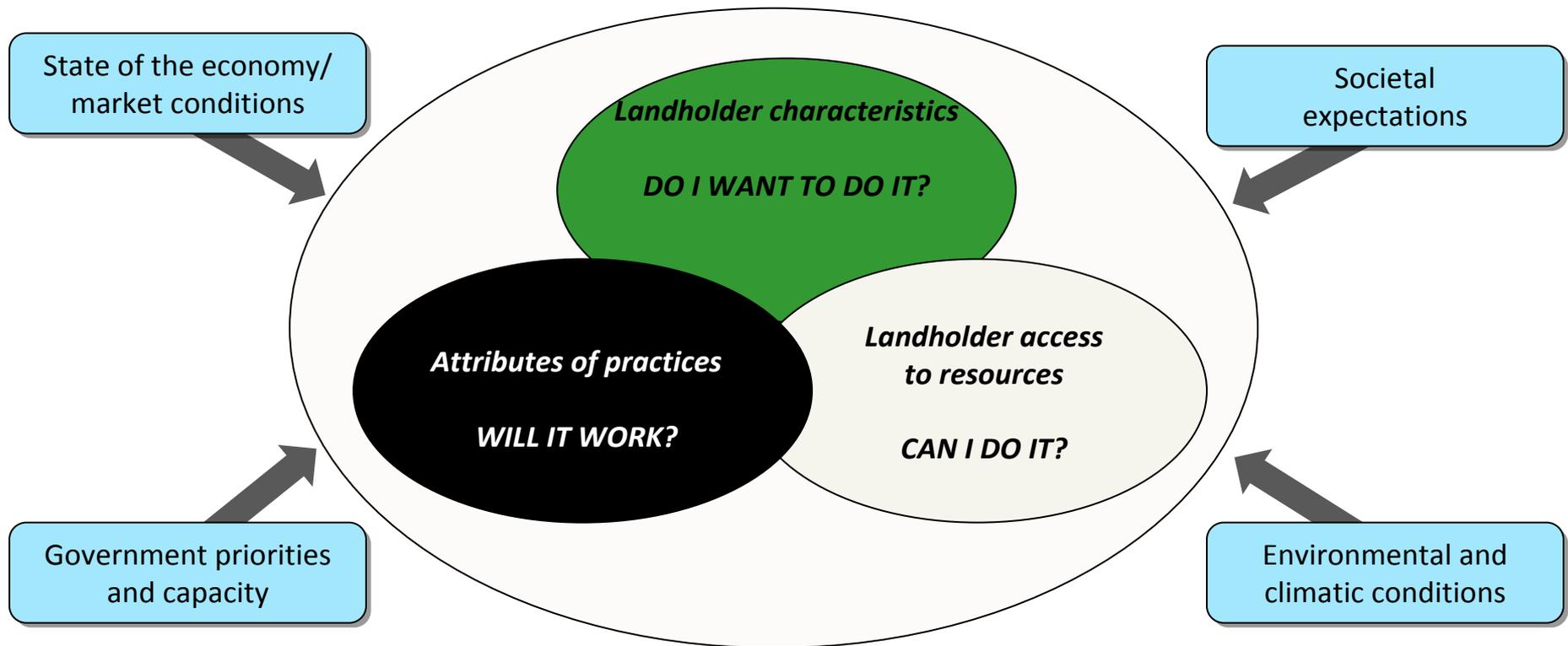
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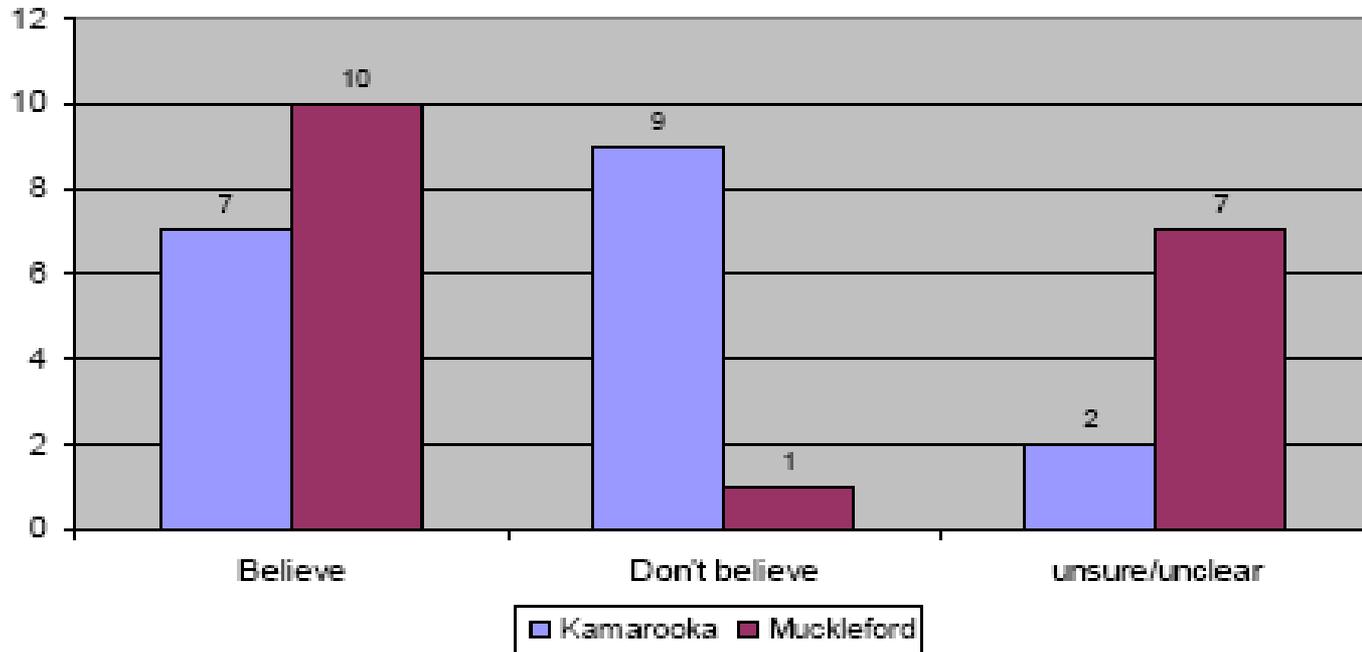
Theoretical framework

Factors influencing landholder decisions making and adaptive capacity



Climate change

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.*

Adaptations

- 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

Adaptive capacity

- 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.