

Australia's Farming Future Final Market Research Report

Understanding behaviours, attitudes and preferences relating to climate change

Prepared For:

Australian Government Department of Agriculture, Fisheries and Forestry

Submitted by

David Donnelly
Rob Mercer
Jenny Dickson
Eric Wu

October 2009

**instinct and reason
SYDNEY**

20 Poplar Street, Surry Hills
NSW, 2010 Australia
+61 (2) 9283 2233 (voice)
+61 (2) 9283 6644 (fax)

Contents

Glossary	4
1 Executive Summary	5
2 Background and objectives	8
2.1 The need for research	8
2.2 Research study objectives	9
3 Study Methodology	10
3.1 Target Audience	10
3.2 Study phases	10
3.3 Data handling	12
3.4 Reporting	12
4 Definitions and understandings	13
5 Climate change: beliefs, attitudes and behaviours.....	14
5.1 Beliefs and attitudes towards climate change.....	14
5.1.1 Diverging views between urban dwellers and primary producers.....	14
5.1.2 Converging views between urban dwellers and primary producers	15
5.1.3 Urban dwellers attitudes to climate change and primary producers	15
5.1.4 Reasons and defences for primary producer attitudes	17
5.2 Why do they stay on as primary producers?	20
5.3 Challenges facing primary producers.....	21
5.3.1 Business related challenges	21
5.3.2 Drought and climate challenges	22
5.3.3 Personal and social challenges	22
5.3.4 Increasing legislative demands.....	23
5.4 Current behaviour in adapting to climate change and drought.....	24
5.4.1 Adaptive nature of primary industry	24
5.4.2 Diffusion of new ideas and practices	24
5.4.3 Decision making process.....	26
5.4.4 Types of adaptive behaviour	27
5.5 Barriers and motivators to change.....	27
5.5.1 Motivators	28
5.5.2 Barriers.....	29
5.5.3 Importance elements of adaptation initiatives	31
5.6 Mitigation and carbon trading	32
5.7 Segmentation.....	33
6 Developing a message	36
6.1 Key elements.....	36
6.1.1 Personally relevant information	36
6.1.2 Emotionally engaging communications	36
6.1.3 Trusted sources	37

6.1.4	Awareness and use of programs.....	39
6.1.5	Clarity and conciseness of messages.....	40
6.2	Benefits to be communicated	41
6.3	Distribution and tone.....	42
6.3.1	Communicating to Indigenous primary producers	44
6.3.2	Communicating through peak industry organisations and local producer groups.....	44
6.4	How to reach and engage with primary producers	45
6.5	The decision making process and who is involved	46
7	The role of policy and programs.....	48
7.1	Research and development investment	49
7.2	Training and development.....	50
7.3	Exit subsidies	51
7.4	Other subsidies.....	52
7.5	Specialist advice.....	52
8	Communication implications and recommendations	53
	Appendices.....	56
	Appendix I – Desktop research report	56
	Appendix II – Focus groups discussion guide	68
	Appendix III – Survey questionnaire	76
	Appendix IV – Sample profile.....	94
	Appendix V – Fishing industry specific insights	99
	Appendix VI – Forestry industry specific insights	101

Table of figures

Figure 1: QB2. Tell me whether you agree or disagree or neither with the following statement? Human activity is the primary cause of climate change: Base: Total Sample	14
Figure 2: QB1. Which of the following statements best describes how you go about making new changes on your farm?	25
Figure 4: QG1. A range of organisations and agencies are involved in providing assistance to primary industry in responding to changes in climate like extended dry spells. What organisations or agencies have you heard of that provide assistance to farmers?.....	38
Figure 5:QG3. A range of programs and funding assistance is available to primary industry to adapt in response to climate change. What programs have you heard of that provide assistance to farmers?	40
Figure 6:QG4. Which of the following programs, if any, would you consider receiving assistance from? Base: Primary producer - Decision Makers.....	40
Figure 7: QE2. Overall, do you strongly approve, approve, neither, disapprove or strongly disapprove of the Australian Government supporting Australian farmers to adapt their practices in response to climate change?	48

Glossary

Term	Explanation
AFF	Australia's Farming Future
Primary producer	An individual, partnership, trust or company carrying on a primary production business in plant or animal cultivation, fisheries or forestry.
The department	Department of Agriculture, Fisheries and Forestry
Climate Change	Includes both natural variability and human induced change to climate through increased greenhouse gas emissions.
Adaptation	Adaptation is about taking action to increase the ability of agriculture (to help them) to cope with the expected future climate change such as increasing climate variability and extreme events.
Mitigation	Mitigation is about taking action to minimise the rate and magnitude of global warming by lowering greenhouse gas emissions.
Primary decision makers	These represent the primary producer and the main decision maker of primary industry enterprises.
Secondary decision makers	These represent other members of the decision making team within primary industry enterprises. They are often the marital partner such as a wife, another family member involved in the enterprise such as the father, son or daughter or a business partner.
Peak industry organisations	A peak industry organisation is a representative organisation that provides information dissemination services, membership support, coordination, advocacy and representation, and research and policy development services for members and other interested parties.
Local producer groups	Local producer groups are local and generally more informal groups of local primary producers and community members. They can include local Landcare, sustainability farmer or other similar groups.

1 Executive Summary

This report summarises the results of research commissioned by the Australian Government Department of Agriculture, Fisheries and Forestry (the department) in June and July 2009 for the Australia's Farming Future program. The research provides key findings to assist the department in the development of an evidence based communication strategy that will encourage farmers, fishers and foresters to adapt to the effects of climate change and reduce their greenhouse gas emissions.

The research design used a multi-phased methodology based on:

- An extensive desktop study of current research (Appendix I).
- Consultations with key stakeholders (including 25 in-depth interviews with peak industry organisations, local producer groups and primary producers and 15 focus group discussions with primary producers and urban dwellers across Australia).
- A national survey incorporating 1000 urban dwellers and 1000 primary producers.

The study found significant differences in the beliefs and attitudes of primary producers compared to urban dwellers. Nearly six in ten (58 per cent) urban dwellers believe human activity is causing climate change, as opposed to only 27 per cent of primary producers.

Most urban dwellers believed that the primary industry sector will be covered under some form of carbon trading scheme or measure. This reflects the findings in the urban dweller focus group discussions where there was an overall belief that primary industry should be part of any scheme and Australia's efforts to reduce carbon emissions. In contrast, 53 per cent of primary producers believe agriculture will be part of some form of carbon trading scheme that will impose a carbon cost and nearly two thirds (64 per cent) are against carbon trading as the most effective way to reduce carbon emissions. The qualitative research found that primary producers are very resistant to carbon trading; it fills them with dread and there were strong negative reactions towards it

Many feel that climate change and mitigation efforts to reduce greenhouse gasses are no more important compared to other significant challenges they face including low prices, increasing costs, labour shortages and declining profitability.

Many primary producers expressed the view that human induced climate change is yet to be proven and dismiss the idea that it is behind the climatic situations they currently face. Instead, they prefer to see it as yet another period of drought or change in conditions that will eventually pass. Rejecting climate change in this way allows primary producers to cope with a difficult situation and to avoid the sense of powerlessness and the inevitable negative impact on their business and lifestyle.

With this anti-climate change position firmly entrenched, they put considerable store in the opinions of sceptics and reinforce those views with their own experience by producing local rainfall records that show similar long periods of drought. This position is further reinforced by

other producers who widely share their knowledge of reports that refute any claims around the validity of climate change.

At the same time, primary producers understand and acknowledge the need for adaptation and mitigation strategies such as preparing for prolonged drought, improving productivity and reducing costs. The difference is that it is about improving their response and readiness to natural cycles of climate change and/or improving the efficiency and viability of their business. As a result, primary producers have provided what appear on the surface to be conflicting responses. While they may indicate that they do not believe in human induced 'climate change', many indicate that they have or would take up adaptation and mitigation initiatives for changes in climate and to improve the viability of their business.

Primary producers reported significant barriers to adapting to changes in climate such as financial stress from prolonged drought, an ageing workforce and succession issues. Many primary producers also believe they have already adapted to climate change having already responded to challenges such as prolonged drought and falling commodity prices.

Despite the widespread view that primary producers in Australia are highly innovative, not all primary producers are. The survey results showed that 37 per cent of primary producers claim they constantly trial new ideas while 36 per cent categorise themselves as followers in that they will adopt a new approach once they see it up and running and working. Both of these figures align closely with the 35 per cent and 40 per cent responses quoted by peak industry organisations. Only 27 per cent described themselves as slower to adapt.

Primary producers use a particular process of thinking, talking, testing and checking when considering whether to make changes to their business and practices. This decision making process is critical to their synthesis of information and communications, their receptiveness to new ideas and who they are most influenced by in terms of trusted sources. Primary producers use a range of sources to triangulate and validate what they have been told making it important to communicate to this broad range of sources.

The final stage of the process specifically involves the influence and impact secondary decision makers can have on the final decision and is a key consideration when targeting communications. In addition, with the majority of secondary decision makers (79 per cent) and 22 percent of primary decision makers being female, there is clear need to ensure effective targeting of women and women organisations in primary industry.

The study found that there are five key segments within the primary producer community.

- Drought affected adapters (20 per cent) — do not accept climate change but have started adapting farming practices to cope with severe climate challenges.
- Drought affected cautious adapters (26 per cent) — accept climate change as a reality and a personal responsibility to adapt farming practices that mitigate their production of greenhouse gasses—but are looking for specific direction and assistance from government.
- Climate change sceptics (21 per cent) — do not accept climate change, haven't been as severely affected by drought and do not accept they have a responsibility to take action.

- Strugglers (19 per cent) — do not accept climate change and are struggling and striving to operate profitably. Adaptation and mitigation is limited by financial viability and many other competing worries and concerns but this segment will look for assistance from government.
- Independents (14 per cent)—do not accept human-induced climate change, nor their responsibility to mitigate their carbon emissions and claim to not be as interested in government assistance. However, this is probably more a publicly stated view than reality.

The study also showed a strong need to carefully manage climate change terminology. For many primary producers, the phrase itself throws up considerable barriers and tends to limit conversations around adaptation and mitigation. However, where discussions focus on climate challenges, prolonged drought or improving productivity and cost efficiency, there is a greater openness to consider options for adaptation and mitigation.

One option to address the sceptics, strugglers and independents is for the government to move beyond the issue of whether climate change is real or not to one that addresses climate change as part of a risk management strategy – a position that most primary producers as business operators would understand.

Any calls to action or appeals to adapt based on a moral platform will fail with primary producers who are ultimately running a business. A general communications strategy that is not locally relevant will fuel the existing misinformation between primary producers and will cement resistance to climate change action.

To grab the attention of primary producers and build their understanding of climate change, communication needs to come from a credible source, be relevant at the local level and relate to what primary producers refer to as their 'piece of dirt' or area of activity. High impact communication will need to be emotionally engaging and address the benefits of mitigation and adaptation in terms of better risk management practices and improved farm profitability.

The use of relevant local media channels such as specific rural publications, radio programs and internet services will also help support local communication, extension activities and the multiple channels primary producers use to test and interrogate the information they receive such as through their accountant, agri-business consultants and the secondary decision maker.

While the survey results and overall findings reported in the main body of the report include fisheries and forestry, the focus of the study was on agriculture, in line with the stated priority of the research project. Specific communication insights and recommendations for fisheries and forestry are provided at Appendix V and Appendix VI respectively.

2 Background and objectives

2.1 The need for research

Primary producers in Australia are facing, and will face more pressures as climate change and its expected impacts affect them in the coming years. These pressures, along with adaptation and mitigation issues are likely to vary across the continent depending on regional conditions. As a result, considerable effort is being expended to understand and support primary producers to adapt to these changes and take action to lower agriculture's greenhouse gas emissions.

The Australian Government is investing approximately \$130 million over four years to address climate change issues in the agriculture, fisheries and forestry sectors through its flagship program—**Australia's Farming Future**. Its objectives are to:

- help primary producers adapt and respond to climate change
- prepare the primary production sector to manage its greenhouse pollution.

Australia's Farming Future contains four main elements:

- **Climate Change Research Program:** aims to equip primary producers with the knowledge, tools and strategies to meet the challenges of climate change by funding targeted research and then transferring those findings to the farm.
- **Climate Change Adjustment Program:** provides funding to help farmers who would benefit from access to professional advice and training to combat climate change, as well as helping those farmers who choose to leave farming because their properties are no longer viable due to climate change related pressures.
- **FarmReady:** provides funding to boost training opportunities that enable primary producers and primary industry, farming, and natural resource management groups to develop strategies to adapt and respond to the impacts of climate change. One program component delivers reimbursement grants to primary producers and another component provides funding to appropriate groups to undertake projects and increase their capacity to respond and adapt to climate change.
- **Community Networks and Capacity Building:** provides funding to build the leadership and representational capacity of target audiences to ensure individuals and organisations are more productive in the face of a changing climate.

The department identified the need for a deeper understanding of their key audiences, specifically their current beliefs, attitudes and behaviours in relation to climate change and drought and how to best communicate with them.

This research provides the evidence base for the development of a communication strategy which aims to encourage uptake of the department's programs and desired primary industry behaviour, resulting in a sector ready to respond and manage climate change.

2.2 Research study objectives

The research study objectives were to explore and report on:

- current audience beliefs and attitudes toward climate change (and whether farmers perceive a relationship between climate change and drought)
- current audience behaviours in adapting to and preparing for climate change and drought
- barriers and/or motivators to adopting desired attitudes and behaviours to prepare for climate change and drought
- how effective communication activities could be in encouraging adoption of desired attitudes and behaviours
- messages or communications style that would have the most impact in relation to climate change
- trusted and influential information sources (i.e. media, government, scientists) and channels (e.g. government websites; word of mouth; publications)
- the roles of different members of the business enterprise in decision-making and changing behaviour
- media consumption behaviour of target audiences
- the beliefs and attitudes of urban Australians toward farmers, fishers and foresters in relation to climate change, drought and their contribution to Australian society, and whether communication to the primary target audiences will have any unintended consequences with these groups
- identifying best methods for delivering outcomes from the program to key audiences
- identifying barriers to participation in the programs.

An additional objective was to:

- benchmark current awareness and understanding of the Climate Change Research Program, Climate Change Adjustment Program, FarmReady and Community Networks and Capacity Building.

Based on the above objective, the report is structured firstly around the insights into the beliefs, attitudes, behaviours, motivators and barriers to climate change and to adapting to and mitigating its impacts. This also includes identifying the segments that exist among primary producers to support the development of a targeted communication strategy.

The remainder of the report identifies the essential elements needed for the communication strategy.

3 Study Methodology

3.1 Target Audience

Primary target audiences for Australia's Farming Future communication (in order of priority) include:

- farmers (includes producers in intensive livestock, extensive livestock, extensive cropping and intensive cropping (horticulture and viticulture))
- foresters
- fishers (wild catch and aquaculture).

The secondary target audience includes:

- rural land managers
- natural resource management groups
- financial influencers (CPA Australia or the Institute of Chartered Accountants)
- Rural Financial Counsellors
- peak industry and producer organisations
- regional and local producer groups
- training providers
- urban Australians.

The focus of the research was on the primary target audiences, particularly primary and secondary decision makers from primary industry enterprises. Urban Australians were also included in both the qualitative and quantitative research. The secondary target audiences were included in the qualitative stage of the research.

3.2 Study phases

The research design incorporated a multi-phased methodology of:

- desktop research in June 2009
- fieldwork research for the qualitative and quantitative phases in June and July 2009.

The following figure provides an outline of study phases.

Knowledge sharing and desk research

A knowledge sharing session was held to ensure all key variables were included in the study. The desk top research involved a review of different existing reports on the beliefs, attitudes and behaviours of target audiences in response to climate change and how they receive and act on information, as well as how urban audiences view primary producers. The purpose of this was to establish the current state of knowledge and identify where there are gaps in the required insights.

Qualitative component (15 focus groups, 25 indepth interviews)

This was a two stage qualitative phase across Australia with primary and secondary decision makers in different primary industry enterprises, urban dwellers and some key industry group stakeholders. The first stage involved nine focus groups and five indepth interviews to gain a deeper understanding of the relevant issues around climate change and to support the development of the surveys for the quantitative phase. The second stage involved six focus groups and 20 indepth interviews to supplement the earlier qualitative research and to provide insights behind the survey results. A copy of the discussion guide is provided at Appendix II.

The focus groups comprised of the following:

- Urban dwellers (Sydney-NSW, Brisbane-QLD, Perth-WA)
- Mix of farmer types – primary decision makers (Dubbo-NSW, Rockhampton-QLD, Albany-WA, two groups at Loxton-SA, Wimmera-VIC, Gippsland-VIC)
- Mix farmer types – secondary decision makers (Dubbo-NSW, Rockhampton-QLD, Albany-WA)
- Fisheries (Devonport, TAS)
- Forestry (Devonport, TAS)

The indepth interviews included:

- twelve peak industry bodies and research organisations (including an Indigenous representative organisation)
- five local farmer/industry groups
- eight primary producers covering beef, cattle, sheep, cropping and horticulture

Survey

The survey, which used a survey of 10 -15 minutes in length (Appendix III), was designed to provide numbers against each of the issues, attitudes and behaviours identified and to enable a segmentation analysis of decision makers in primary industry enterprises and urban dwellers. The study delivered a large national sample of 1000 primary industry enterprises (750 primary decision makers and 250 secondary decision makers) and 1000 urban dwellers, offering robustness for a detailed segmentation and analysis. Appendix IV provides a profile of the sample obtained. The survey ensured:

- respondents were aged 18 years and over
- a random selection of household telephone numbers drawn from all area codes with the last 4 digits randomised
- a random selection of individuals within households by asking for the person who had celebrated their most recent birthday
- strict quotas were applied on age and gender (50/50)
- soft quotas were applied on a state level and commodities level (for primary producers)
- the data was post weighted to ABS data (based on geography, age and gender).

Interviews were conducted using CATI (computer aided telephone interviewing) methodology, between 21 July and 30 July 2009.

3.3 Data handling

All tests for statistical significance have been undertaken at the 95 per cent level of confidence, and unless otherwise noted, any notation of a 'difference' between subgroups means that the difference discussed is significant at the 95 per cent level of confidence. The report only notes those differences that are statistically significant.

Please note that all results have been rounded to the nearest whole percentage figure, including net results after summing the separate proportions rather than simply summing two rounded figures (e.g. 'per cent total agree'). For this reason, anomalies of 1 per cent sometimes occur between net results and rounded results shown in charts. For example, a proportion of 33.3 per cent 'agree' rounds to 33 per cent, and a proportion of 4.4 per cent 'strongly agree' rounds to 4 per cent. However, when combined to derive the total agree (i.e. agree plus strongly agree), 33.3 per cent plus 4.4 per cent equals 37.8 per cent, which would be rounded to 38 per cent. In this case, the results would be shown in a chart as 33 per cent agree and 4 per cent strongly agree, but the proportion reported as 'total agree' would be 38 per cent.

3.4 Reporting

This report focuses on the primary qualitative and quantitative research conducted in July and includes detailed tables of the survey results. A PowerPoint report and presentation of the key findings of qualitative and quantitative research phase was provided to the department in August and September. As part of the project's final deliverables, tables of the survey results have been provided to the department.

A separate desktop research report was submitted in June (Appendix I).

4 Definitions and understandings

This report provides an exploration of the capacity and responsiveness of primary producers to adapt to key industry challenges in relation to climate challenges such as drought and extreme weather events. Integral to the development of a successful communications strategy for this audience will be getting primary producers to continue to adapt and make use of government assistance through a better understanding of primary producers' attitudes and behaviours when it comes to adaptation and mitigation and their definition of what these terms mean to them.

The departmental definition of adaptation is about taking action to increase the ability of primary producers to cope with expected climate change in the future such as increasing climate variability and extreme events. Primary producers, however, tend to look at adaptation from a wider perspective and include in this definition any improvements or changes they have or will make that enables them to stay on their property. For example, this may include one or more members of the family having employment off the farm to provide additional income.

The departmental definition of mitigation is about taking action to minimise the rate and magnitude of global warming by lowering agricultural greenhouse gas emissions. However, apart from a few exceptions, primary producers simply refer to carbon emissions (i.e. not mitigation) and most associate it with carbon trading, which generated both negative reactions and concern in terms of the implications it may have for their long term business viability.

Climate change as a term in itself is also highly contentious with most primary producers refuting both its existence and reported causes; specifically that climate change is man made through greenhouse gas emissions. As a result, while primary producers accepted and discussed changes or cycles in climate and drought and the need for them to adapt to those changes, they were very reluctant to engage in group discussions regarding 'climate change'. This was due to entrenched scepticism, as well as other barriers and reasons which are widely documented throughout the report. Therefore, the discussions and survey responses tended to focus on adaptation to changes or challenges in climate and drought as against adaptation to 'climate change' per se.

Due to the nature of the research and its objectives, the report has therefore focussed on the definitions and language used by primary producers.

The bottom line is that primary producers will only engage in adaptation when confronted with real climate challenges that require adaptation and when and where there is a demonstrated promise of productivity benefits. The key barriers to and drivers for change are detailed in the relevant sections of the report.

As stated in the executive summary, the survey results and overall findings reported in the main body of the report include the fisheries and forestry sectors, however, the focus of the study was on agriculture, in line with the stated priority of the research project. Specific communication insights and recommendations for fisheries and forestry are provided at Appendix V and Appendix VI respectively.

5 Climate change: beliefs, attitudes and behaviours

5.1 Beliefs and attitudes towards climate change

5.1.1 Diverging views between urban dwellers and primary producers

There is a significant difference of opinion and belief between urban dwellers and primary producers about the cause of climate change and its veracity in terms of being a risk to be proactively managed.

Almost six in ten (58 per cent) urban dwellers believe human activity is the cause of climate change compared to only 28 per cent of primary producers (27 per cent of primary decision makers and 30 per cent of secondary decision makers). Insights from the qualitative research and other survey results, however, suggest that although they refute human induced climate change on one hand, they know there are significant changes occurring in the climate. These are discussed further in 5.1.2. Viticulture producers are slightly more likely to believe in human induced climate change compared to other primary producers.

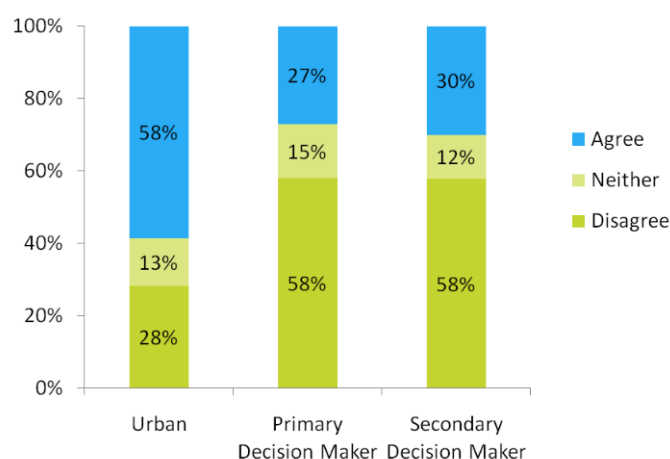


Figure 1: QB2. Tell me whether you agree or disagree or neither with the following statement? Human activity is the primary cause of climate change: Base: Total Sample

Nine in ten (90 per cent) urban dwellers also strongly believe that primary producers have a responsibility to contribute towards Australia's carbon reduction efforts. In addition 92 per cent believe that government investment to help primary producers adapt will benefit all Australians. Only 58 per cent of primary producers believe they should contribute to Australia's carbon reduction efforts.

Almost half (42 per cent) of urban dwellers compared to only 28 per cent of both primary and secondary decision makers in primary enterprises agree that climate change is about natural events becoming more severe.

Only 26 per cent of urban dwellers agree with the statement that 'drought is a natural event that is not made worse by climate change', compared to half of primary producers (52 per cent primary decision makers, 58 per cent of secondary decision makers). The majority (64 per

cent) of urban dwellers disagreed that 'drought is a natural event that is not made worse by climate change', with the remainder indicating they neither agreed nor disagreed.

An area of potential tension between urban dwellers and primary producers relates to whether primary industry will be covered under some form of carbon trading scheme or measure that will impose a carbon cost. Sixty per cent of urban dwellers believed that the primary industry sector will be covered under some form of carbon trading scheme or measure.

This reflects the findings in the urban dweller focus group discussions where there was an overall belief that primary industry should be part of any scheme and Australia's efforts to reduce carbon emissions.

Over half (53 per cent) of primary producers believe agriculture will be part of some form of carbon trading scheme that will impose a carbon cost. However, nearly two thirds (64 per cent) are against carbon trading as the most effective way to reduce carbon emissions.

The qualitative research also found that primary producers are very resistant to carbon trading; it fills them with dread and there were strong negative reactions towards it. There also seems to be a lower acceptance of primary industry being covered by such a scheme or measure among secondary decision makers. This is discussed in more detail later in the report.

5.1.2 Converging views between urban dwellers and primary producers

While there were disparate views between urban dwellers and primary producers in the study, there were also a number of converging views particularly around the challenges and impacts of climate change.

For example, 72 per cent of urban dwellers, and 73 per cent of primary producers agreed that climate change poses more challenges than opportunities for Australia. Nearly three quarters of both urban dwellers and primary producers disagreed that 'every farmer in Australia, regardless of their location will face the same level of climate change impacts'.

Interestingly, 87 per cent of urban dwellers, 80 per cent of primary producers and 72 per cent of secondary decision makers believe that climate change will impact on food production. At first glance, this appears to contradict earlier views put forward by primary producers but in fact reflects a conflicted attitude and set of beliefs towards the reality of climate changes. Primary producers acknowledge on one level the significant impact changes to climate are having on current agricultural productivity while struggling to deal with the acceptance of human induced 'climate change' and its causes on a conscious rational level. Primary producers understand and have lived with significant changes in climate and significant cycles in climate such as drought that have impacted on food production and their enterprise. This does not mean they accept that 'human induced climate change' is occurring.

5.1.3 Urban dwellers attitudes to climate change and primary producers

Based on the above data, climate change is widely accepted among urban dwellers as the cause of the current long and widespread drought and the more intense climate conditions being

experienced by many primary producers across Australia. In particular, urban dwellers have listened to the growing concern of scientists and have shifted their view that climate change is a risk to be carefully managed and no longer debated in terms of whether it is true or not. However, despite their belief in climate change, a number of urban dwellers do not believe they need to take action to adapt to or mitigate their own contribution to climate change.

'Farmers are the ones who have to adapt, not me!' (urban dweller)

The above aligns with many primary producers' perceptions that urban dwellers do not take equal responsibility nor equally bear the cost of taking action to address environmental issues. Primary producers often talk about that they have had to bear most of the burden in relation to activities such as Landcare and water pricing and access. This causes some level of bitterness and distrust.

The attitudes and experiences of urban dwellers towards primary producers and climate will be important to the communication strategy for Australian's Farming Future in ensuring the wider community support of the policy and funding initiatives targeted towards primary producers. It will also be important for primary producers to know that the wider community holds them in a positive light, believes they need to be supported and that the wider community will also be called on to take action to adapt to and mitigate their own contribution to climate change.

Urban Australians fall into three broad categories of experience and exposure to primary industry which influences their level of affinity with primary producers:

1. the untouched
2. the vaguely aware
3. those who have direct contact (for example, they came from a farm or have relatives who own a farm).

Virtually all urban Australians see primary producers in a positive light and envy certain aspects of their lifestyle; however, they also believe that primary producers are struggling with a wide range of challenges. The reporting of rural issues in general and the drought in particular has increasingly sensitised urban dwellers to the struggle of those on the land, the majority of whom think 'our' primary producers are the 'best in the world'. The fact they are still profitable despite reduced protection 'proves it'. In addition, the more experienced and exposed to primary industry an urban dweller is the more they tend to understand the challenges faced by primary producers.

Urban dwellers recognise the important role primary producers play in ensuring food security and cannot imagine food security would be a concern to Australia. They also believe regional Australia is highly dependent on primary production and viable townships would be in jeopardy if primary production were to come under threat through climate change.

Although urban dwellers characterise the lifestyle and work of most primary producers as hard, challenging, rewarding, positive and necessary, they also recognise its downside including natural events such as flood, fire and climate change as well as issues around isolation and a lack of services and infrastructure.

As a result, there is considerable empathy for the plight of primary producers and a strong belief that the industry should be helped by the government to meet the challenges of climate change. They also strongly support helping primary producers to help themselves through:

- research and development expenditure to find the best ways to mitigate and adapt to the impacts of climate change
- subsidies using a partnership approach where the primary producer pays something and the government assists
- training and development, education and mentoring.

However, many urban dwellers tend to question the appropriateness of exit subsidies for businesses making a loss.

In terms of communications, a number of key messages had a significant impact on urban dwellers in relation to climate change and its potential impact on agricultural production:

- Food security – The impact of climate change on food security is new news and frightens people. It raises a whole new area of concern for urban dwellers such as the disappearance of rural communities as well as the issue of food security itself... *'If Australia can't grow enough wheat... well, who can?'* (urban dweller)
- The rapidity of climate change – The idea Australia wouldn't be able to grow enough wheat by 2050 is seen as almost unbelievable and drives home the immediacy of the issue and its relevance to all Australians.
- Primary producers across the country will be affected in different ways – This provides a positive message about adaptation initiatives and programs, particularly in those regions which may experience improved climate conditions including higher rainfall. It also informs urban Australians more widely that there will be winners and losers on climate change and that adaptation is essential to mitigate and/or maximise climate change impacts both at the national and regional level.

5.1.4 Reasons and defences for primary producer attitudes

A consistent finding throughout the research study was the low acceptance by primary producers that human activity is causing climate change or has contributed to the current drought conditions. Participants frequently brought in material such as rainfall records for their property to refute the proposition of climate change and nullify its threat to their livelihood and lifestyle.

The term 'climate change' has become a brand in itself which is linked to the political and media debate around greenhouse gas emissions and human activity being the cause and the need or otherwise of a carbon trading scheme. Primary producers preferred to replace the term 'climate change' with 'changes in mother nature,' 'changes in climate', 'climate challenges' or 'a naturally occurring cycle of climate change' to further distance and reject the role of human activity on current weather conditions. Rejecting 'climate change' due to human activity allows primary producers to cope with a difficult situation by avoiding the sense of impotence and futility that at some level they know will come with rapid changes in climate.

The debate around climate change is also moving too fast on one hand with research results too slow on the other to provide viable answers for primary producers and enable them to take action. As a result, primary producers are increasingly frustrated and feel 'left as rabbits in the headlights'.

Other defences and barriers given by primary producers to support and back up their anti 'climate change' position include:

- 'Incontrovertible' arguments and evidence based on their personal experience of their 'piece of dirt' and local rainfall records which they felt 'proved' drought comes and goes.
'I have rainfall records on my property from 1838 when the farm was first declared. There have been plenty of droughts and there will be again.' (primary producer)
'It [climate change] is just not the experience I have of my land.' (primary producer)
- Entrenched doubt and scepticism of climate change experts, evidenced by selectively tuning into and sharing information that challenges climate change irrespective of whether the information is reliable or not.
- Lack of certainty and confusion around climate change and its reality, backed up by reported division within the scientific community itself.
'50 per cent of scientists reject global warming and the climate change idea.' (primary producer)
'They couldn't convince Senator Fielding...it clearly can't be true.' (primary producer)
'I heard an eminent geologist on the radio on the way to this meeting and he said that climate change had been occurring and recurring for millions of years. He said the economic impact of carbon trading would ruin primary producers.' (primary producer)
'There is debate about the truth regarding climate change, so who can you believe?' (primary producer)

This defence mechanism combined with what is seen as a lack of clear and compelling data is currently underpinning primary producers' ongoing unwillingness to engage or entertain the likely or predicted impacts of human induced 'climate change', particularly at the local level.

At the same time, primary producers understand and acknowledge the need for adaptation and mitigation strategies to address changes in climate such as prolonged drought and for improving productivity or reducing costs. The difference is that it is about improving their response and readiness to natural cycles of climate change and/or improving the efficiency and viability of their business. As result, primary producers have provided what appear on the surface to be conflicting responses. While they may indicate that they do not believe in human induced 'climate change', many indicate that they have or would take up adaptation and mitigation initiatives for changes in climate and to improve the viability of their business.

There are also a number of other underlying reasons for primary producers' negative responses to the concept of climate change. The most significant is that primary producers do not want to stop being primary producers nor do they want to leave their land, enterprise, community and friends. As a concept, it represents not only a major change and investment; it also threatens their very way of life and sense of self. The following summary provides key insights into

what climate change means to primary producers at both an emotional and financial level and how communications around climate change are likely to be received based on this current mindset.

For primary producers...

- Climate change is a **threat** to their attachment to the land, which is incredibly strong.
- Climate change (as opposed to drought) means their entire way of life (potentially one conducted for many generations) may not be sustainable.
- The determination to succeed is based on **personal and family history** with the land, love of the life and the land and their local friends.
- Other factors holding them to the land include a **fear of failure**, lack of genuine consideration of an alternative life, and a lack of career choices where they live.
- As a result, many struggle to be open to all possibilities for the future for themselves and their children.
- Climate change **means change and potentially major change**, requiring research, investment, learning new ways to farm, greater risks because of the unknown and many other challenges.
- Climate change currently comes with the **suggestion that primary producers are somehow largely to blame** – this was a strong perception held by primary producers and was expressed by strong feelings of victimisation. They are hearing messages that carbon and methane emissions are caused by their primary production and animals. They also perceive urban based emissions are not getting the same attention and contribute disproportionately to the emissions, while at the same time major emitters are receiving credits or exemptions.
- Climate change **equals the Carbon Pollution Reduction Scheme** ('carbon trading') which primary producers perceive as yet another cost ('tax') that they have to absorb when they are already stretched (as a price taker and due to pressures like drought). Based on their experiences with natural resource management, land care and access to water, they often perceive that 'as usual' they will be required to wear a disproportionate part of the cost and change required compared to urban dwellers.

And so primary producers tend to...

- React **negatively** to the idea of climate change.
- Question the threat of climate change (because of the implications to their life/work).
- **Reject** the notion of human induced climate change as being the challenge they face.
- See drought as a **naturally occurring** climate change cycle, stage or extended dry spell (but not climate change). The difference to them is that one will pass and the other will not go away (**this difference is huge for primary producers trying to hold onto their land**).
- Climate change (based on human activity) fills farmers with **dread**.

5.2 Why do they stay on as primary producers?

To fully understand primary producers' resistant attitudes to 'climate change', it is necessary to understand the reasons why they stay in primary production, the challenges they confront daily and their current behaviour generally to managing change.

Primary producers have many personal reasons to stay on the land and this fuels their determination to succeed while also providing them with an integral reason to change and adapt, unless there is no capacity to change. Some of the key reasons include:

- It's a way of life that they love — *'It's in my veins...I don't know anything else.'* (primary producer)

- They can be their own man (or woman) — *'It's the variety...having breakfast with your kids...seeing them off on the school bus.'* (primary producer)
- Tradition — *'My family has farmed the land for four generations...what would it say if I couldn't make it work?'* (primary producer)
- Leaving means a change to everything — *'The change means everything...you can't take your friends if you move 500 kilometres away to get work.'* (primary producer)

As a result, the idea of quitting is foreign to most primary producers and would represent both failure and a major disappointment.

5.3 Challenges facing primary producers

Projected climate change impacts were seen by 61 per cent as being no greater than the many other challenges confronting primary producers. It does not necessarily mean the challenge of changes in climate was seen to be of lesser importance, but rather one of many significant challenges that primary producers face.

'It's not the single crisis that gets farmers; it's the three on top of each other.' (primary producer)

The significant number of challenges facing primary producers, including financial, personal and legislative issues leave many feeling permanently anxious and therefore likely to reject anything that may add to this burden. However, there are a number of positive outcomes that have emerged out of this difficult operating environment. It has made the fair to good producers highly innovative and open to change and adaptation, particularly where it represents increased productivity, viability and sustainability. Many of the fair to good producers are also highly efficient and are recognised as such in their local communities.

Taking into account and acknowledging the other challenges that primary producers are facing, will be important in effectively communicating and gaining their attention.

5.3.1 Business related challenges

As price takers rather than price setters, primary producers are subject to a wide range of economic factors over which they have little direct control, such as access to capital, the value of the Australian dollar and produce prices. An example given by dairy farmers was that despite increases in the retail price of milk, the price farmers receive per litre is the same as it was twenty years ago — and they anticipate the price will drop further in the near future. At the same time, their costs have gone up over that time.

'Being a price taker as opposed to a price setter means you are also at the beck and call of others.' (primary producer)

'Running costs have risen markedly and we still need to keep making a profit.' (primary producer)

5.3.2 Drought and climate challenges

Drought dominated many primary producers' thoughts when asked to consider the challenges they now face and has seen many primary producers swing into survival mode to simply make ends meet. The result is a reduction in their capacity for maintenance and their ability to invest in new ideas and upgrade equipment and technology. The following quotes illustrate the full scope of what drought means to primary producers and the behavioural and economic responses it generates.

'Lack of money.' (primary producer)

'Inability to service debt.' (primary producer)

'Clips your wings...all your ideas go on hold.' (primary producer)

'Survival mode kicks in.' (primary producer)

'Start going looking for work off farm.' (primary producer)

'Reduce the effort you put into your own place.' (primary producer)

'Drought legacy ...it's all the fences you didn't repair through the drought.' (primary producer)

It also has social and profound personal implications that impact heavily on primary producers and their family, as demonstrated by the heightened awareness of depression and suicide within the farming community.

'Increased stress...you get lethargic, use your family as a battering ram.' (primary producer)

There is also recognition among some primary producers of climate changes and more common extreme weather events, although these tend to be seen as part of the natural cycle of change.

5.3.3 Personal and social challenges

Challenges such as isolation, succession planning, ageing of the primary producer, a lack of connection to the internet and the inability to access other services, including education, research, and health services are also impacting on primary producers and rural townships

'The ageing of the workforce is a considerable issue.' (primary producer)

'[in the harsh economic climate] succession planning is very difficult for many.' (primary producer)

'Some children have been forced off the land because it can no longer sustain two families [but what about the future – we are just getting older and older farmers].' (primary producer)

5.3.4 Increasing legislative demands

Primary producers consistently mentioned the increased pressure and challenge of legislation and complying with occupational health and safety (OH&S), tax law, quality control requirements, pest and disease, contamination management and land clearing. Carbon trading is seen as just another potential legislative challenge and expense that will add to their burden.

'OH&S is an increasing challenge and limits employment.' (primary producer)

5.4 Current behaviour in adapting to climate change and drought

5.4.1 Adaptive nature of primary industry

Nearly three quarters of primary producers (74 per cent) felt primary industry had already adapted significantly to climate change challenges.

Primary producers, local producer groups and peak industry organisations see the industry as having a strong culture of adaptation, driven by constantly changing practices in response to technological advancements, research and development and economic necessity.

'With increasing input costs, to survive we have to be more efficient, fine tune, get more from less.' (primary producer)

'Adaptation is why we still have agriculture...farmers are not stationary.' (peak industry organisation)

Change is not new to primary producers. Their reliance on research and development to improve and adapt to new practices based on scientific breakthroughs is critical to their long-term survival and overall operating efficiency.

'Farmers have been adapting since day dot.' (primary producer)

'Old practices are just not viable in the emerging situation. Change is necessary to maintain and develop profitability. Agriculture is a business and change is driven by the bottom line.' (primary producer)

'We can get more efficient yet but it is on the back of R & D...adaptation is a constant, the hallmark of the [Australian] agricultural industry, especially in the context of climate extremes.' (primary producer)

'We are driving (our) efficiency as hard as we can — our efficiency is up 200%. We are the most efficient globally.' (peak industry organisation)

Although primary producers recognise adaptation as part of their operating culture, many do not believe they consciously plan to adapt, rather they believe they operate on a let's just try it and see principle. However, in reality adaptation appears in many cases to be a well thought out, well researched, and carefully planned experiment.

5.4.2 Diffusion of new ideas and practices

Despite the widespread view that primary producers in Australia are highly innovative, not all primary producers are, with many likely to be cautionary, not proactive or even 'recalcitrant'.

The survey results showed that 37 per cent of primary producers claim they constantly trial new ideas while 36 per cent categorise themselves as followers in that they will adopt a new approach once they see it up and running and working. Both of these figures align closely with the 35 per cent and 40 per cent responses quoted by peak industry organisations. Only 27 per cent described themselves as slower to adapt.

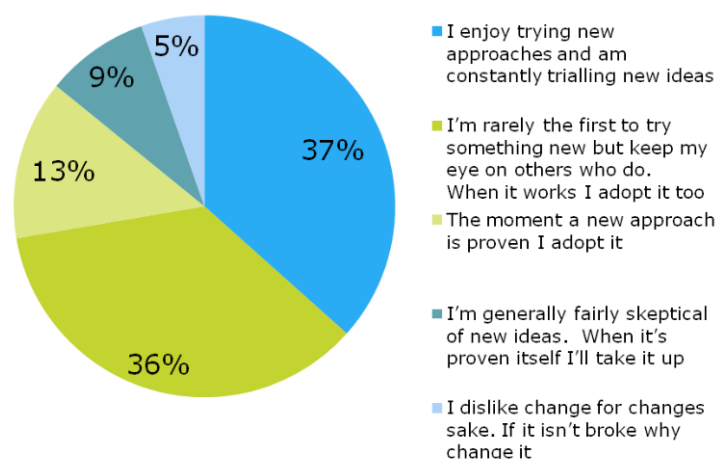


Figure 2: QB1. Which of the following statements best describes how you go about making new changes on your farm?

Peak industry organisations described the diffusion of technology and uptake as follows:

Early Adopters (5%)	<ul style="list-style-type: none"> The first primary producers to try new things. Characterised by being involved in local farmer groups, using the Internet for research, asking the questions. Usually some of the most successful primary producers and a tendency to be better educated. Have strong views, and often a long history on the land.
More cautious followers (30%)	<ul style="list-style-type: none"> Watch and listen to their networks such as farm consultants, field days. Characterised by being solid producers with a history of change. Know and have experienced substantial change.
Not proactive (40%)	<ul style="list-style-type: none"> Watch neighbours and maybe change 10 years down the track. Tend to be more sceptical about change. Require higher levels of proof before adopting innovations.
Recalcitrants (25%)	<ul style="list-style-type: none"> <i>'These primary producers are doing less and less (they will) be weeded out, not sustainable or profitable.'</i> (peak industry organisation) They are typically poorly performing primary producers, less well educated with a poor record of innovation. They don't listen to others, are less capable of adaptation and generally will have performed well below the average over time. They are struggling with succession planning, often moving to more and more off farm work, and have decreasing ability to fund investment to allow innovation.

'Innovation with caution' is probably the best descriptor and hallmark of Australian primary production. Given the view that primary producers are reluctant innovators and with climate change not wholeheartedly accepted, this conservative position may well be a key challenge to adaptation.

5.4.3 Decision making process

What the above shows is that primary producers use a particular process of thinking, talking, testing and checking when considering whether to make changes to their business and practices. This decision making process is critical to their synthesis of information and communications, their receptiveness to new ideas and who they are most influenced by in terms of trusted sources. The process generally includes the following:

- Constantly think of new ways to do things.
'When you are sitting in a tractor [run by a GPS] and you're pouring \$10,000 of fertiliser on a paddock, you are always thinking how could I do this better...is there a better way?' (primary producer)
- Listening and talking to as many sources as possible.
'We all listen to a lot of radio...to a lot of the ABC...the farming sections...especially the local farming segments.' (primary producer)
'We talk...whenever farmers get together...we talk...at the local silos when you drop off the wheat...wherever.' (primary producer)
'You talk to everyone.' (primary producer)
- Testing through various sources and constantly assessing whether it applies to their land.
'You get involved with farmers in your local area...go on field trips...look at demonstration sites.' (primary producer)
'You watch everyone.' (primary producer)
'When you're ready, you talk to the [so called] experts.' (primary producer)
- Making a final check with their wife, partner, father, brother (i.e. secondary decision maker of the enterprise).
'I am the sounding board...when everyone else has been exhausted...the final check that it might work.' (secondary decision maker)

The final stage of the process shows the important influence and impact secondary decision makers can have on the final decision and is a key consideration when targeting communications to this audience. In addition, with 79 per cent of secondary decision makers and 22 per cent of primary decision makers being female, there is a clear need to ensure effective targeting of women and women's organisations in primary industry.

5.4.4 Types of adaptive behaviour

Primary producers cited the following types of adaptive behaviour:

- **Conserving** — minimisation costs at the margins, using economies of scale, suspending unprofitable operations and maintaining rather than replacing.
- **Reducing** — reducing staff, transport and fuel costs, environmental impacts through use of organic matter, improving soil health, reducing emissions through better feed programs, improved use of fungicides and herbicides, reducing evaporation.
- **Switching and diversifying** — out of wool into cattle, dairy to beef, irrigation to dry-land cropping, diversifying production, varying designs, adding new crops or breeds.
- **Improving efficiency** — feed efficiency, crop rotation, more intensive cropping, increasing calf weight by 50 per cent, better throughputs and water utilisation.
- **Innovating** — GM, adopting new systems such as livestock management systems, dietary management, water point technology, electronic fencing and crop surveillance, GPS driven tractors that can seed 127 Ha per hour, low/no till cropping.

5.5 Barriers and motivators to change

The barriers and motivators to change are clearly much bigger than any individual response and range from: an ageing population; scepticism around climate change; the need to see financial benefits attached to adaptation; a lack of succession planning; entrenched farming methods; the ability for research to be applied at a practical level and endorsement from peer groups as trusted sources of information.

Primary producers report that they are very good at adopting new technology and running with it quickly to remain viable. Based on this premise, it would appear that adaptation is more likely to be hampered by a lack of research or demonstrable application of that research at a practical level.

Climate change is also just one of a competing set of risks that has to be managed within the industry. For further action to occur, primary producers require clarity, coherency, and continuity to support both their decision and ability to adapt to climate change supported by a strong business case in order to change their existing attitudes and behaviours. Any calls to action or appeals to adapt based on a moral platform will fail and will not resonate with primary producers who are ultimately running a business.

'Specifically tell us what is the scenario we are dealing with, explain to us how it is happening on our property and tell us what the pathway to adaptation looks like.'
(primary producer)

'The moral lever is a poor motivator — best practice linked to productivity is what is required.' (primary producer)

5.5.1 Motivators

The following key motivators to adaptation and mitigation identified by primary producers will need to be reflected within the communications strategy to encourage buy in and credibility.

Financial benefit

- For change to occur it must pay its way.
- Initiatives that 'demonstrate' improved productivity and/or financial return through increase output, higher quality, lower costs or higher revenue will attract uptake.
- Subsidies using a partnership approach where the primary producer pays something and the government assists seem to have the greatest appeal.
- However, there was even interest generated when participants discussed relatively small payments for land care activities — the greater challenge seemed to be generating wide spread awareness of an incentive or payment.

Research and development

- Research and development was cited repeatedly by primary producers, their local groups and peak industry organisations as being critical to finding more efficient ways to adapt and is clearly a critical precursor to motivating and supporting decision making around climate change.

'R&D is essential; it's needed to solve problems; for example how to reduce emissions within industry specific scenarios; how to improve productivity.' (peak industry organisation)

- The more practical and closer research and development is undertaken with primary producers the better; preferably at a local level which relates to the primary production they are involved in and in a way they can see and allows them to establish a trusted relationship with the researchers. Communication of research and development at a local level is critical.
- There were consistent comments on the withdrawal and closing of research centres and projects involving trusted researchers in the local region. This was a concern to primary producers and in opposition to the apparent increased need for relevant research and development.

'No R & D – no industry.' (peak industry organisation)

Community and peer based support

- Primary producers, peak industry organisations and local producer groups were united in their view that the most effective change agents are other producers.
- Supporting each other through change by sharing information, skills, advice and comparing ideas and approaches is extremely important within the farming community and is a key driver in stimulating discussion and motivating changes across the industry.

Community and peer based support (continued)

- Leaders and early adopters are important in generating change, as are the local farmer groups.
'Till cropping started with one member of a group. He got two crops and it went like wildfire. He talked within the group, the group observed and then rapid change followed. If you feed expertise into groups with innovators and followers going quickly behind.... 4,000 groups out there now – this drives change.' (primary producer)
- Comparative analysis also appears to act as an important driver and facilitator for change.
'Just brilliant to have someone to do comparative analysis for us To make comparisons ... didn't know if we were doing well, it's not always price that tells you.' (primary producer)

5.5.2 Barriers

The following key barriers to adaptation and mitigation for primary producers identified in the research are important considerations when managing mindsets and tailoring communication messages around climate change

Capacity

- More than two thirds of primary producers claim they can't afford to adapt or undertake mitigation.
- As will be identified in the segmentation analysis later in this report, younger primary producers are struggling to survive, with the costs of succession and capital costs.

Fear, distrust and anti climate change commentary

- As mentioned, there is both scepticism and fear of what climate change represents to primary producers with regard to their long term future and survival and therefore there are elements of denial.
'It may only be, of course, a drought.' (primary producer)
- This scepticism is reinforced by others in the public arena who challenge climate change, including sceptical politicians.
- There is a feeling among primary producers that they are being blamed for climate change and to acknowledge it is due to human activity is to acknowledge their role in it. This sense of victimisation is also based on primary producer perceptions and experiences with water licences and land clearing legislation.
- Primary producers are linking adaptation and mitigation for climate change to carbon trading and the fact that it will simply be another cost impost that they have to absorb.

<p>Anti carbon trading</p>	<ul style="list-style-type: none"> Nearly two thirds (64 per cent) of primary producers indicated they are against carbon trading as the most effective way to reduce carbon emissions.
<p>Other competing priorities</p>	<ul style="list-style-type: none"> There are competing priorities and challenges which primary producers see as equally important which can limit the capacity for primary producers to give attention and resources to the issue of adaptation and mitigation for climate change. <p><i>‘Given the everyday challenges of remaining viable, climate change can be just too out there in the future for farmers to want or need to deal with it right now. (primary producer)</i></p> These include drought, legislation and quality control requirements, business challenges as price takers, and family and social challenges relating to isolation, succession planning, aging of the primary producer, lack of connection to the internet and the inability to access other services, including education, research, and health services. <p><i>‘... just too hard – we’ve gotta get this season’s (work) done – it’s just enough to do to survive today; it’s all too big and too hard. Carbon sequestration is too enormous.’ (primary producer)</i></p>
<p>Lack of experience of climate change impacts and focus on their own backyard</p>	<ul style="list-style-type: none"> Primary producers will tend to focus on their own property and immediate region when talking about climate change and not at a state, national or internationally level. While drawing on a range of sources for information and knowledge, primary producers ultimately base their views strongly on what they have experience on their own land and their previous experiences with changes in climate. In addition, if they haven’t experienced the extremes of changing climatic conditions such as severe and long lasting drought, they are less likely to be receptive to messages on adaptation to and mitigation for climate change.
<p>Comfort and established and respected culture</p>	<ul style="list-style-type: none"> There are also human factors that create barriers to change including human nature itself, which is frequently resistant to change. <p><i>‘People are comfortable with the way they do things and they are resistant to change.’ (primary producer)</i></p> <p><i>‘The problem is just inertia.’(local producer group)</i></p> Farmers have their own culture and learnt behaviours from previous generations, which influence their response to adaptation and change. <p><i>‘This is the way dad did it.’ (primary producer)</i></p>

Language used

- For many primary audiences, the phrase climate change itself throws up considerable barriers and tends to limit conversations around adaptation and mitigation.
- Where discussions focus on climate challenges or prolonged drought and managing risk, there is a greater acceptance and openness to consider assistance for adaptation and mitigation.
- There is also greater acceptance when communications focus on improving the profitability and productivity of primary producers, pitched at the local level and relate specifically to 'their piece of dirt' or area of production or harvest.

Demographics and succession problems

- At one end of the spectrum, younger primary producers are struggling to survive, with the costs of succession and capital costs and are therefore more likely to be in a position where they don't have the capacity for adaptation and mitigation.
- Lack of succession planning was widely cited as a barrier to change with day-to-day survival taking precedence over climate change issues.
- This has significant implications for the future given the significantly aging profile of many primary producers.
- While older primary producers have greater capacity and appear in general to be open to initiatives for adaptation and mitigation, there does come a point when the combination of age and lack of family succession makes investing in the long-term future difficult to justify.

5.5.3 Importance elements of adaptation initiatives

The survey highlighted a number of key elements that need to be factored into initiatives targeting primary producers and climate change. Communications can also leverage these issues as potential communication tools, publications and releases including case studies, research outcomes, business benefits and media opportunities through demonstration sites.

Percentage of respondents rating as important...	Primary producers (Primary Decision Maker)
Ensuring Australian primary industries remain profitable	98%
Providing access to education and training to help primary producers adapt	91%
Providing grants to assist in investment in new plant and equipment	79%
Providing access to local primary producers who have successfully adapted to changes in climate	87%
Maintaining jobs in the Australian agricultural industry at all costs	85%
Increasing spending on primary industry research and	84%

development on how primary industry can adapt to climate change	
Establishing demonstration sites to show new technology, information and farming strategies	91%

Figure 3: The table show the response to QE1. Now thinking in the context of adapting to changes in climate like extended droughts, tell me for each issue whether you think it is an issue which is important, unimportant or neither?

5.6 Mitigation and carbon trading

Although adaptation was the key focus of the research study, mitigation was also seen as being particularly problematic, with carbon trading viewed as a major threat by primary producers for several reasons:

- The lack of recognition of climate change as a result of human activity means that primary producers take the view that carbon trading is simply another cost impost on primary producers' ability to compete.
- Misinformation about the Carbon Pollution Reduction Scheme, which appears to have been positioned by commentators as being little more than an additional tax on primary producers.
- These two viewpoints have gathered traction in recent times and allowed an emotional reaction to set in making effective communications difficult.
- Primary producers also fear that any acceptance of their responsibility for climate change and greenhouse gas emissions will mean an increase in input costs and result in unviable production. (Primary producers have a global view on pricing and the competitive environment they operate within — consequently all input price hikes are a cause for concern).
- At the end of a significant drought period, primary producers will need to invest in new plant and equipment, maintenance (e.g. fencing), training and development and therefore there is generally little or no capacity to make other investments and major changes.

The combination of fear, feelings of being blamed for the carbon emission problem, along with additional pressures and taxes means the entire concept of greenhouse gas mitigation is strongly resisted by primary producers.

'They're blaming farmers for the production of carbon ...it's the methane from the cows and clearing of the land...what rubbish.' (primary producer)

'...and the fuel we use to sow and reap the produce.' (primary producer)

'It is governments just thinking of a way to tax us...that's all it is, another bloody tax.' (primary producer)

'Why is it always us to blame for anything that goes wrong' (primary producer)

Given this resistant environment and mindset, there was little or no awareness of the benefits of mitigation strategies and initiatives to reduce carbon emissions, the potential to reduce

operating costs (e.g. lower fuel and energy usage) or the potential to reduce energy loss (e.g. methane) through lower animal emissions. There was, however, discussion and interest in the opportunities to benefit from carbon sequestration activities and initiatives (including for soil improvement), but this was usually limited to participants who were knowledgeable on the subject. Other primary producers are still questioning and holding judgment on its potential benefits.

The key issues identified for the sector included the need for any carbon pollution reduction scheme to recognise its abatement options, particularly sequestration options so that the sector has the ability to adapt to a Carbon Pollution Reduction Scheme environment. Peak industry organisations do not believe this can be achieved before 2013 when the scheme is due to be considered. In addition, peak industry organisations believe that a Carbon Pollution Reduction Scheme will create yet another government induced competitive disadvantage for the industry:

'Our competitors get significant government assistance and protection – we are not in a position to increase our cost structure.' (peak industry organisation)

Significant policy inconsistencies were also perceived to exist around any Carbon Pollution Reduction Scheme resulting in the view that agriculture as an industry sector is being unfairly signalled out and treated. For example:

'The ETS is a tax on food while (we) continue to mine, burn and export coal (sense of injustice expressed). We're exporting more emissions out of Newcastle in a day than the rest of the country in a year. There are apparent contradictions around policy so you have to believe it is a result of the policy agenda.' (peak industry organisation)

The level of solidarity on this issue across peak industry organisations, local producer groups and primary producers themselves is very high. In addition, peak industry organisations believe their position on these issues are informed by scientific papers, expert advice, government reports and interactions with other peak industry organisations such as National Farmers Federation, National Climate Change Adaptation Research Facility and results from research bodies such as CRRSPI.

As with adaptation, participants indicated that to achieve uptake of mitigation initiatives the following elements were important:

- Discuss climate challenges that are relevant to primary producers own experience.
- Identify and offer financial or productivity reward for mitigation behaviours.
- Ensure there are a number of relevant sources of information who hold the same view to ensure information is both consistent and credible.

5.7 Segmentation

Through an in-depth analysis of the survey responses from primary and secondary decision makers of primary industry enterprises, five segments have been identified which will have important implications for the communications strategy in terms of their mindset, education levels, receptiveness to climate change and individual business and financial situation. The segments are as follows:

**Drought affected
adapters**

**Drought affected
adapters
(20%)
(continued)**

This segment has been affected by the drought and is more likely to listen to communications about climate change and take some

This segment:

- has more of a female skew than most other groups (although all segments are clearly dominated by males)
- are less well educated — more likely to only have some/completed secondary school
- has an older family skew, with most children 16 years or older

**Drought affected
cautious adapter
(26%)**

This segment has been affected by the drought, but is less likely than the adapters to take measures to assist their farming performance and adapt to climate change. They will not adapt on their own and express a desire in having the government develop adaptation strategies for them through education, training and R&D. They are not closed off to adapting, but they don't seem to know how.

This segment:

- is more highly educated than other segments
- has a younger family skew, most children under 16yrs
- is the best of all sectors in terms of financial performance

**Climate change
skeptics
(21%)**

This segment does not believe that climate change exists and usually calls it 'just another drought'. What they are experiencing in their view is natural fluctuations in the climate — "a dry spell." They believe that government is wasting their time and that there are bigger issues to deal with. They are tough to reach through regular means of communication and tough to convince that climate change exists. Yet they still claim to care about the environment.

This segment:

- has lower level of education — mostly 'some secondary school' and less university educated
- is most likely to have children 16 years or older

**Strugglers
(19%)**

This segment tends to be younger primary producers struggling and striving to survive, with the costs of succession and capital costs and are therefore more likely to be in a position where they don't have the capacity for adaptation and mitigation. They are striving to maintain their way of life and their farm. They desperately need assistance — i.e. funding to buy new equipment (and are looking towards the government for this). They are at the cross roads of possibly exiting farming altogether, but are still prepared to 'hang in there' for a while, but a 'little while' is all they really have.

This segment:

- tends to be younger
- considerably well educated

**Independents
(14%)**

This segment is similar to the climate change sceptics in their attitude. They are averse to government assistance for the drought or climate change as they do not fully believe it exists. They are not highly concerned about the drought and prefer to do things their own way — adaptation, farming practices, etc., hence their name, 'independents'. However, they are open to financial counselling.

This segment:

- is slightly skewed to more females
- has more 60-64 year olds
- is least educated of all the segments

It should be noted that there is no significant difference between the segments by commodity type. The only significant difference is the 'independents' segment who are more likely to be located in Queensland and the first two segments who are located mainly in drought affected regions.

6 Developing a message

In developing an effective communications campaign to encourage adoption of alternative practices and behaviors, it is important to consider the message and communications style that will have the most impact. Equally important is understanding how trusted and influential information sources can be best used to influence the decision making process.

Messages will need to be personally relevant, emotionally engaging and credible with clear messages that cut through confusion, provide clarity around the climate change debate through relevant research and information and provide compelling risk management and financial reasons to support reasons to adapt.

6.1 Key elements

Successful communications around climate change to primary producers requires a number of key elements.

6.1.1 Personally relevant information

To gain attention the information needs to be personally relevant to the primary producers' business, local conditions and circumstances. The more it can be related to the specific climatic conditions on their land or to their area of activity and to how initiatives will specifically work for them, the more it will gain their attention and interest. Any calls to action or appeals to adapt based on a moral platform or on generalities will fail with producers who are ultimately running a business. In addition, a general communications strategy that is not locally relevant will fuel the existing misinformation between primary producers and will cement resistance to climate change action.

6.1.2 Emotionally engaging communications

Another key element to successful communication will be to tell a story or stories that are emotionally engaging and which resonate with their frame of reference.

Climate change needs to be positioned as a risk to be managed and will take careful communicating to aid 'conversion' to the reality of climate change and its impending impact on their livelihood. At this stage, climate change is not yet a fact for primary producers, or a religion they believe in or a philosophy they subscribe to.

Climate change also means quite different things to different primary producers across the country. The current default position is that climate change equals drought and is predominately negative. However, depending on locality, some primary producers will actually do better through increased rainfall, with climate change bringing opportunities to either diversify or switch to high yield crops that may be more profitable.

The fact that some areas will benefit from climate change is an unknown insight that may be an effective hook to encourage primary producers to find out more. Climate change may not necessarily mean a complete loss of hope.

6.1.3 Trusted sources

Primary producers feel as though they are under constant attack and have well developed defence mechanisms as a result. One such mechanism is characterised by strong cynicism for information from anyone on any topic at all.

In the focus group discussions across Australia, it was made clear by primary producers that information is always rigorously tested for its validity in three fundamental ways.

1. Information from multiple sources is tested to see if it aligns and checks out—i.e. a primary producer will take information received from a radio interview, check on the internet, call the local research centre and talk to a research scientist before finally checking with his or her partner to get a reality check. If all these sources once verified line up, then the information will be accepted.
2. Information is then tested for its credibility and relevance to ‘their piece of dirt’ or their area of activity — if it doesn’t pass muster, it is rejected.
3. The final test relies on the strength of the information’s claim and its demonstrated ability to contribute to the productivity of the primary producer’s enterprise.

To this end, information strategies need to include:

- communications which can target multiple audiences through a range of trusted sources as the ability to cross reference and verify information is likely to effect the ultimate outcomes in terms of acceptance
- local and relevant information that will resonate, work locally and be seen as potentially valuable and applicable to their particular enterprise as opposed to general information
- information that can genuinely assist with profitability, land conservation, sustainability or risk management at both a practical and financial level.

Sources that understand these three critical tests and their role in influencing primary producers and the industry will ultimately work best. As a result, key target audiences will need to be wide ranging within the local, industry and business community as all have the potential to influence and be credible and trusted sources including:

- other primary producers
- local producer groups (including local Landcare, sustainability and industry groups)
- peak industry organisations
- accountants/financial advisers/bank managers/
- science based organisations and scientists — which are preferably locally based such as local research stations — universities, co-operative research centres, CSIRO and BOM are also key sources for inclusion, although academics and scientists not directly involved in

practical research within the industry are viewed with some suspicion, particularly if they are perceived as pushing a climate change agenda

- state based department's of primary industry (or equivalent agencies)
- Department of Agriculture, Fisheries and Forestry.

As already noted in the report, primary producers, peak industry organisations and local producers groups are united in their view that the most effective change agents are other primary producers. They share information whenever they get together both informally and formally. Examples include at local grower and producer group meetings (including Landcare and sustainability groups); when they drop off the wheat at the silo; at field days and local community events; trials; looking at and comparing other producers in the area ('looking over the fence'); and casual gatherings where producers invite, visit and call on each other.

By contrast politicians, like certain scientists, tend to be viewed with a fair degree of scepticism, as they are perceived to have an agenda. This varies depending on the individual politician and their relationship with the local constituency.

State departments of primary industry were however top of mind (unprompted) when thinking of who would provide assistance to the industry and help them respond to climate change issues. The Federal Department of Agriculture, Fisheries and Forestry was the next most frequently mentioned and the most mentioned after prompting. This positions the department favourably in terms of having a role in both communicating and providing support in relation to climate change initiatives.

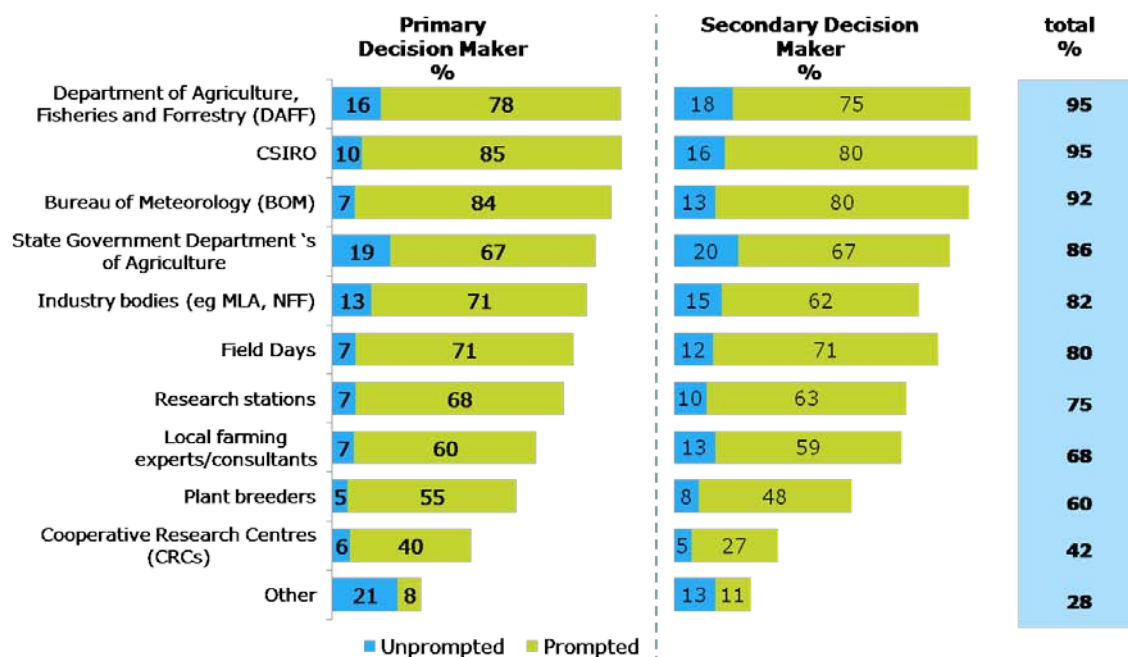


Figure 4: QG1. A range of organisations and agencies are involved in providing assistance to primary industry in responding to changes in climate like extended dry spells. What organisations or agencies have you heard of that provide assistance to farmers?

Peak industry organisations consistently noted the need for group-based extension officers to translate ongoing research and scientific developments into relevant and useable bits of information and to catalyse the change process.

‘The last 15 years the states have got out of extension services. There is now a gap in looking at the bigger issues like changing farming systems, the best systems, the best way to incorporate new knowledge — the information transfer process has been lost. Agri-business is providing consultants, etc, but they always have a particular axe to grind.’
(peak industry organisation)

The loss of extension officers from state government agencies over a number of years was seen by primary producers as a loss of important trusted corporate knowledge they had previously drawn on. This gap means they now have to seek out and find a trusted person or sources that can provide relevant and reliable information. What is clear is they do not trust public servants who have no practical experience in primary industry and will regard any communications from them with scepticism.

Peak industry organisations who advocate managing the risks of climate change also have a key role to play; particularly those who can broker information and help provide advice in a group environment.

However, peak industry organisations were seen by primary producers as being increasingly disconnected from them and producers often had a stronger affiliation and relationship with their local producer, sustainability, Landcare or industry group. This provides the department either directly and/or through peak industry organisations with an opportunity to tap into the local producer group network and leverage them as a key distribution channel.

“There is a real role for the honest broker with no axe to grind... not taking a particular line and supporting the group process is just as important to get the range of advice...(and) facilitates talking between themselves.” (primary producer)

6.1.4 Awareness and use of programs

In terms of programs related to climate change, the Exceptional Circumstances program dominated the thinking of primary producers, followed by the previous program of FarmBis.

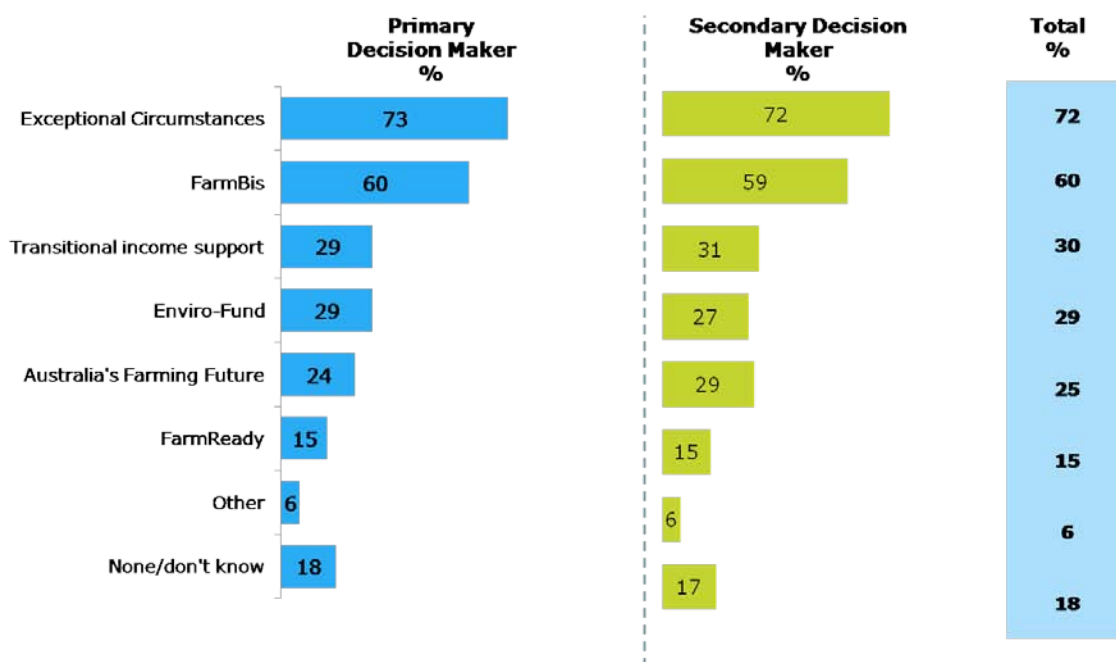


Figure 5:QG3. A range of programs and funding assistance is available to primary industry to adapt in response to climate change. What programs have you heard of that provide assistance to farmers?

The above would suggest that the approaches used to communicate Exceptional Circumstances and FarmBis have the potential to be valuable in the communication strategy for Australia's Farming Future

Survey responses also indicated that Exceptional Circumstances, FarmBis and Transitional Income Support would be the programs primary producers would most likely consider receiving assistance from.

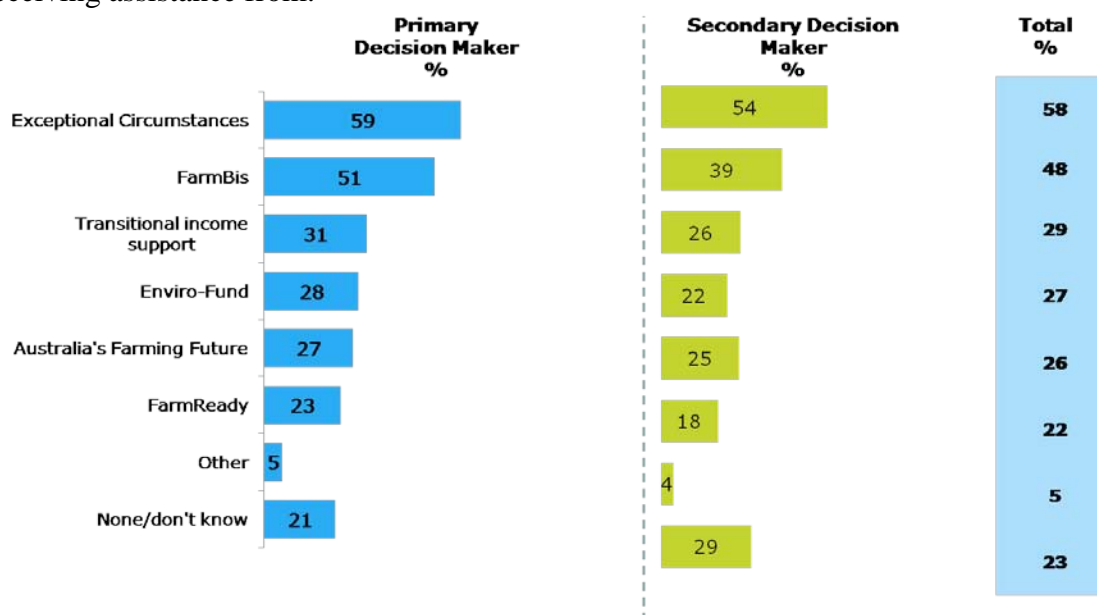


Figure 6:QG4. Which of the following programs, if any, would you consider receiving assistance from? Base: Primary producer - Decision Makers

6.1.5 Clarity and conciseness of messages

Ideas that limit confusion and shift the debate from belief in climate change to risk management will help provide clarity around key messages. In particular, messaging that clearly communicates government's willingness to assist with adaptation through investment in research and development at the local level with unambiguous policies that support primary producers — (i.e. not means tested and based on common sense).

Clearer advice as to what climate change means to a primary producer and the kind of changes they need to make is also essential, based on where they live, their land or area of activity and the particular climate issues they face. At this stage, primary producers remain very sceptical about man made climate change and whether it has or will really impact on their property and/or livelihood. Over half (58 per cent) reported that they reject human induced climate change outright and this will need a combination of compelling messages and highly trusted sources to convince and convert this segment.

If climate change is not believable, then it is not actionable.

'People are so overwhelmed... not sure what is happening.' (primary producer)

'We need to know if climate shifts two degrees where and when will the cut off be; when will we shift? How soon do we need to adapt? This sort of change is so enormous you just can't imagine it.' (primary producer)

The ever-changing nexus between the economy (terms of trade) and the environment (water and climate) creates shifting market conditions to which producers constantly need to respond. As a result, primary producers see themselves as having already adapted to changes in climate and will need to be genuinely convinced that their current practices are not productive or efficient in order to induce further change.

Peak industry organisations also put forward the following questions, which they saw as crucial to explaining climate change and government policy to primary producers:

1. What is the Australian Government's policy on further adaptation?
2. How do they (the government) see that primary producers should be adapting?
3. Will the Australian Government facilitate this process of adaptation?
4. What further changes will climate change risk require of primary producers?

From the primary producer's perspective, these answers are far from clear.

The current lack of certainty and information is also creating a fear factor in the minds of peak industry organisations and primary producers that the government may well sacrifice farm or primary production enterprise viability in pursuit and favour of economic and environmental ideology.

6.2 Benefits to be communicated

There are a number of benefits around change that are likely to have resonance with primary producers based on the research findings which can support and provide communications with a 'win win' message for the industry both at business and individual level.

From the perspective of primary producers and peak industry organisations, primary industry is a business very much like any other despite the strong emotional attachment primary producers have with their land or enterprise and ultimately is focused on maximising returns if they are to survive. This provides an opportunity to powerfully communicate how adaptation and change are part of everyday business practice and can lead to profitable returns. Changes can also contribute to local communities and their sustainability through enhanced employment and development, as well as delivering environmental benefits.

Growing consciousness of the **value of the land** from an environment perspective is also seeing a shift and reinforcing the importance of adaptation and change to long term sustainability, particularly among younger generations.

'We're seeing people more conscious of the value of land and the sustainability of it, especially the younger generations of farmers.' (primary producer)

Survival and prosperity are also inextricably linked and provide a critical bottom line message for primary producers as a driver for change.

'If climate change is real it means you will have to find a way to survive; it is essential to survival.' (primary producer)

Primary producers would rather be **'doing'** than talking and this insight will be useful in informing a proactive, motivational message and approach when targeting primary audiences.

'Climate change is a threat ... so let's do something on climate change. If it's a reality it's time to act – even if it's just a long curve (i.e. natural cycle), we will feel better from acting, doing something sensible without putting our head in the sand – like Nero watching it all burn.' (primary producer)

Certain **information and terminology hampers** communication.

Terminology and information that fails to take into account primary producers attitudes towards human induced climate change will risk failure and be counter productive in communicating and encouraging uptake of both adaptation and departmental assistance. The use of the term 'climate change' sets up negative reactions among primary producers for a number of reasons ranging from scepticism through to perceptions by producers that they are being held solely responsible for causing climate change.

Preferred terms such as climate challenges, prolonged drought and risk management were more accepted, better understood and more likely to motivate change.

6.3 Distribution and tone

Primary producers claim to prefer personal and human communication and consistently use this form of communication to establish the extent they can trust the information they are given and the sources who provide it.

'They [primary producers] also need to know what it means to them personally.' (peak industry organisation advisor)

Messages that capture the mind, have a local feel, don't talk down, are not know it all and include messages that also target women and young people are seen as being the most likely to work and gain traction.

'Again and again this is why face to face communication and the nature of trusted communication sources is so important. Major personal investments hang on the interactions that ensue – this is why they are so important.' (primary producer)

Communications that continue to focus on long term negative forecasts are seen as detrimental. They continue to lock primary producers into feelings of impotence and drive resistance to the government's message of assistance.

While use of the internet is increasing and there are key segments of primary producers who are interested in using it, there is a certain resistance to this channel among some primary producers for reasons, which include age, inexperience, and poor connectivity in remote and regional locations. Section 8 of the report indicates how this varies by segment.

Communications need to tap into existing networks and engage with those who have both the credibility and ability to deliver actions and solutions. Primary producers seek and rely on feedback through their member group as part of their information gathering and decision making processes.

Peak industry organisations claim that efficacy in communications can be measured by the degree of feedback or enrolments at events. Lack of responses, in their view is a strong indicator of failure.

Primary producers and peak industry organisations also cited **persistence** and frequency as an important part of effective communication delivery. Communications that provide ongoing information to address scepticism and provide actual examples of the value of adaptation on particular farms or enterprises are likely to be more successful and eventually erode negative views.

As known sources of information, peak industry organisations and particularly local farmer groups have a key role in communicating government policy to members and making information on policy accessible.

Peak industry organisations also felt they could communicate effectively on climate change adaptation when developing strategy with sub industry and local producer groups. In particular, they felt they could effectively promote adaptation policy and programs when meeting to plan future priorities and projects and at the same time include adaptation programs into those industry plans.

In terms of communicating to members, producer groups reported significant success through emails (which is found to be very effective in 30 per cent to 40 per cent of communications). However, email does not work for all primary producers, as some remain resistant to its use.

Communication efficacy is also influenced by the time of year (given production demands) and as a result will vary by commodity sector. Mobile phones are another communication medium proving to be useful, especially text messages.

Regional (quarterly) activities have a role to play in getting messages out and providing forums for communicating government initiatives — as do champions (respected and trusted persons) who are seen as critical influencers in that:

'They break down barriers and smooth the way.' (local producer group)

6.3.1 Communicating to Indigenous primary producers

The communications advice provided by one peak Indigenous organisation was to use existing networks where possible e.g. Indigenous Land Management Facilitator's network.

'Politics plays a big part – you need to have a connection with the community to get a leg in the door otherwise they'll tell you to bugger off – (I'm) not interested. (There are) so many people knocking on our doors.' (peak Indigenous organisation)

A trusted relationship needs to exist and is critical to successful Indigenous communications. The person communicating needs to be acknowledged within the community in order for people to be prepared to listen. Further consultation then takes place within the community at their respective groups/board meetings and in turn, each group will make its own decisions. This can be very slow, as groups may not meet regularly or frequently.

Because of the large number of funding streams for Indigenous projects a series of networks already exists. For this reason, a key recommendation was to work through these established networks rather than trying to develop new ones (e.g. the National Indigenous Facilitators Network and Caring for Our Country Indigenous Partnerships).

6.3.2 Communicating through peak industry organisations and local producer groups

The majority of the peak industry organisations interviewed see that their role is to provide services, particularly leadership, for the specific industry they represent. However, members concerned about the dollars being invested in peak industry organisations, are increasingly scrutinising how these bodies are performing and what return they are getting on their investment.

As a result, the role of peak industry organisations is changing with the need for consolidation in the future. Notably, new generations have different values about being involved in associations and membership may fall off further in the future. At the same time producer, Landcare, sustainability and industry groups at the local level are valued, utilised and seen as more relevant and directly in touch with the day-to-day issues facing primary producers.

In terms of communications, the majority of peak industry organisations reported that primary producers are averse to dealing with the government and want a go-between to broker on their behalf. To this end, peak industry organisations argue that their raison d'être is to provide a policy brokering and advocacy role, give advice on research and development priorities and to have a stewardship role for that research. To a certain extent, this may be true but as indicated in figure 4, primary producers also see that the department has a role in communicating to them.

In the policy arena, the peak industry organisations' indicated their role is to consider the various options and identify the best way forward for the industry — including deciding on what action will be taken on key issues.

Producer groups also identified a key role in watching out for ill-considered policy, keeping the flow of information going, brokering information to members and facilitating the change

process. As part of that role, they also provide reassurance to members and help them to move forward.

6.4 How to reach and engage with primary producers

Primary producers will adapt with assistance from the government and other sources once they have confidence that their actions will result in benefits to their primary production. Confidence is certainly missing presently and this may be a strategic challenge for communications.

'Messages need to be couched in terms farmers can relate to – tangible stories – not big brotherish.' (peak industry organisation)

Peak industry organisations also advised that the landscape around climate change and adaptation is confusing for primary producers and this was confirmed by primary producers as part of the research study. Although information abounds, it is not coming through the correct sources which is diluting its credibility in the eyes of many primary producers. In terms of credibility and trusted sources, communications need to come via a range of channels - and importantly through the extension process. Ideally, the existing extension sector structures and networks should be used; a view supported by most primary producers as well as peak industry organisations and local producer groups.

There is wide spread recognition that the extension officer network has been effective and that additional expertise relevant to producers can be readily accessed from a range of consultants and advisers. The perception, however, exists that state based services, which have previously supported extension programs are being run down, and primary producers and peak industry organisations are seriously questioning this decision.

Local producer groups are also an invaluable channel and have made it clear that they want to be actively involved in the dissemination of information about government assistance to primary producers to help them adapt to the impacts of climate change.

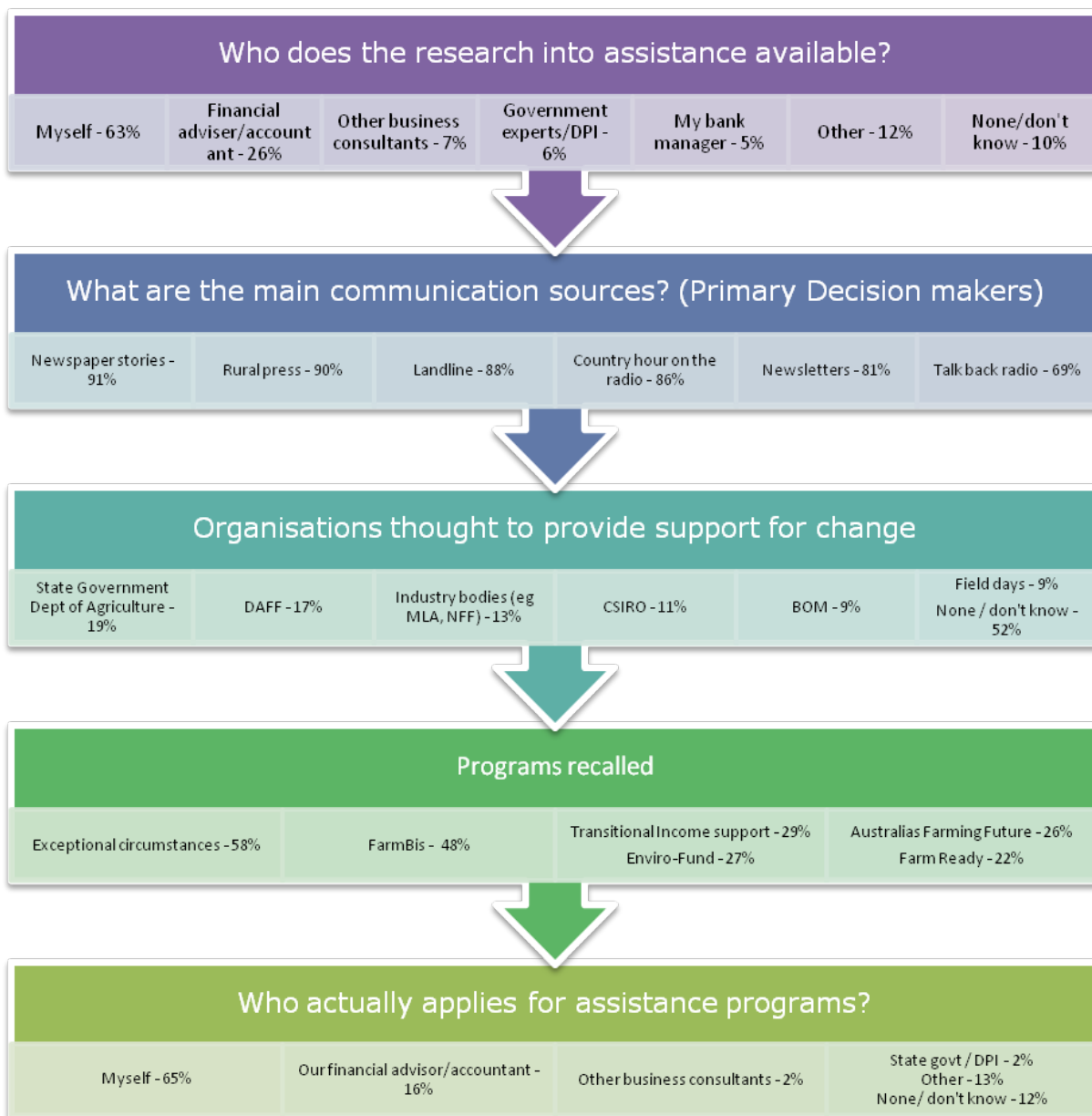
There is also a range of communication mechanisms currently used by both peak industry organisations and primary producers, which could be accessed and leveraged including:

- group extension activities
- one-to-one activities
- small business management person or consultant
- regular email based newsletters
- emailed background briefings
- email forums
- strong website(s)
- online videos
- magazines and publications

- media – the best mediums are being verbal (e.g. radio stories, Country Hour, Macca) and the rural press.

6.5 The decision making process and who is involved

The following diagram maps the decision making process primary producers use to research and source information and the key people and organisations who are involved. In particular, it identifies the audiences and key influencers who should be targeted or used as a channel when formulating the department's communications strategy.



Viticulture producers are more likely to use their financial adviser or accountant to assist with the research and applying for assistance.

7 The role of policy and programs

Policy can support or hinder the process of primary producers mitigating or adapting to climate change in a number of ways.

To this end, policy needs to maximise primary producers' ability to respond to climate change as well as be a contributor to positive economic outcomes (profitability) and key social changes that are frequently associated with falling profitability — such as loss of community, family break-ups, lack of ability to effectively manage succession and moving to more off farm work.

Policy can also help through more holistic thinking. There was a feeling among primary producers that government policy was often designed to make operating more difficult for primary producers and was frequently expressed as follows:

'You could let a lot of people go broke but this would cause more disruption across the industries.' (primary producer)

A high priority expressed was to avoid unintended outcomes from policy initiatives. For example, hail netting was a necessary adaptation to a changing climate. However the netting was ruined by big storms (extreme weather event) on the North Coast of NSW. It was contended that following insurance claims producers could not afford ongoing insurance premiums and were costed out of the industry.

Support for government policy to assist primary producers to adapt to climate change is highest among urban dwellers (92 per cent) and lowest among secondary decision makers in primary production operations (68 per cent). However, 83 per cent of primary decision makers approve of the Australian Government supporting Australian farmers to adapt their practices in response to climate change.

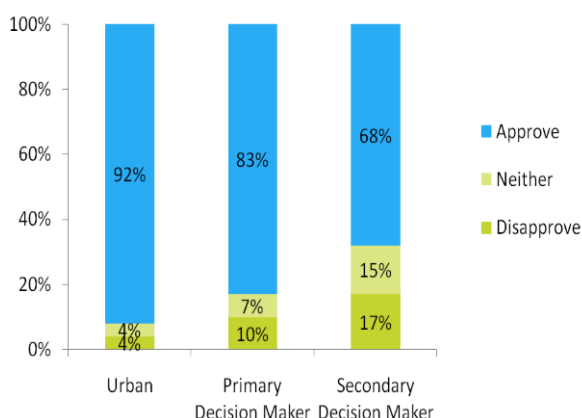


Figure 7: QE2. Overall, do you strongly approve, approve, neither, disapprove or strongly disapprove of the Australian Government supporting Australian farmers to adapt their practices in response to climate change?

The research shows that primary producers see that there is a key role for government in:

- research and development
- education and training (but prefer the way they currently learn, in most cases)
- exit subsidies potentially
- other subsidies
- specialist advice depending on who delivers it and what's their underlying motivation.

Peak industry organisations and local producer groups also see a similar role for government in:

- research and development (especially co-investing with the private sector)
- training and development (where government funds and other agencies deliver)
- target subsidies developed for special circumstances outside the control of producers
- exit subsidies delivered and worked up in partnership.

7.1 Research and development investment

A key role for government according to all groups is to fund research and development given it would help all industry sectors look at the emerging issue of climate change.

However, peak industry organisations were divided as to who should do research and development. While there were benefits to government taking up this role (e.g. shared knowledge), it was noted that the private sector already does this work and that perhaps it was really an opportunity for the government to co-invest. It was suggested that this would help alleviate tensions around who conducts climate research and any potential commercial limitations.

'Good thing that they do that. Trend is moving to more private breeding companies and this creates issues with royalties and breeder rights.' (peak industry organisation)

Where peak industry organisations saw their role was in helping drive the research and development agenda for their sectors while maximising government R&D dollars and ensuring research outcomes were fed back into the industry. They also saw their role as developing and making available resources and tools such as carbon foot print calculators, risk management tools and environmental assurance guidelines.

In the meantime, peak industry organisations would continue to drive their own research and development programs centred on adaptation, mitigation, and information access — with the goal being to get the balance right between increased productivity and water quality, loss of nutrients and building soil and carbons. They are also planning to provide access to consultants and advisers, bringing in information from multi-national sources. Support to the sector will include the provision of technical workshops and conferences to ensure that best possible practices are made available to their members.

On the face of it peak industry organisations appear to have the potential to play a useful role in communicating government programs to assist with adaptation and mitigation. However, there are vested interests in peak industry organisations positioning themselves in this way. As noted earlier, peak industry organisations are seen by primary producers increasingly as more disconnected and less personally relevant than local producer groups and did not come readily to mind with primary producers as sources of assistance in relation to climate change as compared to the department, state and territory agencies and scientific organisations. The conclusion to be drawn is that peak industry organisations should be one of the targets and channels included in the communication strategy but should not necessarily be relied upon to reach the primary producers.

Local producer groups saw their role in brokering and filtering research and development information between peak industry organisations and government departments and their members. They emphasised however that change processes needed to be bottom up and that top down strategies are by and large ineffective.

'Most difficult thing is when you are forcing something on farmers e.g. feed systems, weeding programs because it has to come from the farmer. Penny Wong won't work — need to get on board with (producer groups) and feed information out to farmers through them.' (local producer group)

7.2 Training and development

There was widespread in principle support for training and development as a way to assist producers to adapt their practices, particularly if undertaken by the government.

'Really important — this role has to be done by government.' (peak industry organisation)

Local producer groups felt strongly that the government should support training, including providing support for extension workers. Information on climate change was also identified as needing to be filtered and brokered as part of these education and training programs.

'A gap clearly exists here especially on climate change – who is educating on climate change, helping farmers sort out the crap from the emerging issues.' (local producer group)

Local producer groups also saw the government as having a pivotal role in providing overarching policy and financial support for learning with regional universities and rural colleges involved in industry training.

'Government should fund it but training should be provided by farming groups.' (local farmer group)

Peak industry organisations agreed that training was something that government needed to fund but that industry groups felt they were much better placed to do the actual training delivery.

Primary producers themselves indicated that they prefer more informal on the job training including watching others and gaining first-hand experience. Few producers saw training and

development being delivered as structured training courses through TAFE, universities and rural colleges.

Most producers (but not all) were wedded to the extension style learning they were accustomed to with a preference for on farm demonstrations and learning and training in small groups set up through existing state based networks in their local regional hub. Many in the group discussions claimed they would struggle with remote learning as they have limited access to the internet and very limited interest in using it for training purposes. This does not affect those interested in using other internet services as an information and communication channel as explained earlier in the report.

7.3 Exit subsidies

The idea of exit subsidies to assist primary producers to leave their property and unprofitable business had mixed reactions from primary producers. For the majority of primary producers this is not a palatable solution and is one they would personally seek to avoid at all costs.

Peak industry organisations also saw this as contentious issue and took the view that the government should not intervene as it creates market distortions (e.g. managed investment schemes; water markets driving up prices) — which have a huge negative impact. Their view overall was “*no but!*”

‘Not a good move.’ (peak industry organisation)

Local producer groups also felt that government buyouts have the very real potential of taking commercial land out of production and that such interventions should be restricted to iconic sites such as marshlands. These views were very strongly held.

Primary producers themselves held similar views, with the buy-out depending on the land use. It was seen as reasonable for environmental ends but not when taking commercial land out of production.

For all groups, this is not a black and white issue and it was put forward that industry based buy out strategies were needed and ought to be developed in partnership with peak industry organisations, local producer groups and government.

It was also recognised that for some primary producers this is a legitimate and perhaps the only realistic solution available to them.

‘You know most farmers just can’t think of doing anything else. But I know someone who left the farm and went to work in the city. They got a good job and are heaps better off. I think some farmers just don’t give this idea [exiting the farm] the proper thought they should.’ (primary producer)

‘It’s a good social response so that people aren’t put on the dump — it provides an option to keep communities alive. It’s essential for government to support rural counsellors.’ (strongly held view by farmer groups)

7.4 Other subsidies

Primary producers and local producer groups expressed the view that subsidies using a partnership approach would be of benefit where the primary producer invests an amount towards say new equipment and technology and the government provides financial assistance. They also reported the need to move away from exit subsidies and similar payments and instead move towards incentives to achieve better practice and natural resource management outcomes. The lack of industry infrastructure investment (compared to mining development) for mobile phones, road, rail and freight subsidies to release pressure on farms was also seen as a problem that needed to be addressed.

7.5 Specialist advice

To effectively engage with the primary industry sector on climate change the government needs to establish how climate change is real at the individual farm or producer level, clearly communicate what producers can do now and then specify what actions primary producers need to take.

Primary producers, peak industry organisations and local producer groups reiterated throughout the research study that they would make the decision to adapt provided they have the right advice and validation information on how climate change will impact on their land:

'...The person paying for costs of changes needs to access information in the right way ... through extension groups.' (primary producer)

The government also needs to fund a range of specialists with expertise and information, which can be made readily available to the industry and industry groups. The flow of more dollars to ensure the transfer of knowledge and current technologies is widely disseminated was seen by all groups as extremely important.

'It's extension with a difference. The old way was to get information to people through scientific development of the information where new ways would be identified and a hand out produced. The process works better when farmers self identify the changes they need to make and they search out the help they need. This is a facilitated, structured process and was once available through FarmBis. In this process farmers became problem identifiers and solvers who didn't need to be spoon fed.' (peak industry organisation)

8 Communication implications and recommendations

Primary producers will only accept communications they can test and confirm through a mix of trusted sources (including the secondary decision maker of the enterprise) and that offer a clear business benefit or productive solution for their specific property or operation.

There is also a need for narrow cast communications to address the five distinct and different 'mind sets' held by primary producers towards climate change and how they are likely to respond to it.

The following table provides a detailed analysis of each segment in terms of: their openness to information about adaptation and mitigation; who they see as a trusted and credible source; the key messages most likely to resonate with them; which common and specific distribution channels to use; and the tone and focus of the communication.

	Drought affected adapters	Drought affected cautious adapters
Disposition towards Australia's farming future program		
Openness to attending to information about adaptation	High Risk managers spurred into action by drought	Moderate to High Climate change believers
How to communicate		
Who is trusted/Credible	<ul style="list-style-type: none"> • Successful local producers • Local producer groups • Primary industry organisations 	<ul style="list-style-type: none"> • Successful local producers • Demonstration sites
Key messages	<ul style="list-style-type: none"> • Help for new plant and equipment • Persistent drought, decreasing rainfall and falling water tables 	<ul style="list-style-type: none"> • Help for training and development • Increasing extreme weather – persistent drought, decreasing rainfall and falling water tables • Human activity is the cause
Distribution channels for all	<ul style="list-style-type: none"> • TV/press including rural press (81% and 90% respectively) • Landline and Country hour (radio) (88%, and 86% respectively) • Newsletters (81%) • 1300 phone number you can call to get information (63%) • Email alerts (58%) and info from PM and relevant Ministers (54%) 	
Specific channels	<ul style="list-style-type: none"> • Internet Blog (45%) 	<ul style="list-style-type: none"> • Email alerts (69%) • 1300 number (66%) • SMS (31%) • Interactive CDs (54%) • Podcast (27%)
Tone	Focus on adaptation and assistance to adapt to drought and for mitigation; less on adapting to climate change	Can speak freely about climate change, drought and need for adapt and mitigation

	Strugglers	Independents	Sceptics
Disposition towards Australia's farming future program			
Openness to attending to information about adaptation	High Competing concerns – both primary worker and spouse need to find work off farm	Moderate to High Climate change believers	Low
How to communicate			
Who is trusted/Credible	<ul style="list-style-type: none"> • Successful local producers • Demonstration sites 	<ul style="list-style-type: none"> • Primary industry organisations 	<ul style="list-style-type: none"> • Hardly anyone • Bank manager/ Accountant/financial adviser/ Business consultants/State DPI experts
Key messages	<ul style="list-style-type: none"> • Help for new plant and equipment • Help for training and development • Government can assist with costs of adaptation • Much more adaptation is needed • Increasing extreme weather 	<ul style="list-style-type: none"> • Government can assist with costs of adaptation 	<ul style="list-style-type: none"> • Explain why climate change adaptation is more important than other issues • Explain that climate change appear to be occurring rapidly • Explain that the impacts will vary across Australia • Position climate change as a risk management strategy (It may, or may not be true, but needs to be managed) • Government can assist with costs
Distribution channels for all	<ul style="list-style-type: none"> • TV/press including rural press (81% and 90% respectively) • Landline and Country hour (radio) (88%, and 86% respectively) • Newsletters (81%) • 1300 phone number you can call to get information (63%) • Email alerts (58%) and info from PM and relevant Ministers (54%) 		
Specific channels	<ul style="list-style-type: none"> • Social networking site 43% • 1300 number (66%) • SMS (34%) • Live webinar (49%) • Interactive CDs - 54% • Podcast (27%) • Talk back radio (79%) 	<ul style="list-style-type: none"> • 1300 number (64%) 	<ul style="list-style-type: none"> • Financial adviser /accountant researches (+3%, 26%) • Business consultants, research (+1%, 8%) • Bank manager applies for government assistance (+2%, 2%)
Tone	<ul style="list-style-type: none"> • The focus is on help to adapt to challenges of which there are many. 	<ul style="list-style-type: none"> • Talk about risk management • Broaden assistance to 	<ul style="list-style-type: none"> • Need to recognise climate change is in doubt; try and avoid long term, fear appeal

	<ul style="list-style-type: none"> Climate change represents one of many difficulties and the focus should be on assistance 	<p>include: business planning, superannuation, aging of the main worker, children, spouse and main worker needing off farm income</p>	<ul style="list-style-type: none"> Try to underbid by talking about specific and real actions, imminent challenges and treat it as a risk management strategy
--	--	---	--

To elicit the most effective response, the communications strategy will need to:

- include a broad range of segmented target audiences as many are likely to effect the ultimate outcomes in terms of acceptances
- take into account the importance of local, relevant information versus general information that will not resonate or work at the local level let alone on their particular property
- provide information that will assist with profitability or land conservation or sustainability in a practical and financial sense
- understand the issues, barriers, motivators, and mindset of each audience segment.

One of the most important findings of the study is the need to carefully manage the use of the term climate change. For many of the primary audience, the phrase itself throws up considerable barriers and tends to limit conversations around adaptation and mitigation. However, where the focus is on climate challenges or prolonged drought, there is a greater acceptance and openness to consider assistance for adaptation and mitigation. Similarly, the government would be better placed to position itself as a responsible player in managing the risk rather than debating whether climate change is real or not, as it is difficult for primary producers to argue against this.

Communications that focus on improving the profitability and productivity of primary producers and that are relevant, pitched at the local level and relate specifically to what primary producers call 'their piece of dirt' will be important factors in getting the attention of producers and building their understanding around the government's adaptation and mitigation strategies to deal with climate change.

Local communications strategies that clearly address the benefits to producers in a way that is personally relevant, emotionally engaging and credible are likely to have a higher impact than generic or broad campaign messages. The use of relevant local media channels such as specific rural publications, radio programs and internet services will also help support local communication and extension activities and provide multiple channels for primary producers to test and interrogate the information they receive. A general communications strategy unsupported by localised information by contrast will simply fuel misinformation currently being exchanged within the primary producer community and further cement resistance to the goals of the Australian Government regarding climate change.

Specific communication insights and recommendations for fisheries and forestry are provided at Appendix V and Appendix VI respectively.

Appendices

Appendix I – Desktop research report

Glossary

NRM	Natural Resource Management
ABS	Australia Bureau of Statistics

1. Overview

This literature review's focus is on developing insights upon which a communications strategy can be built that will encourage Australian farmers to adapt and mitigate their farming practices and adopt new technologies to counter climate change. It does not attempt to explain the science or quantify the measurement of climate change in Australia. While the majority of the literature reviewed was on the attitudes, perceptions, and behaviour of Australian farmers, it includes a section on differences between attitudes held by the urban population and farmers. The reader should consider that the majority of the literature reviewed was published in the last decade and during this time many farmers have experienced the longest recorded drought in recent Australian history.

For the purpose we have taken the definition of climate change to be “any long-term change in the patterns of average weather of a specific region or the Earth as a whole”.

We have structured the review loosely on the theory of reasoned action as proposed by Ajzen and Fishbein (1975 & 1980). Simply put, a person's behaviour can be predicted by their attitude towards that behaviour and how they think their peers would view them if they performed that behaviour. To start with, we have synthesized the research into the following sections:

- Perceptions of climate change
- Attitudes to climate change
- Drivers and barriers to change
- Communicating with farmers

2. Perceptions of climate change and its impact

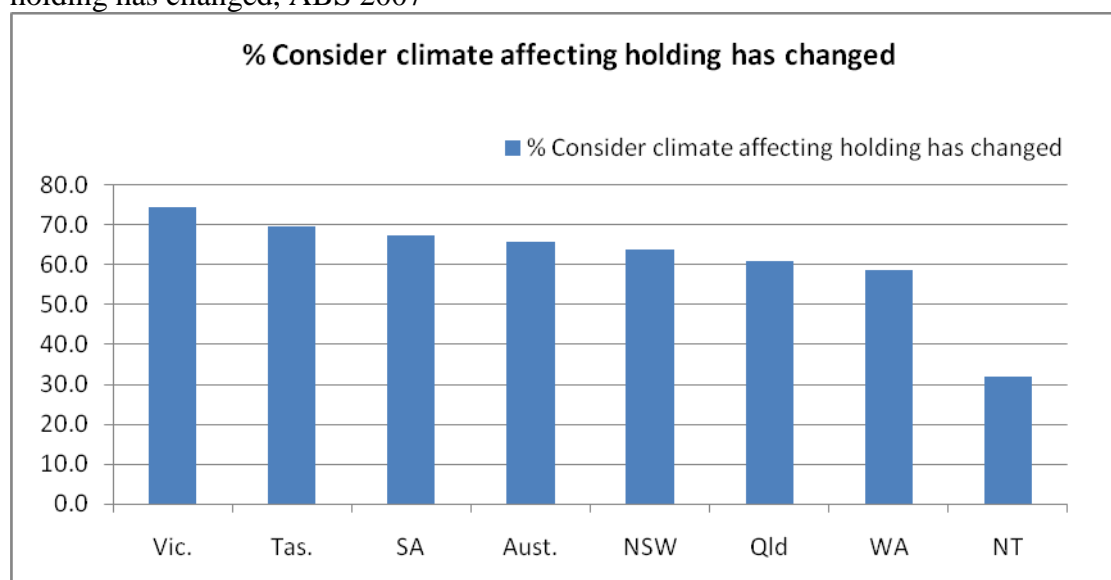
Farmers, by nature of their profession, have a great awareness of the climate, how it will impact them and any variations from the perceived natural cycle. Therefore it is not a great surprise that farmers are very aware that the climate is changing. In 2007, the Australian Bureau of Statistics (ABS) provided an important benchmark of farmer's perceptions of the effect of climate change on their holdings. The scope of the 2006–07 Farm Management and Climate ABS Study was with agricultural businesses above a minimum size cut-off recorded on the Australian Business Register (ABR).

The study provides a perspective on the views of farmers to changes to the climate, the effect of these changes and the behavioural changes adapted by farmers. In summary the study found:

2.1 Two out of three farmers consider the climate is changing, predominantly by changes in rainfall, extreme weather and warmer temperatures

Almost two thirds (65.6 per cent) of the 150,000 agricultural businesses consider that the climate change has affected their holding. The most common affect cited was in changes to rainfall, extreme weather and warmer temperatures. Geographically there is quite a variation in perceptions while this is most felt in Victoria (74.2 per cent) in the Northern Territory (31.8 per cent) this is much less so.

Table 1: The table below shows the percentage of farmers who consider climate affecting holding has changed, ABS 2007



2.2 Two out of three farmers are feeling the impact of climate change by drops in production and increases in pests and disease

The 2007ABS study showed a slightly lower proportion (62.4 per cent) of agricultural businesses consider that it is having an impact on their holding with the majority reporting a decrease in the level of production (88.8 per cent) and an increase in pests, weeds and disease (55.5 per cent).

This was examined in more detail in August 2008 in the study “Climate Risk and Industry Adaptation: Quantitative Study” conducted by the Bureau of Rural Sciences that examined the extent to which farmers considered changes in the physical conditions as proof that climate change was happening. This showed that while events portrayed in the media, such as melting icebergs were strongly attributed to climate change it was the events that impacted farmers directly such as reduced water on the property and local changes in weather that resonated the most.

The study highlighted that one in three farmers were unsure whether these events were a cause or made worse by climate change, which indicates that while there is widespread awareness that the climate is changing there is a significant proportion who are unsure of the causes of climate change.

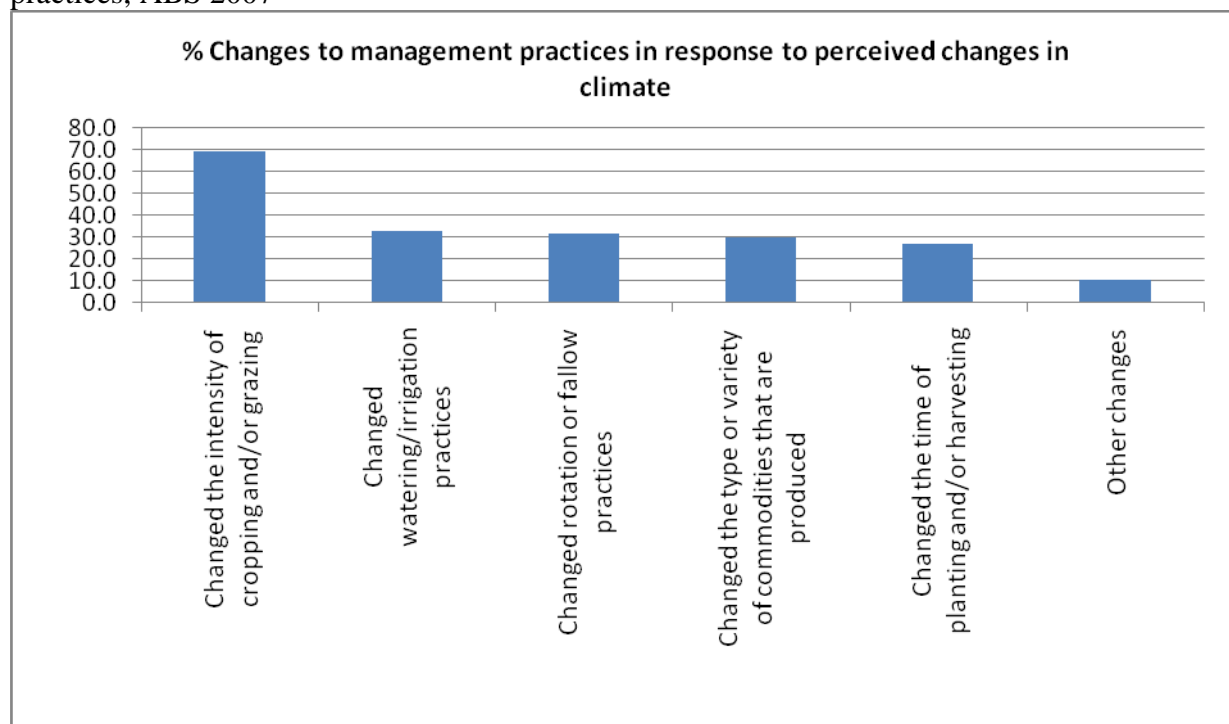
2.3 Half of all farmers have changed farming practices as a result of climate change

The widespread awareness of climate change has had a direct influence on the behaviour of farmers when it comes to farming practices. The ABS study found that just under a half (49.6 per cent) of all agricultural businesses reported that they had changed their management practices - either by intensity of cropping (69.3 per cent), changes in irrigation, or rotation of fallow practices. Cotton growers (65.5 per cent), Apple and Pear Growers (61.9 per cent) and Grape Growers (60.5 per cent) reported the highest rate in changing farming practices as a result of climate change.

Similarly, The Natural Resource Management on Australian Farms study 2006–07 by the ABS reported that 65.8 per cent of farmers had improved their natural resource management (NRM) practices (including the management of weeds, pests, land and soil, water and native vegetation). Of those improving their practices, 88.6 per cent were to increase productivity, 88.4 per cent for farm sustainability, and 74.5 per cent to improve environmental protection.

These findings indicate that farmers are changing their practices in response to climate change however it can be assumed that these changes are primarily motivated to improve the productivity rather than a motivation to improve the environment as a whole through reducing emissions.

Table 2: Percentage of farmers who perceive climate change has changed management practices, ABS 2007



While many farmers are changing practices in response to climate change there does not seem to be a large number of farmers leaving farming as a result of climate change. In the 2006 Agscan report on Producers Goals less than 1% of farmers surveyed said that they had an intention to leave farming because of drought or unfavourable weather conditions, with the majority citing retiring or too old. While in the same study 24% of farmers who had set themselves a goal; the single most important goal was surviving the drought/keeping the farm/Drought Management.

Geographically some of the research shows national differences in some of the sustainable activities - on average 3.4 per cent of agricultural land is set aside nationally for conservation while the proportion in Tasmania is 8.4 per cent. Similarly, the percentage of land managed by agricultural businesses that was used for other purposes, including forestry, was also higher in Tasmania, 10.0 per cent, compared to 3.2 per cent nationally.

3. Factors affecting attitudes to climate change and farming practices

From the literature we summarise that the following factors have the most significant impact on farmer's attitudes to climate change and to their intention to change farming practices.

3.1 Demographic and psychological differences

As part of the National Land and Water Resources Audit a review *Human and social aspects of capacity to change to sustainable management practices* by (Cary, Barr, Aslin, Webb & Kelson 2001), identified the most commonly found, albeit few characteristics, that influence attitudes and the adoption of sustainable management practices. If we draw a parallel between sustainable management practices and changing farming practices to counter climate change it is possible to say that the major factors are:

Age & Succession – there is mixed evidence suggesting that there is a linear relationship between the average age of farmers and the implementation of sustainable practices. However, where there was an increase in age, and of migration away from rural areas, it suggests a reduction in family farm succession leading to a reduction in the investment in sustainable management techniques, training and education.
“In localities with an increasingly aged farmer population and low rates of inter-generational transfer, adoption of changed management practices that require increased capital and labour commitment is likely to be lower.”

Farm income and farm characteristics – Low farm income or high debt was interpreted to be a major barrier to adopting sustainable farm management practices

Participation in Landcare and property management planning – Those farmers and farming families who are exposed to sustainable management practices amongst their social and peer groups are more likely to adopt those practices themselves.

Farm size – The evidence suggest that the larger a farm the more likely the farmer is to adopt new and more sustainable farm management practices, in part explained by the greater economies of scale associated with larger farms.

However as highlighted by Fenton, MacGregor & Cary 1999; 2000, *“Individual capacity to change is not one-dimensional”*. An individual's capacity to change differs according to the changes being considered and is particularly influenced by the stage reached in a person's life. These factors examined in isolation make it difficult to predict whether landholders are more likely or less likely to change land management practices. The evidence concerning the impact of age on adoption of sustainable practices is mixed; any relationship between age and the adoption of sustainable practices is unlikely to be linear and may be confounded by other factors such as income and education.

If one of the above was to be given prominence over the others then perceived financial situation was found to be a better predictor of adoption behaviour. The above study found that farmers expectations of their future financial situation was a better predictor of the adoption of sustainable management practices as is regularly found in other industrial sectors. *“Feeling financially secure is an outcome not just of current financial circumstances, but of future expectations and psychological disposition.”*

3.2 “Production ethos” to a “balance of concern” shift

In the past Australian farmer attitudes have been described as having a sole focus on production at the expense of everything else.

“Australian agricultural development in the last two hundred years has been generally driven by a production-focused ethos. Natural resource protection was often a reaction to unanticipated major threats to the productive resource In more recent times the focus of the Australian community has shifted from a production-focused ethos towards a balance of concern for both the protection of natural values such as biodiversity and landscapes and the maintenance of food safety and quality”

National Land and Water Resources Audit, 2002

This shift in concern is as a result of the increase in risk and uncertainty in farming brought about by climate change.

Frequently in the literature climate change appeared in the top three factors of issues or challenges farmers face *“Climate change rates among the top topics concerned rural residents in areas currently affected by drought. It is also linked closely to the other issues of importance – such as drought, water supply and rural hardship..”* ARG Study 2006.

It is clear that the attitudes of Australian farmer's towards climate change are generally positive and in recent years have become stronger. *“It also appears this strength of feeling is a relatively recent phenomenon, with some people saying they had changed their attitude towards climate change over the past few years”* Australian Research Group Study 2006.

This relative importance was also highlighted in the Bureau of Rural Sciences survey in 2008 which found that 81 per cent of farmers consider that changes in weather patterns are a part of a natural cycle and 79 per cent felt that it was a combination of both man-made and natural influences.

3.3 Role of risk and uncertainty

Farming by its inherent nature is subject to risk; however increases in climate change have elevated the relative measure of risk and uncertainty. While many farmers acknowledge that climate change is occurring now and impacting their holding they are uncertain about the effects that it will have on their holding and financial viability.

“One key reason why some farmers fear climate change is that it will lead to unpredictable changes to the weather. This lack of predictability undermines their ability to adapt to the new conditions. As a result they fear losing the ability to control the outcome of their farming practices. This loss of control strikes at the heart of what it is to be a farmer” ARG Study 2006.

While the profit motive in relation to risk is as strong in farmers as it is with business people in general, Fenton, MacGregor & Cary (1999) noted in their research that...

“The motivation behind human behaviour is more complex than a simple drive for financial profit. While considerable research demonstrates relationships between beliefs about profitability and adoption behaviour this is mediated by a great variation in attitudes towards business profit and a consideration of the risks that characterise Australian agriculture.”

3.4 City Vs Bush divide

There is a general perception amongst farmers that there is an increasing divide between urban and rural communities in respect to rural land management and conservation. Research undertaken by The School of Natural and Rural Systems Management at the University of Queensland (June 2007) sought to investigate urban peoples perceptions of farmers and rural land management and conservation. In their findings whilst there is a majority view that current rural land management is unsustainable and that the environment in rural areas is not in good condition, this is not necessarily attributed to present-day farmers – past policy and land management is acknowledged as contributing to the current state of the environment. They found that there was *“a level of sympathy for farmers and their circumstances”*. They were able to clearly identify three main segments when it comes to Queensland's urban population

Pro-farmer (40 per cent) – has a high level of sympathy and trust in farmers and tend to feel that too much regulation and outsider influence is having a negative impact on farmers. They have a mixed view of the environment and general optimism that the things are improving

Fence-sitters (40 per cent) – undecided views on a range of issues, but have a general sympathy for the farmers but equally share a mid to deep-green concern on environmental issues. They remain split and undecided on the extent to which farmers should be influenced.

Mid to deep green (20 per cent) – High level of engagement in conservation issues. Many hold negative views to the environmental performance of farmers and the poor condition of the environment in rural areas, with low sympathy towards farmers

In summary, a simplistic “city-bush” divide was not found in the study. On the whole the urban population are sympathetic to farmers and there is a general feeling that city people are disconnected from and ill-informed on issues in the bush.

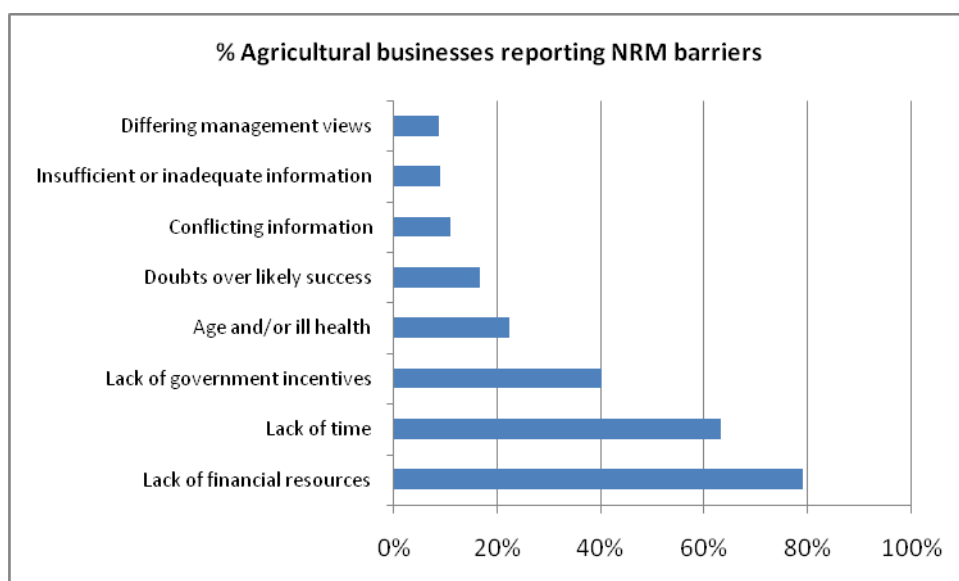
On farmers attitudes to the city people and who is to blame for climate change

“Messages which attempt to shift the blame for climate change from country people to city people are unlikely to be effective. While country people recognise the higher level of fuel use in cities leads to more emissions, they tend to feel that the cliché of blaming the city is shirking responsibility. In fact, there is a sense of guilt about their own contribution through generations of land clearing...”. Attitudes towards climate change in rural & regional Australia. Australian Research Group.

Farmer’s attitudes to the environment and the need for change commonly take in a pragmatic perspective in relation to those whose lives and wellbeing rely on it in amore direct way compared to urban populations. The literature seems to show that while there may be a perceived divide between city and bush in reality this does not appear to be as pronounced as is commonly reported in the media or by commentators.

4. Drivers and barriers to change

An examination of the significant barriers and drivers to changing farmers practices in response to climate change undertaken in the Natural Resource Management study conducted by the ABS during 2006–07 found nationally, 71.0 per cent of agricultural businesses reported barriers to the improvement of their NRM practices (including the management of weeds, pests, land and soil, water and native vegetation). Of the agricultural businesses reporting barriers, the most common reasons given were lack of financial resources (78.9 per cent), lack of time (63.1 per cent) and lack of government incentives (40.0 per cent). Age and/or ill health was given as a reason by 22.2 per cent of agricultural businesses nationally. NRM Study, ABS 2007.



4.1 Values to influence action

A deeper insight into the values that might influence farmers to adopt new practices was developed in a study for the Climate Institute on the Attitudes towards climate change in rural and regional Australia. The qualitative portion of the study workshopped a number of value statements for interviewees to respond to, their findings provide some valuable concepts for developing communications with farmers:

Science – People polarise on the question of scientific facts. Some consider that their grasp of detailed technical facts is part of their identity. However these people were in a minority. Most people were happy to know as much technical detail as they need to know about the topic and not much more.

Human action – There was an underlying feeling of concern for how humans are adversely affecting the environment for the future. While farmers believe they are good custodians of the land today, they recognise that their predecessors did a lot of damage through land clearing and other practices that we must now deal with.

Helping others – Pragmatism rather than altruism appeared to be the dominant view in the discussions. This was partly influenced by the fear that their personal and economic survival was at stake because of the continuing drought.

Protecting the planet – For farmers the planet was seen as an admirable cause, but principally as long as it was associated with maintaining the productivity of the land. Linking this to Gaia-like thinking did not appear to be a strong motivator.

Responsibility – Rural and regional people are more than happy to take responsibility for their own practices and their own future – as long as they are able to. They are unlikely to look for someone else to blame, even though they are inclined to look to the rest of society to help them out when times get tough. This is why climate change is such a concern – because it threatens to take from them the ability to take responsibility.

Waste – There is some receptivity to an argument about waste, but overall it is seen as a nimby (not in my back yard) issue. That is, I don't think I am wasteful myself, but there are reasons to believe that others are.

Future generations – This gained unanimous support. There is a strong feeling that climate change means we can't have everything we might want and that the time has come for mankind as a whole to exercise the discipline for the sake of the future.

Australian pride – This did not resonate. It stretched the notion of "being an Australian" into a territory that did not seem meaningful for rural and regional residents.

4.2 Community based action

In a number of the studies that examined ways in which to manage challenges and adopt strategies to encourage changes in farming practices, the importance of including the community was stressed regularly. Many farmers have a strong affiliation and feel a part of their local community and that people in their local area help each other out.

“There is a long tradition of research that shows how individual personality traits and psychological resources have a significant influence on determining response to risk. Recent research in Queensland suggests farmers are more likely to have a personality style adapted to perseverance, autonomy, solitude and a capacity to cope with adversity. Of 14 general personality styles expected in the wider community, farmers were found to generally fall into a limited suite of five styles. These five styles have a common tendency to experience discomfort in group situations. Whilst this work is formative, it provides an indication of why membership of Landcare groups is unlikely to cover the whole of the farm population or why Landcare is not necessarily the most effective means to inform or influence land managers or why group extension is, at best, one tool for delivering training on new farming techniques.” Fenton M., MacGregor C. & Cary J. 1999.

Strategies and communication that focus on the needs and address the community as a whole will be better received and provide more incentive and influence. It is important that initiatives tap into existing social networks and coordination mechanisms rather than create new ones.

4.3 Government assistance to manage impacts of climate change

In the Bureau of Rural Sciences survey of 2008 respondents assessed ways in which the government might assist them to manage the impacts of climate or weather. The majority of respondents were interested in financial assistance for current problems and future investments, receiving support to invest in fuel efficient machinery and develop more sustainable management practices and for access to training and education. In the same study it was found that the majority of respondents (75 per cent) did not trust the government and only (23 per cent) of respondents believe that experts can be relied upon to tell the truth, highlighting a potential credibility issue.

However to address these key insights and recommendations from the IPSOS on Environmental Stewardship Program following findings were made:

Removing the uncertainty & risk of a new program requires good planning and a strong communications strategy - In particular the program must be designed to overcome the barriers of uncertainty in the environmental efficacy of management actions, the risk that the government will change or not commit to obligations and uncertainty in the cost of participating in the long term. Respondents felt the program must offer a true incentive, ensure that the cost of participation is kept to a minimum by reducing bureaucracy, develop a strong communications strategy through education and compliance, be clearly understood, be open and transparent, have clear objectives, empower landholders, and ensure flexibility to the needs of different landholders.

Understanding the market is critical to attracting large numbers of quality participants – Understanding the characteristics, values, aspirations and communications channels will ensure that participation rates are balanced. Programs should cater for the differences in landholder types.

The financial incentive is a major driver and barrier to participation – This view was strongly supported especially when taken in the context of activities with a public benefit. However there was also a concern over high opportunity costs impacting on participation rates, in relation to funds not covering on-going costs throughout the duration of the program, expectations for payments that compensate for lost opportunities, not wanting to restrict access to future opportunities and the perceived high cost of covenanting land.

Allowing landholders the flexibility to match the management actions to their own goals – Having the ability to decide on the actions to take which in turn provides landholders with the “autonomy and greater sense of ownership” on the management of the program.

Duration and type of commitment is a driver and barrier to participation – This is influenced by the specific situation and attitude of the landholder in some respects long-term commitments were a deterrent because of a loss of control, missing out on future opportunities and uncertainty with achieving the outcomes in time, desire for long-term programs was driven by an alignment with “farm planning, seasonal variation and commitments to bio-diversity”.

Reluctance to enter into covenants – Due to perceived loss of rights, concern over how it might affect the price of their property, concern over longevity of support in relation to the length of the covenant, fear of the consequences involved in not meeting the obligations and unwillingness to commit their children's to being future owners to the covenant.

4.4 Adaptability and flexibility

Adopting an approach that takes into consideration the different styles, knowledge levels and needs of farmers is an important consideration to address in any communications.

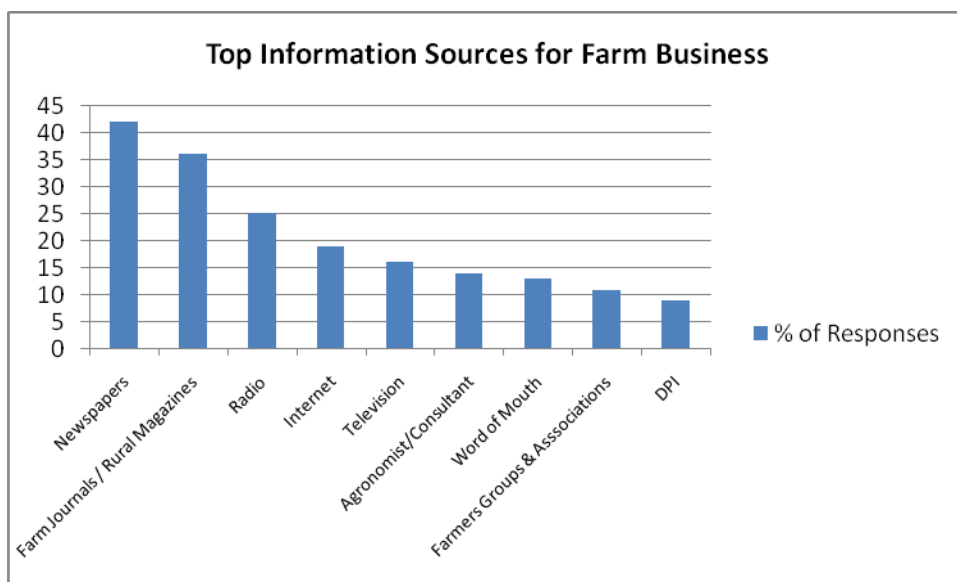
“Farmers do not all learn about sustainable practices in the same manner. Styles of farmer learning vary from reliance on a few key informants to styles that are based on extensive networks of sources and informants. No one delivery system will be appropriate for all farmers” (Kilpatrick & Johns 1999). Dissemination of local knowledge will remain a key feature of any successful training program. The adoption of more complex management practices into existing farming systems often involves a higher level of risk with less certain outcomes. Learning how to master this complexity and accommodate the technical and financial uncertainty will often require locally adapted knowledge and the need for local networks or local professional sources of knowledge support.”

National Land and Water Resources Audit, Commonwealth of Australia, March 2002

5. Communicating to agricultural business

5.1 Reaching farmers

The Rural Media Monitors, November 2004, study found 96 per cent of farmers read some publication on a regular basis with Rural Press publications dominating producers readership habits, while radio was significantly listened to more on weekdays (91 per cent) rather than weekends (68 per cent), similarly many (95 per cent) of producers view some form of television, with ABC TV (89 per cent), commercial TV (87 per cent) and pay TV (13 per cent).

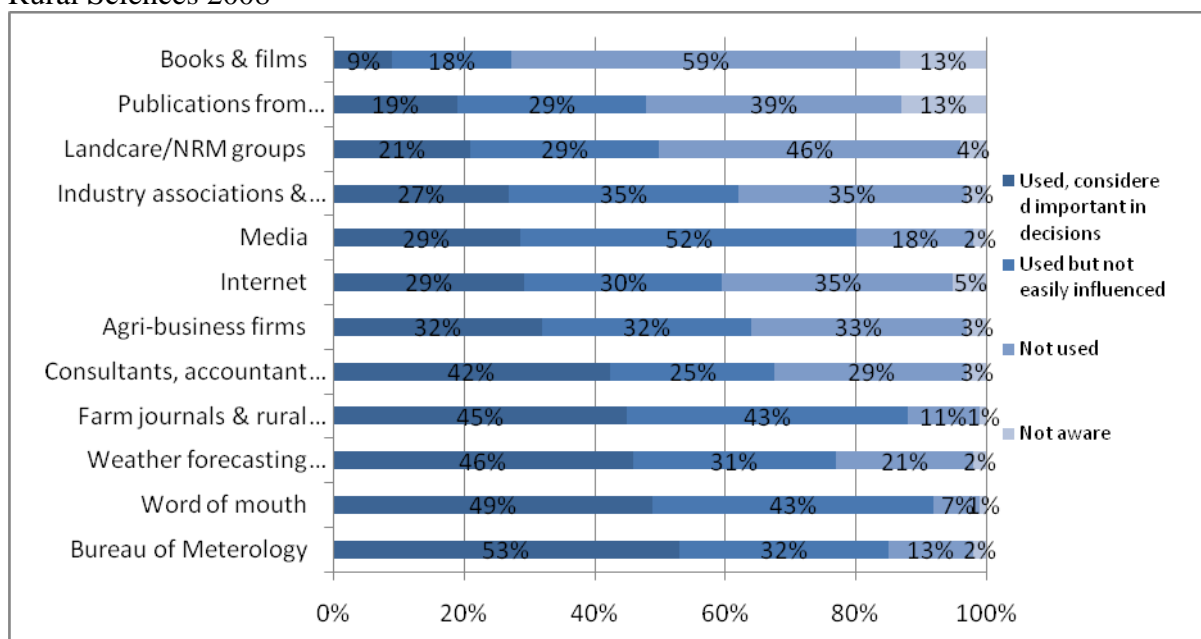


Whereas when farmers seek advice and assistance they will use:

- a successful farmer in the industry or region
- social meetings and gatherings
- consultants, district agronomists, farm management consultants
- accountants and financial planners
- family members
- state government departments and primary industries
- professional for advice on rules and regulations
- printed materials – newspapers, journals, product magazines
- internet
- field days
- learning from past experiences

Source: Farmer Profiling and Adjustment Study, DAFF July 2005

Table 3: Information sources used to make decisions regarding climate Source: Bureau of Rural Sciences 2008



In the Bureau of Rural Sciences survey respondents were asked what information sources they have used to make decisions concerning climate or weather and the extent to which it influenced their decision making, the findings were grouped into two themes, objective sources such as the Bureau of Meteorology and trusted local sources, particularly word of mouth.

6. References:

- Farm Management and Climate 2006-07 ABS 4625.0
- Climate Risk and Industry Adaptation: Quantitative Study, Bureau of Rural Sciences, August 2008
- DAFF Producers Goals, Agscan Report September 2006
- Attitudes towards climate change in rural and regional Australia, The Climate Institute by the Australian Research Group. 2006
- Natural Resource Management on Australia Farms 4620.0 ABS 2006-07
- Fenton M., MacGregor C. & Cary J. 1999, Framework and Review of Capacity and Motivation for Change to Sustainable Management Practices
- Urban peoples' views of farmers, rural land management and conservation. University of Queensland June 2007
- Farmer Profiling and Adjustment Study, DAFF July 2005
- Rural Australia Providing Climate Solutions, CSIRO October 2007
- Market Research Services to Inform Environmental Stewardship Programmes, IPSOS 2007
- Rural Media Monitor, Solutions Marketing and Research, November 2004

Appendix II – Focus groups discussion guide

J1137 – DAFF – Australia's Farming Future Study Discussion Guide – June '09

Objectives:

The purpose of this research is to:

The objectives of the research include:

- providing a deeper understanding and segmentation of target audiences (farmers and urban dwellers)
- identifying the barriers and motivators to adopting desired technologies and the target Government programs, farm priorities and behaviours that improve primary producer resilience to climate change
- providing insights into how beliefs attitudes and behaviours may differ within the same business enterprise (primary and secondary decision makers)
- identifying difference between geographical and/or commodities in climate change (hence the broad range of locations and farmer types)
- identifying the best communication channels, methods and messages to reach the key audiences—farmers, fishers, foresters and their key influencers/advisers and intermediaries
- identifying how the wider population (particularly urban Australians) view these industries

The primary outcome of this series of FGDs is to support the development and refinement of communication strategies, materials, activities and key messages relevant to target audiences.

Introduction – 2 minutes

- introduce instinct and reason as an independent research company
- explain how group works—informal, interested in your views whatever they are – no judgements being made
- no right or wrong answers—honest opinions
- everyone to have a say
- confidentiality assured—research is carried out under the Market and Social Research Guidelines
- client may be watching through closed circuit video (urban groups only), audio recorded
- Turn off mobiles please
- Today we are going to be talking about how farming is changing and how farmers go about making change happen on their farms.

Warm up – 12 minutes (2 minutes each)

- introduce self—what you do on your farm, how long have you been a farmer—and where, family?
- who would you choose to have dinner with if you could have it with anyone—past or present. [PROBE: What topics would you want to talk about? Why do those things matter to you?]

A. Challenges facing farming [TO PROVIDE CONTEXT FOR ANALYSIS] 15 mins

1. I'd like to start by talking about the challenges farmers have faced over the last 10 years or so.
 - a. What are the challenges that come to mind? [MAKE A LIST ON BUTCHERS PAPER]
 - b. Which ones have been the most difficult?
 - c. Which ones are the most important?
 - d. Have these challenges resulted in any changes to the way you farm [MAKE A LIST ON THE BOARD – MAKE SURE CLIMATE CHANGE MAKES THE LIST]
 - e. How would we group these challenges? Which ones are similar ...which are different—[EXPLORE DIFFERENCES THOROUGHLY]
 - f. How would we, as a group, prioritise these different challenges? [NUMBER ON BOARD]

B. History/experience with adaptation to changes/challenges [TO PROVIDE ACTUAL BEHAVIOURAL CONTEXT FOR THE ANALYSIS] – 15 mins

1. In what way have you personally adapted your farming practices? It could be a small or a big thing – just what comes to your mind.
 - a. Describe what you did?
 - b. What actually triggered your decision to change what you did? How does this contribute to your business bottom-line?
 - c. Who else played a part in helping you change?
 - d. Where did you get that help from? [MAKE LIST OF INFLUENCERS AND SOURCES OF INFORMATION]
 - e. How did you feel about that help?
 - f. Would you have liked more help in the change process? Who would you have liked help from? I.e. someone who can give advice on-farm?
 - g. What prevents you from changing?
 - h. What benefits do you get from changing?
2. What sort of help do you need when you change – in general
 - a. Information—where would you want this information to appear?
 - b. Others experiences?

- c. Experts—how would you like to hear from experts?
- d. Government's role? What should government do? Do they have a role in your view?

C. Understanding how farmers feel about climate change - 15 mins

1. I'd like you to write down your individual views about climate change.

[WRITE ANSWERS ON FORM PROVIDED]

- a. What is your fundamental belief about climate change? Does climate change have an impact on you and your farm? Write it down in as much detail as you can.
 - b. What underpins your position? [PROBE FULLY HERE—on what do they believe; who do they believe, where did they get the information that supports their view?]
 - c. What are the thoughts in your mind as you write down your position?
 - d. How do you feel about writing down your position on climate change? Was it easy or hard to define?
 - e. Have you always held this same view? If not...how have your views changed over time?
 - f. What triggered those changes?
 - g. Where do you get most of your information about climate change? [PROBE: specific radio stations, TV programs, newspaper names, association names]
 - h. What sources about climate change do you trust and rely on the most when making decisions?
 - i. What would you say is your most trusted source of information?
 - j. On a scale of 1 to 10 (where 1 is 'not at all trustworthy' and 10 is 'extremely trustworthy'), how would you rate:
 - 1. The government
 - 2. Peak industry organisations
 - 3. Local farming associations
 - k. What concerns do you have about the future regarding climate change? What are the potential impacts?
 - 1. In regards to the concerns you mentioned, on a scale of 1 to 10 (where 1 is 'not concerned at all' and 10 is 'extremely concerned'), how would you rate your level of concern regarding climate change?
2. Discuss fully
- a. What are the trade off's between acting on climate change and doing nothing. Do you think it's possible to do nothing? What do you think will happen if you do nothing?
 - b. What else is relevant?
3. What organisations are involved in talking to farmers about climate change?
[MAKE LIST ON BOARD]

- a. What are these organisations like? [MAKE A MIND MAP AROUND EACH ORGANISATION]
- b. Give me 5-10 words that describe [ORGANISATION]
- c. Are some better or worse at their job? Do these groups have certain agendas with the information they provide?
- d. What do you think is the role of peak industry organisations in regards to climate change? Are they fulfilling this duty? If yes, how? How successful or unsuccessful have they been? Do you feel that they have adequately communicated information about climate change to farmers?
- e. One a scale of 1 to 10, (where 1 is 'not at all supportive' and 10 is 'extremely supportive'), how would you rate the support provided by peak industry organisations.
- f. What do you think is the role of local farmer groups/associations in regards to climate change? Are they fulfilling this duty? If yes, how? How successful or unsuccessful have they been? Do you feel that they have communicated information about climate change adequately to farmers?
- g. One a scale of 1 to 10, (where 1 is 'not at all supportive' and 10 is 'extremely supportive'), how would you rate the support provided by local farmer groups associations.
- h. What do you think is the role of the government is in regards to climate change? Are they fulfilling this duty? If yes, how? How successful or unsuccessful have they been? Do you feel they have adequately communicated information about climate change to farmers?
- i. One a scale of 1 to 10, (where 1 is 'not at all supportive' and 10 is 'extremely supportive'), how would you rate the support provided by government.
- j. What do you think is the role of research organisations (eg: CSIRO) is in regards to climate change? Are they fulfilling this duty? If yes, how? How successful or unsuccessful have they been? Do you feel they have adequately communicated information about climate change to farmers?
- k. One a scale of 1 to 10, (where 1 is 'not at all supportive' and 10 is 'extremely supportive'), how would you rate the support of research organisations.

D. Understanding how farmers respond to information about climate change – 15 mins

1. I'd like to show you/read to you 6 ideas about climate change? For each idea, can you write down your first impression of that information—whatever it is? Then we'll discuss it together.
2. [ASK FOR EACH IDEA]
 - a. What were your initial thoughts about this?
 - b. How do you feel about the idea? Was it of interest or not?
 - c. What would you need to know to make sense of this idea? Does it change anything for you individually?
3. Discuss fully
 - a. What are the trade off's between responding to this idea or doing nothing?
 - b. Do you know if this idea is true or not?
 - c. Who would convince you?
 - d. [PROBE ON GOVERNMENT, in particular the Department Agriculture, Fisheries and Forestry.
 - e. What are they trying to achieve by providing you with this information? What's the motivation?
 - f. Is it realistic?
 - g. Is it individually relevant to you?
 - h. Is it credible?
 - i. How would you like to get this idea presented to you?
 - j. What might be your response to this idea? On your own farm. Is it something you would be willing to implement? What would be the barriers for you in implementing? What would encourage you to take up this idea?

E. Adaptation strategies – 15 mins

1. I now have a few ideas for change or adaptation. I'm interested in what you think of them and what impact they have on you. [SHOW THREE RELEVANT IDEAS]. ASK FOR EACH.
 - a. What's your initial response to that idea [Not whether you like it, but what do you say back to that idea]
 - b. Is it believable? In what way is it not believable?
 - c. Is it new information for you?
 - d. Is it different to what you thought?
 - e. What effect does that have on you rationally?
 - f. What about emotively? What's the feeling you get
 - g. Have these ideas changed the way you think?
 - h. Can you explain to the others here how these ideas affected you?

F. Understanding how farmers want information - 15 mins

1. Finally, I'd like to talk about how information is best provided to you
 - a. Can you think of any information you've received that helped you on-farm or in your farming practices?
 - b. How did it come to you?
 - c. Why did it work well?
 - d. How was it communicated — channels, tone, look and feel
 - e. Was there any supporting materials — follow up etc.

G. Attitude to Government

- a. What do you think the government should be telling you about the risks of climate change?
- b. government programs do you know about in regards to climate change, how did you find out about these? Did you research these your self or was it another family member, friend, professional?
- c. Do you get farming assistance from the government?
- d. What type of farming assistance do you receive?
- e. How do you go about getting this assistance? Do you do this your self (complete the forms, etc), or is it done by another family member, etc.
- f. When looking into government assistance programs or applying for them, have you ever sought or used professional advice, i.e.: a financial advisor accountant, bank manager?
- g. Which government assistance programs do you use and which ones do you value the most?

H. Information about climate change

- a. What would you really like to know about climate change?
- b. How would you like to get the information? Where do you get information now about climate change? What particular channels do you think are most effective? **PROBE FULLY [what are the specific names of the sources]**

Thank you and give incentives.

ATTACHMENT A - Ideas (Section D)

- Climate change poses challenges and opportunities.
- By 2050, due to the impacts of climate change, Australia will be a net importer of wheat
- Agriculture industry groups/organisations are effective at communicating to farmers about climate change.
- Projected climate change impacts pose no greater challenge to the sector than that already faced.
- Research, despite the source, offers the opportunity to take action.
- Every farmer despite their location will face the same level of climate change impacts.
- Climate change won't impact on food production.
- Farmers implement the same management practices as their neighbours.
- Drought is natural event that is not made worse by climate change.

ATTACHMENT B – ADAPTATION EXAMPLES FOR PRIMARY PRODUCER GROUPS (SECTION E)

They can be summarised into 3 general adaptation categories:

- improved varieties and breeds
- changes in farm management
- use software (especially to access climate data) to assist pro-active decision making at farm level

Cropping

- Develop further risk amelioration approaches (e.g. zero tillage and other minimum disturbance techniques, retaining residue, extending fallows, row spacing, planting density, staggering planting times, erosion control infrastructure)
- Research and revise soil fertility management (fertilizer application, type and timing, increase legume phase in rotations) on an ongoing basis
- Alter planting rules to be more opportunistic depending on environmental condition (e.g. soil moisture), climate (e.g. frost risk) and markets
- Tools and extension to enable farmers to access climate data and interpret the data in relation to their crop records and analyse alternative management options (e.g. Yield Prophet)

Extensive livestock production

- Diversification of on-farm production
- Expand current area of grazing potential
- Introduce software for use by producers to interpret grazier records
- Increase sowing of new pastures
- Selection of sown pastures better adapted to higher temperatures and water constraints
- Provision of additional nitrogen through sown legumes
- Provision of urea and phosphates directly to stock via reticulation
- Greater utilisation of strategic spelling
- Introduction of responsive stocking rate strategies based on seasonal climate forecasting

- Development of software to assist pro-active decision making at the on-farm scale

Intensive livestock production

- Increasing landscape robustness and resilience through revegetation
- Summer housing for dairy cattle
- Matching stocking rates with pasture production
- Rotational grazing
- Modification of grazing times
- Night feeding in feedlots
- Timing of reproduction
- Alteration of animal or forage types
- Ensuring adequate storage of water
- Use of supplementary feeds
- Redesign of buildings for passive cooling
- On-site power generation

Appendix III – Survey questionnaire

DAFF - J1137 – Farming Futures – FINAL VERSION – July '09

- N= 1,000 urban dwellers – NOT employed in primary industry – including all towns over 40,000 in population
- N= 750 rural primary industry enterprises main decision makers and 250 secondary decision makers
- Male /female 50/50
- State (Both urban dwellers and rural primary industry main decision makers owner quotas need to have a separate quota by state) (Secondary decision makers not quoted)

	Urban	Rural Main decision makers
Total	1000	750
NSW - Metro	222	
NSW - Rural (towns > 40,000)	100	200
VIC - Metro	150	
VIC - Rural	88	150
QLD - Metro	88	
QLD - Rural	44	150
SA - Metro	88	
SA - Rural	44	100
WA - Metro	88	
WA - Rural	44	100
TAS – Metro/rural	44	
TAS – Rural		50

INTRODUCTION: Good evening. My name is _____ from instinct and reason, the market research company. Today we are calling to ask some questions about your views on farmers and farming. We aren't selling you anything, we want to get your opinions on a range of issues. You are not expected to have a detailed knowledge or understanding of the issues but it is your IMPRESSIONS based on what you do know have seen, read or heard that are important. The research will be carried out in accordance with the Market and Social Research Privacy Principles.

The survey will take about 12-15 minutes depending on which questions are relevant to you.

	S/R	
Yes	01	CONTINUE
No	02	THANK AND CLOSE

Is now a good time?

	S/R	
Yes	01	CONTINUE
No	02	ARRANGE ANOTHER TIME

Screeners

[RECORD FOR ALL]

A1. RECORD GENDER

[DO NOT READ OUT]	S/R	
Male	01	
Female	02	

[ASK ALL]

QA2. Just so we get a good cross section of people. Can you please tell me how old you are?

CHECK QUOTAS

[DO NOT READ OUT]	S/R	
Under 16 years	01	TERMINATE
16-17 years	02	
18-24	03	
25-29	04	
30-34	05	
35-39	06	
40-44	07	
45-49	08	
50-54	09	
55-59	10	
60 -64	11	
65 & over	12	
Refused	97	TERMINATE

[ASK ALL]

QA3. What is the post code of your home?

--	--	--	--

[ASK URBAN DWELLERS ONLY – BASED ON POST CODE – THIS INCLUDES ALL TOWNS AND CITIES WITH POPULATION GREATER THAN 40,000]

QA4. Do you work in any form of primary industry?

[DO NOT READ OUT]	S/R	
No	01	CHECK QUOTA – INTERVIEW URBAN DWELLER AND NON PRIMARY INDUSTRY EMPLOYED
Yes	02	ASK QA5

[ASK RURAL PRIMARY INDUSTRY OWNERS ONLY – BASED ON POST CODE OR CODE 2 QA4]

QA5. Which of the following best describes your occupation?

	[DO NOT READ OUT]	S/R
	I don't work in primary industry	01
	Work extensively in primary industry and am the main decision maker in that enterprise	02
	I work extensively in primary industry but am not the main decision maker in the enterprise	03
	I am the partner of an owner of a primary decision maker in the primary industry business	04
	I am the father/mother of someone running a primary industry business	05

[IF CODE 03, 04 or 05 [i.e. SECONDARY DECISION MAKER ASK]

Can I interview you and the primary decision maker now?

If NO; then ask can I interview yourself now and the primary decision maker at another convenient time?

If Yes; Arrange convenient time to call back and complete the secondary decision maker interview. If No Check Quotas and interview secondary decision maker if appropriate]

Section B – Innovation

[ASK RURAL SAMPLE ONLY INCLUDING SECONDARY DECISION MAKERS]

QB1. Which of the following statements best describes how you go about making new changes on your farm?

[READ OUT]	S/R
I enjoy trying new approaches and am constantly trialling new ideas	01
I'm rarely the first to try something new but keep my eye on others who do. When it works I adopt it too	02
The moment a new approach is proven I adopt it	03
I'm generally fairly sceptical of new ideas. When it's proven itself I'll take it up	04
I dislike change for changes sake. If it isn't broke why change it	05

[ASK ALL]

QB2. We're interested in your views on the drought and its potential causes. To start with I'd like to know whether you agree or disagree or neither with the following statement?

Human activity is the primary cause of climate change. [IF AGREE OR DISAGREE ASK] Is that strongly dis/agree or just dis/agree?

[DO NOT READ OUT]	S/R
Strongly agree	01
Agree	02
Neither	03
Disagree	04
Strongly disagree	05

Section C – Challenges

[ASK RURAL SAMPLE ONLY EXCEPT SECONDARY DECISION MAKERS]

QC1. I'll now read out a list of statements about challenges facing primary producers. As I read each one out can you tell me if you **are personally** concerned, unconcerned or neither?

[ASK IF CONCERNED OR UNCONCERNED] Is that extremely un/concerned or just un/concerned?

[READ OUT/ROTATE STATEMENTS, DO NOT READ OUT NEUTRAL, DK OR NOT SURE]

[ROTATE CODES a–m]	Extremely concerned	Concerned	Neither	unconcerned	Extremely unconcerned	DK/N/S
a) Decreasing rainfall	05	04	03	02	01	09
b) Increasing rainfall	05	04	03	02	01	09
c) Persistent drought	05	04	03	02	01	09
d) Falling water tables	05	04	03	02	01	09
e) Increasing costs of	05	04	03	02	01	09

farming (fertilizer, fuel, etc)						
f) Increasing costs of labour	05	04	03	02	01	09
g) Spouses needing to find work off farm	05	04	03	02	01	09
h) Primary worker on the farm needing to find work off farm	05	04	03	02	01	09
i) Children needing to pursue careers off farm	05	04	03	02	01	09
j) Increasing extreme weather events (Floods, winds, frosts)	05	04	03	02	01	09
k) lack of superannuation to retire	05	04	03	02	01	09
l) Ownership change - planning how to manage the farm as people retire	05	04	03	02	01	09
m) Aging of the main workers	05	04	03	02	01	09

Section D – Attitudes

[ASK RURAL SAMPLES ONLY ALL EXCEPT SECONDARY DECISION MAKERS – NOTE ASK URBAN SAMPLE FOR a), d) g), i) l) m)]

QD1. I'll now read out a list of statements about the impact or potential impact of changes in climate, like extended droughts, on primary industries across Australia. As I read each one out can you tell me if you agree, disagree or neither? [ASK IF AGREE OR DISAGREE] is that strongly dis/agree or just dis/agree? [READ OUT AND ROTATE STATEMENTS, DO NOT READ DK OR NOT SURE]

[ROTATE CODES a–n]	Strongly agree	agree	Neutral	Disagree	Strongly disagree	DK/N/S
a) The primary industries sector has an obligation to help Australia's carbon emissions reductions efforts	05	04	03	02	01	09
b) Primary industry has already adapted significantly to climate change challenges	05	04	03	02	01	09
c) Primary Industry organisations are effective communicators about climate change	05	04	03	02	01	09
d) Projected climate change impacts pose no greater challenge to the farming sector than other challenges the industry faces	05	04	03	02	01	09
e) Developing and implementing the response to climate change must be the responsibility of government, not farmers	05	04	03	02	01	09
f) The agricultural industry cannot afford the costs associated with adapting farming practices to climate change	05	04	03	02	01	09
g) The most effective way to reduce agricultural emissions is through the Carbon Trading	05	04	03	02	01	09
h) Farmers have much bigger challenges to deal with than climate change	05	04	03	02	01	09
i) In the current economic climate, government has more important priorities than helping farmers adapt to climate change	05	04	03	02	01	09
j) Spending money on changing farming practices in primary industry to respond to climate change is a waste of money	05	04	03	02	01	09
k) Primary producers tend to think short term not long term so they won't adapt practices because of climate change	05	04	03	02	01	09
l) Investment in primary industry to assist farmers adapt to climate change will reap	05	04	03	02	01	09

rewards for all Australians, not just farmers						
m) Climate change is just history repeating itself	05	04	03	02	01	09
n) All farmers I know care about the environment	05	04	03	02	01	09

Section E - Awareness of Climate Change Issues

[ASK ALL EXCEPT SECONDARY DECISION MAKERS]

QE1. Now thinking in the context of adapting to changes in climate like extended droughts, tell me for each issue whether you think it is an issue which is important, unimportant or neither? [ASK IF IMPORTANT OR UNIMPORTANT] is that extremely un/important or just un/important? [READ OUT, DO NOT READ OUT DON'T KNOW]

[ROTATE CODES a – l]	Extremely Important	Important	Neither	Unimportant	Extremely unimportant	Don't know N/A
(a) Agriculture is the second largest source of emissions in Australia.	05	04	03	02	01	09
(b) Ensuring Australian primary industries remain profitable	05	04	03	02	01	09
(c) Providing access to education and training to help farmers adapt	05	04	03	02	01	09
(d) Providing grants to assist in investment in new plant and equipment	05	04	03	02	01	09
(e) Providing access to local farmers who have successfully adapted to changes in climate	05	04	03	02	01	09
(f) Maintaining jobs in the Australian agricultural industry at all costs	05	04	03	02	01	09
(g) Increasing spending on primary industry research and development on how primary industry can adapt to climate change	05	04	03	02	01	09
(h) Establishing demonstration sites to show new technology, information and farming strategies.	05	04	03	02	01	09

[ASK ALL INCLUDING SECONDARY DECISION MAKERS]

QE2. Overall, do you strongly approve, approve, neither, disapprove or strongly disapprove of the Australian Government supporting Australian farmers to adapt their practices in response to climate change?

	S/R	
Strongly approve	05	
Approve	04	
Neither approve nor disapprove	03	
Disapprove	02	
Strongly disapprove	01	
Refused	09	

[ASK ALL INCLUDING SECONDARY DECISION MAKERS]

QE3. To what degree do you approve or disapprove or neither of the following forms of assistance? [ASK IF APPROVE OR DISAPPROVE] is that strongly dis/approve or just dis/approve?

[ROTATE CODES a–e]	Strongly approve	Approve	Neutral	Disapprove	Strongly disapprove	DK/N/S
Funding for education & training in adaptation practices	05	04	03	02	01	09
Funding for new research and development of new technology that will assist farmers adapt to climate change	05	04	03	02	01	09
Financial assistance in extreme circumstances to assist farmers who want to leave farming	05	04	03	02	01	09
Funding for rural financial counselling and other farming and business advice	05	04	03	02	01	09

Section F - Knowledge

[ASK ALL]

QF1. I'll now read out a few ideas about farming and climate change which may or may not be true. As I read each one out can you tell me if you agree, disagree, or neither with the statement? [READ OUT AND ROTATE STATEMENTS, DO NOT READ OUT DK OR NOT SURE] [IF AGREE OR DISAGREE ASK] is that strongly dis/agree or just disagree?

[ROTATE CODES a–e]	Strongly agree	Agree	Neither	Disagree	Strongly disagree	DK/N/S
a) The primary industry sector will be covered under some form of carbon trading scheme or measure that WILL impose a carbon cost	05	04	03	02	01	09
b) Every farmer in Australia, regardless of their location, will face the same level of climate change impacts	05	04	03	02	01	09
c) Climate change wont impact on food production	05	04	03	02	01	09
d) Drought is a natural event that is not made worse by climate change	05	04	03	02	01	09
e) Climate change poses more challenges than opportunities for Australian farmers	05	04	03	02	01	09
f) Climate change is about natural events becoming more severe.	05	04	03	02	01	09

Section G – Communications and researching

[ASK RURAL SAMPLE ONLY INCLUDING SECONDARY DECISION MAKERS]

QG1. A range of organisations and agencies are involved in providing assistance to primary industry in responding to changes in climate like extended dry spells. What organisations or agencies have you heard of that provide assistance to farmers? [DO NOT READ OUT]

QG2. Which of the following organisations or agencies, if any, have you heard of? [READ OUT]

	QG1	QG2
	M/R	M/R
	DO NOT READ OUT	READ OUT
Department of Agriculture Forestry and Fisheries (DAFF)	01	01
CSIRO	02	02

Cooperative Research Centres (CRCs)	03	03
State Government Department's of Agriculture	04	04
Bureau of Meteorology (BOM)	05	05
Industry bodies (eg MLA, NFF)	06	06
Local farming experts/consultants	07	07
Plant breeders	08	08
Research stations	09	09
Field Days	10	10
Other _____ Pls specify	11	11
None/don't know	98	98
Refused	97	97

[ASK RURAL SAMPLE ONLY INCLUDING SECONDARY DECISION MAKERS]

QG3. A range of programs and funding assistance is available to primary industry to adapt in response to climate change. What programs have you heard of that provide assistance to farmers? [READ OUT]

QG4. Which of the following programs, if any, would you consider receiving assistance from? [READ OUT]

	QG3	QG4
	M/R	M/R
Australia's Farming Future	01	01
Farm ready	02	02
Enviro-Fund	03	03
Exceptional Circumstances	04	04
Transitional income support	05	05
FarmBis	06	06
Other_____ Pls specify		
None/don't know	98	98

[ASK RURAL SAMPLE ONLY INC SECONDARY DECISION MAKERS]

QG5. Which of the following people usually researches the government assistance programs available? [READ OUT]

QG6. Which of the following people usually applies (i.e. fills out the form and lodges it) for government assistance programs available? [READ OUT]

	QG5	QG6
	M/R	M/R
Myself (the primary decision maker)	01	01
Myself (the secondary decision maker)	02	02
Our financial adviser/accountant	03	03
Other business consultant/s	04	04
My bank manager	05	05
State government experts /DPI	06	06
Other_____ Pls specify	07	07
None/don't know	98	98

[ASK ALL INCLUDING SECONDARY DECISION MAKERS]

QG7. I'm going to read out some ways people have said they would like to be kept informed about Australia's response to the impact of change in climate on farmers and the agricultural industry. Just say 'yes' or 'no' to each [DO NOT READ OUT NOT SURE\DON'T KNOW]

[ROTATE LIST] [READ OUT CODES 01-12]		Yes	No	NS D/K
01	Information from the Prime Minister and relevant Ministers in the news media	01	02	03
02	TV and newspaper stories	01	02	03
	Landline	01	02	03

	Rural press	01	02	03
03	Talk back radio	01	02	03
	'Country hour' on the radio	01	02	03
04	Internet Blogs	01	02	03
05	Social networking site/s	01	02	03
06	Email alerts	01	02	03
07	1300 free phone number you can call to get information	01	02	03
08	Newsletters	01	02	03
09	Text messages	01	02	03
10	A 'live' Webinar. This is an online seminar, which you could watch live through a video feed on your computer. You would have the opportunity to ask questions	01	02	03
11	Interactive CDs designed to provide information and education about the impact of climate change.	01	02	03
12	A podcast. This is an audio or video file that can be downloaded to an i-Pod (or similar device)	01	02	03

Section Z – Demographics

[ASK URBAN DWELLERS ONLY AND SECONDARY DECISION MAKER]

QZ1. Would you please tell me your present occupation and position? Are you...

	[DON'T READ OUT]	S/R
	Manager or administrative	01
	Professional (e.g. teacher, doctor, architect, solicitor etc)	02
	Para-professional (e.g. police, nurse, technician)	03
	Tradesperson (e.g. plumber, carpenter, electrician)	04
	Clerical/secretarial	05
	Sales rep/store salesperson/personal services (e.g. waiter)	06
	Machine operator/driver	07
	Labourer /storeperson /unskilled	08
	Unemployed	09
	Home duties	10
	Student	11
	Retired (self-funded)	12
	Retired (on a pension)	13
	Other (please specify)_____	90
	Refused	98
	Don't know	99

QZ2 [ASK RURAL SAMPLE ONLY DON'T ASK SECONDARY DECISION MAKER]

What type farmer are you? Just say yes or no as I read out the list

	Beef and cattle	1
	Wheat, barley or any form of grain or legume farmer	2
	Sheep farmer	3

Wool farmer	4
Forestry	5
Fishery	6
Horticulture	7
Dairy	8
Poultry and piggeries	9
Viticulture	10
Other (Pls Specify _____)	11

[ASK ALL]

QZ3. What is your highest level of education you have completed?

[READ OUT]	S/R
No formal schooling	01
Primary school	02
Some secondary school	03
Completed secondary school	04
Trade or technical qualification	05
University diploma or degree	06
Refused	99

[ASK ALL DON'T ASK SECONDARY DECISION MAKER]

QZ4. Which of these best describes your household?

[READ OUT]	S/R
Single under 30 years	01
Single 30 years and over	02
Share accommodation	03
Couple without children	04
Family with most children under 16 years	05
Family with most children 16 years and over	06
(PLEASE SPECIFY): _____	97
Other	
Refused	09

[ASK ALL EXCEPT SECONDARY DECISION MAKER]

QZ5. What language other than English is spoken in your household?

[DO NOT READ OUT]	S/R
NONE	90
Italian	01
Spanish	02
Chinese/Mandarin/Cantonese	03
Arabic	04
Portuguese	05
Greek	06
German	07
Vietnamese	08
Philippino (Tagalog)	09
Other (specify)	98
Refused	99

[ASK RURAL SAMPLE ONLY DON'T ASK SECONDARY DECISION MAKER]

QZ6. Do you have a succession plan in place?

[READ OUT]	S/R	
Yes	01	
No	02	
It's not appropriate at the moment	03	

[ASK RURAL SAMPLE ONLY DON'T ASK SECONDARY DECISION MAKER]

QZ7. Do you keep records of rainfall on your property?

[READ OUT]	S/R	
Yes	01	
No	02	
It's not appropriate at the moment	03	

[ASK RURAL SAMPLE ONLY DON'T ASK SECONDARY DECISION MAKER; AND CODE 01 at QZ7]

QZ8. About how long have you kept the rainfall records?

[READ OUT]	S/R	
More than 50 years	01	
10-49 years	02	
0-9 years	03	

[ASK RURAL SAMPLE ONLY DON'T ASK SECONDARY DECISION MAKER]

QZ9. How many generations of your family have been involved in primary industry including yourself?

[READ OUT]	S/R	
Five or more	01	
Four	02	
Three	03	
Two	04	
One	05	
Refused/Don't Know	09	

[ASK RURAL SAMPLE ONLY INC SECONDARY DECISION MAKER]

QZ10. Thinking back over the years since 2000 when much of Australia started experiencing a prolonged drought, how would you rate your farms financial performance compared to other farmers like you in your area?

[READ OUT]	S/R	
Better than the average	01	ASK QZ11
About the average	02	ASK QZ13
Below the average	03	ASK QZ12
Refused/Don't Know	09	ASK QZ 13

QZ11. And to what do you attribute your better than average financial performance?

QZ12. And to what do you attribute your worse than average financial performance?

[ASK RURAL SAMPLE ONLY INC SECONDARY DECISION MAKER]

QZ13. Thinking back over the years since 2000, how would you rate your farms production output compared to other farmers like you in your area?

[READ OUT]	S/R	
Better than the average	01	ASK QZ14
About the average	02	ASK QZ16
Below the average	03	ASK QZ15
Refused/Don't Know	09	ASK QZ 16

QZ14. And to what do you attribute your better than average production output?

QZ15. And to what do you attribute your worse than average production output?

-Thank you very much for your time today.

[ASK RURAL SAMPLE ONLY INCLUDING SECONDARY DECISION MAKER]

QZ16. Would you allow us to keep your name on record so we could re-contact you about the climate change issue for the department at a later date? This will be for a short online survey to understand your views more clearly.

	S/R	
Yes	01	
No	02	

Z14 RECORD TEL NO: _____

Z15 RECORD email address: _____

Thank you very much for your time. As part of our quality control process a supervisor may need to check some of my work. 10% of all our work is checked in this way. Could I please just have your first name and permission to call back in case my supervisor needs to re-contact you to check my work?

_____ RECORD NAME	01
REFUSED TO BE VALIDATED	02

I certify that this is a true, accurate and complete interview, conducted in accordance with the ICC/ESOMAR code of ethics and the IQCA, and I will not disclose to any other person the content of this questionnaire or any other information relating to this project.

INTERVIEWER'S SIGNATURE: _____ DATE _____

INTERVIEWER NO: _____ TEL NO: _____

Appendix IV – Sample profile

		Urban	Primary Decision Maker	Secondary Decision Maker	
State		%			
	n=	1009	756	253	
	NSW - metro	22	0	0	
	NSW - rural	10	26	26	
	VIC - metro	15	0	0	
	VIC - rural	9	20	20	
	QLD - metro	9	0	0	
	QLD - rural	4	20	20	
	SA - metro	9	0	0	
	SA - rural	4	14	13	
	WA - metro	9	0	0	
	WA - rural	4	13	13	
	TAS - metro	4	0	0	
	Gender	Male	49	77	21
		Female	51	23	79

	Urban	Primary Decision Maker	Secondary Decision Maker
	%		
	n= 1009	756	253
Age	16-17	1	0
	18-24	8	1
	25-29	4	1
	30-34	5	2
	35-39	6	5
	40-44	7	8
	45-49	11	12
	50-54	15	16
	55-59	12	18
	60-64	11	14
	65+	19	23

Figures above are unweighted.

Results presented are weighted to age and gender to reflect Australia population

	Urban Dwellers	Primary Decision Maker	Secondary Decision Maker
	%		
	n= 1009	756	253
Education	Primary school	2	4
	Some secondary school	18	38
	Completed secondary school	25	28
	Trade or technical qualification	17	10
	University diploma or degree	36	21

Language	Refused	1	1	0
	English	85	95	97
	Italian	3	1	2
	Chinese/Mandarin/Cantonese	1	0	0
	Greek	1	0	0
	German	1	0	0
	Other	7	2	1
	Refused	1	0	0

		Urban Dwellers	Primary Decision Maker	Secondary Decision Maker
household		%		
	n=	1009	756	253
	Single under 30 years	2	0	0
	Single 30 years and over	7	7	4
	Share accommodation	2	1	2
	Couple without children	12	18	21
	Family with most children under 16 years	18	19	19
	Family with most children 16 years and over	54	51	51
	Other	4	3	3
	Refused	1	1	0

		Urban Dwellers	Primary Decision Maker	Secondary Decision Maker
household	%			
	n=	1009	756	253
	Single under 30 years	2	0	0
	Single 30 years and over	7	7	4
	Share accommodation	2	1	2
	Couple without children	12	18	21
	Family with most children under 16 years	18	19	19
	Family with most children 16 years and over	54	51	51
	Other	4	3	3
	Refused	1	1	0

		Primary Decision Maker	Secondary Decision Maker
type		%	
	n=	756	253
	Beef and cattle	48	44
	Wheat, barley or any form of grain or legume farmer	22	21
	Sheep farmer	28	24
	Wool farmer	10	5
	Forestry	1	0
	Fishery	0	0
	Horticulture	6	4
	Dairy	13	16
	Poultry and piggeries	1	2
	Viticulture	4	2
Other	3	2	

Appendix V – Fishing industry specific insights

The fisheries industry generally sees itself as somewhat different to the agricultural sector and therefore should be communicated to on a separate basis to cover relevant issues and terminology. Differences also exist between the various fisheries sectors by location and between peak industry organisation representations versus individual fishers.

Wild catch fisheries expressed the view that they constantly adapt and that the issue is not about adaptation and climate change assistance but mitigation and lowering their carbon footprint by making boats more fuel efficient.

A major limitation identified was the current regulations around the design and building of boats, which impact on fuel efficiency. It was also believed that these concerns were not effectively coordinated across different agencies in terms of the overall climate change strategy.

'Mitigation is all about our lowering our carbon footprint which is for boats to burn less fuel. If you go down and see the modern fishing boats, they are shaped almost like a brick, with a little pointy bit at the front. That is because every fishing regulation up until the last 5 years had been designed around making people inefficient ...' (fisherman)

There is a strong underlying message of doubt in relation to human induced 'climate change' by wild catch fisheries similar to those expressed in the agricultural sector. Their experiences of changing conditions within the industry and the need to constantly adapt mean fishers question climate change being the result of human activity.

'Each eddy is a different temperature. The fish we are looking for will be in a different temperature. We might be fishing North or South we adapt to where the fish are. We are constantly adapting to the Eastern Australian current. That is what we are adapting to. Climate change, if it is occurring...I am not a sceptic, but the water temperature hasn't changed.' (fisherman)

Other barriers that create scepticism include the following.

- Past experiences around consultation processes for licensing changes (perceived to be bureaucratic without truly taking into account the feedback from the industry).
- Domestic pollution and dredging which fishers argue is having significant impact on the sea environment but is largely ignored. Also, that urban populations are not asked to pay to address these issues whereas fishers feel they are both blamed for the impact on the environment, are held accountable, and have to bear related costs.
- There is also a perception that research money is being chased by scientists in something of a 'feeding frenzy' because climate change is where the money is.
- Their network of trusted friends and sources are providing information and claims that counter or at least question 'climate change due to human activity'.

Communication channels:

The peak industry organisations and aquaculture farming appear to demonstrate greater recognition of the potential impact of climate change and the wider range of adaptation or mitigation issues confronting the industry.

Trusted sources of information for this sector tend to be local industry representatives such as the Tasmanian Seafood Industry Council, its local divisions and specific industry areas such as the Australian Prawn Council Association.

While newsletters and website information used by these organisations will be useful, local meetings, tapping into knowledge leaders and disseminating information through personal informal networks are also equally important, particularly to those less engaged.

Another trusted source are research organisations and scientists that work with the local industry such as the Tasmanian Aquacultural Fisheries Institute in Tasmania rather than scientists in general or more removed research institutions.

Local ABC and Country Hour were frequently commented on as media channels that are both listened to and valued, along with local newspapers i.e. Tasmanian Country.

Appendix VI – Forestry industry specific insights

Due to the historical need for forestry to manage environmental impacts and the involvement of government and corporate organisations in significant parts of the industry, there appears to be a wider and more formal use of research, research dissemination and research application, particularly at the larger end of the sector. Forestry organisations have their own research departments and use CRC's, universities and other industry bodies and specialists.

'It is coming from all directions. We get advice from scientists and specialists and we go to training sessions. People who are acknowledged as knowing what they are talking about...It comes from all areas. Some people aren't even interested in forestry; they are interested in things like beetles.' (forester)

Like other primary industry sectors, foresters feel there is a negative public perception of forestry, which they see as being generated through the media — and a lack of knowledge and recognition of the positive environmental work undertaken by the industry.

While the forestry sector feels they have an open mind about climate change, they are yet to be convinced that it really is change and not part of a cyclical process. Most of their knowledge appears to be based on their work experience over the years, what they have heard through the media (with ABC radio frequently mentioned), and television programs such as Four Corners.

In addition, the library of information and research foresters have to be across in terms of environment, species, and management has significantly increased in the last 10 years. At the same time, they are also experiencing a significant tightening of timeframes and budgets and therefore are increasingly time poor when it comes communications.

Communication channels:

Given the forestry industry is guided strongly by legislation and adherence to its code of practice, the key channel nominated by foresters was to get adaptation and mitigation incorporated into the Forestry Code of Practice — which includes development and adaptation of better and more environmentally friendly techniques, and practices.

Other key communication channels centred on professional advice and training from organisations like Forest Practices, peak industry organisations, some state departments of primary industries, corporate structures and training provided by government and privately owned forestry enterprises. Based on research with the industry, these appear to be the most direct channels. For smaller members of the industry it was suggested that natural resource management and Landcare groups, councils, the internet and the Australian Taxation Office through Business Activity Statements could be effective channels.