Climate Risk Information and Communication: Understanding Farmers Attitudes Better to Facilitate Behaviour Changes

Chris Evans
Supporting farm businesses and rural communities to be resilient to adverse conditions

Introduction
Over the last 8 years studies have shown that Australian farmers perceptions of climate change threat were:

• Ambivalent  (DAFWA, 2006)
• Uncertain  (Milne, Russell and Stenekes, 2008)
• Resistant  (Fleming and Vanclay, 2009)
• Dismissive, uncertain and ambivalent  (Evans, 2013)
• Dismissive and uncertain  (Noonan et al. 2013)
The question was:

Why were these the predominate responses to climate change threat in Australian farming communities?

Especially given the scientific evidence and efforts to communicate the threat…
The scientific evidence was not enough…

Assuming farmers would accept the evidence and respond to the threat was not enough…

Using normal information extension approaches was not working…

Then how best communicate the threat and promote adaptive behaviours?
Go back to basics and understand:

What contributes to the development of Australian farmers' attitudes and responses to climate risk?
Risk/threat perception influences?

- Farming is a **socio-cultural** practice
- Adoption is a **socio-cultural** process
  (Vanclay, 2004)
- Drought is a **socio-cultural** issue
  (Botterill, 2003)
- Risk/threat is a **socio-cultural** construct
  (Sjoberg, 2001)

Attitudes are derived from socio-cultural beliefs, values, knowledge and experience/traditions therefore:

- **Attitudes define risk!!!**
  (Sjoberg, 2001)
The Research

*Rural Western Australians attitudes to climate change, climate change science and governance*

The questions:
Was climate change occurring?
Was it natural or human induced?
Was it a major threat to the future of farm businesses and rural communities?
The research also examined:

- What contributed to the development of attitudes?
- Where perceptions of science and government influencing attitudes?
- What influenced different groups of responses to climate change risk?
Methodology

Surveys conducted during three major field days:
- Dowerin (n=129)
- Newdegate (n=122)
- Mingenew (n=78)

Secondary locations (n=82)
Total surveys 411

Analysis
- PATN; Numerical Taxonomy;
- Multivariate approach
- PASW® (SPSS, 2009)
- Excel (2003, 2007)
Is climate change occurring & is it natural (Not influenced by greenhouse emissions)

- Climate change is not natural: 24%
- Uncertain if climate change is occurring & if it's natural: 28%
- Believe climate change is natural: 21%

Supporting farm businesses and rural communities to be resilient to adverse conditions
Climate change is a major future threat to communities & business

Perception of climate change threat

- No Threat: 24%
- Not sure: 17%
- Probably disagree: 16%
- Disagree: 18%
- Probably agree: 17%
- Agree: 10%
- Unsure: 16%

42% - Threat to communities
33% - Threat to farms/businesses
2008:

- 78% important to be informed
- 37% scientific information useful
- 33% information easy to understand

- 33% perceived climate change a threat to their business

Evans *et al.* 2011
Is knowledge of climate change being transferred? It may be beginning to… but

Climate Change is Occurring?

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Uncertain</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>26%</td>
<td>47%</td>
</tr>
<tr>
<td>2008 (N = 255)</td>
<td></td>
<td>32%</td>
</tr>
<tr>
<td>2011 (N = 386)</td>
<td></td>
<td>27%</td>
</tr>
</tbody>
</table>

Derived from Evans et al. 2011; Noonan et al 2013

Supporting farm businesses and rural communities to be resilient to adverse conditions
Perceptions

A normal risk

... most farmers are accustomed to working within a range of localised climate variability events and accept this climatic variability as “normal” (Evans et al. 2011).

.........................this may reduce farmers perception of risk/threat and make them less receptive to changes to reduce future risks (Pannell 2010).
Attitude and belief types in rural WA

PATN Analysis n = 386

9 clusters of values three major typologies

Evans et al. 2013
‘Acceptors’
61% understood information
• Accept climate change not natural
• Least experience in an area/farming/family history in farming
• Values scientists, science & scientific information
• Noticed a lot of change in local climate – link it to climate change
• Climate change is a threat to communities/business and a priority

‘Uncertains’
32% understood information
• Unsure if climate change is natural
• Value scientists’ climate change views;
• But questions integrity of scientists and validity of the information
• Noticed some changes in local climate - unsure if linked to climate change
• Climate change might be a threat to communities/businesses but not a priority

‘Sceptics’
29% understood information
• Believe climate change is natural
• Most experience in an area/farming/family history in farming
• Do not value scientists, science or scientific information
• Not noticed much change in local climate
• But sure changes not linked to climate change
• Climate change not a threat to communities/businesses and not a priority
The argument for a different approach to climate risk & drought policy

Three major typologies with significantly different attitudes to climate change and risk indicates

Generic climate risk information extension will not...can not...is not working

Government organizations and science need to reassess the methods by which risk is communicated and uncertainty is reduced

Botterill and Mazur (2004), Howden, Nelson and Stafford-Smith (2008)
A simplified model of (ineffective) climatic change information delivery (extension) to farmers

Reductionist Scientific Underpinning (positivism) (Nelson et al 2008)

Process

Capacity & Competency

Context

Content

Farmers perceive information as derived from distant sources

Causes conflict between science and farmers knowledge forms (Holloway, 1999)

Content lacks relevance, credibility and is therefore not salient
Piloting a different (facilitated learning) model based mainly on:

- **Context** – using farmers experience and knowledge of their local climate

- **Salience**
- **Credibility**
- **Legitimacy**

Cash *et al.* (2002)
Shifts in attitude to climate change risk (Noonan et al, 2013)

Moved from ambivalent to belief that it is impacting (40 – 50%) (may be an issue) to 80% (is a problem that needs to be addressed)

“*Global climate change could be possible. Need 6 panadol.*”

“There is a possibility slightly larger than I previously accepted that climate change may be real”

“*Climate change sucks!*”
How well prepared is your business to deal with drought/climate variability?

Paired entry and exit surveys for 260 = 66% businesses
Conclusions

Attitudes and therefore perceptions and behaviours can be changed!!!

Social context is critical to changing information into knowledge

Experts (scientific/policy) qualifications mean nothing to farmers - farmers do not extend automatic credibility/validity to science & extension (Vanclay 2004)

Reduce the hubris-

Farmers and rural communities knowledge forms must be acknowledge by science and policy and in no way derided (Holloway 1999)
Supporting farm businesses and rural communities to be resilient to adverse conditions

The need for change?

John Noonan
Christine Storer
Kay Bodman
Bevan Bessen
Margo O’Byrne
Gary Burke
Peter Cooke
Gavin Foord

Helen Grenfell
Graham McAlpine
Cec McConnell
Roy Murray-Prior
Mick Quartermaine
Brenda Scott-Ladd
Angela Wardell - Johnson