



## Partnerships and Understanding Towards Targeted Implementation – PUTTI

Landscapes and Livelihoods: Community requirements for sustainable change

MJ Green, PL Dzidic, DI Tucker, SC Nicol, LE Bates, BJ Bishop, Z Leviston and J Price

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Description: Farming landscape in the Central West Catchment.

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The PUTTI project is a collaborative research initiative between the CSIRO and nominated NSW Catchment Management Authorities. The project is focused on dryland farming and is funded by the Australian Government's National Action Plan for Salinity and Water Quality/ National Heritage Trust Program (NAP/NHT) and CSIRO.

## EXECUTIVE SUMMARY

The current model of Natural Resource Management (NRM) in Australia is one where planning and implementation of on-ground environmental improvement activities have been devolved to 56 regional bodies. While such a regional focus can be empowering for local communities, the current model has yet to demonstrate this and it will take some time before the broader environmental benefits are known. Recently there has been recognition that it is the relationships between the people involved in NRM that will ultimately render the success of such a model. In light of the importance of these relationships, the Partnerships and Understanding Towards Targeted Implementation (PUTTI) project was established to create and facilitate a genuine partnership between catchment managers, scientists and the catchment community to address NRM challenges in central NSW.

The PUTTI project has been divided into a number of phases and stages where qualitative research, community surveys and a partnered change program have taken place in firstly the Central West Catchment and secondly the Lachlan Catchment. In the first two stages of research, issues impacting on rural communities were identified, as were the factors that influence individual land management behaviour (Porter et al., 2007; Bates et al., 2008). The focus of this report is the third stage of research, where community requirements for change have been investigated in both the Central West and Lachlan catchments.

In order to investigate practices or contexts that may impede or facilitate change, it was decided that multiple workshops would be held with a range of landholders at different stages of NRM involvement and learning. In addition, it was decided that workshops should also be held with Catchment Management Authority (CMA) staff and individuals representing other community groups, so issues and sustainable long term NRM goals could be identified for the whole catchment community. Nine workshops were held throughout the catchment areas with a total of 69 participants. A qualitative methodology, Causal Layered Analysis (CLA), was used to guide workshop questioning and to analyse the workshop data. This methodology was chosen as it provides a number of layers in which to examine the data to ensure underlying issues and causes are identified and used to create solutions.

The findings from the workshops and CLA have highlighted the complexity surrounding the issue of change in these agricultural communities. For example:

- Both groups recognised the multifaceted changes that were *already* taking place in their communities such as the drought, population decline, ageing population, labour shortages and declining agricultural commodity prices.
- Disparities between how the groups conceptualised the term sustainability were apparent.
  - CMA staff discussions generally framed sustainability in terms of NRM issues but many participants within this group vastly differed in their conceptualisation of the term.
  - Landholders associated sustainability strongly with the economic and social components and often preferred the term “regenerative”.
- Landholders demonstrated a heightened sense of connectedness to community and towns, whereby NRM issues were perceived as being related to broader social and cultural issues, such as diminishing population numbers, changing rural identity and changing land use practices with the emergence of hobby lots and corporate farming enterprises.

The relationship between the CMA and landholders was also considered during discussion. Landholder experiences ranged from being heavily involved with CMA activities, to no involvement. Those that had previous engagement experiences commended the CMA on its hard work, good advice and provision of opportunities. Issues with CMA programs, such as

short term time frames and the move away from one-on-one extension, were often noted to be related to the overall NRM model operating in Australia and not directly the fault of the CMAs.

A key issue for both landholders and CMA staff related to issues of control, where it was felt that broader social, cultural, economic and governance processes and events place an additional pressure on them. Discussion of issues of land-use change pointed to a relatively consistent story regarding landholder processes of change. The stages described by participants aligned with a Stages of Change model (Prochaska & DiClemente, 1992) and provides some insight into differences within communities regarding levels of enthusiasm to change, and explains why a one-size-fits all approach to NRM is problematic. It is further recognised that the one thing that is in control of both landholders and the CMAs is the ability to build on relationships and to ensure that ideas and aims for sustainable land management are mutually understood. Previous lack of mutual understanding about roles, pressures, issues and goals of all involved parties has not led to change or the establishment of long term relationships. Therefore, by encouraging interaction that fits with current community values and acknowledging the structural properties of the regional NRM model, it is hoped that common goals can be identified and pathways to desired change shaped.

This report is one of a series that provides details of findings from the PUTTI research. In addition to the report on the first and second phases of the project (Porter et al., 2007; Bates et al., 2008), the following research reports are available:

1. Leviston, Z., Price, J., Tucker, D., Bishop, B., Bates, L. E., & Nicol, S., (2009) Partnerships and Understanding Towards Targeted Implementation – PUTTI: Attitudinal modelling and monitoring of factors influencing land management practice in the Central West and Lachlan Catchments. CSIRO: Water for a Healthy Country National Research Flagship.
2. Green, M. J., Dzidic, P.L., Tucker, D.I., Nicol, S.C., Bates, L.E., Bishop, B.J., Leviston, Z. & Price, J., (2009). Partnerships and Understanding Towards Targeted Implementation – PUTTI: Landscapes and Livelihoods: Community requirements for sustainable change. CSIRO: Water for a Healthy Country National Research Flagship.
3. Tucker, D. I. Lusher, D., Green, M. J. Dzidic, P. L., Bates, L. E., Leviston, Z., Robins, G., & Pattison, P. (2009). Partnerships and Understanding Towards Targeted Implementation - PUTTI: Social Networks and Environmentally Sustainable Land Management. CSIRO: Water for a Healthy Country National Research Flagship
4. Bates, L. E., Leviston, Z., Green, M. J., Tucker, D. I. Price, J., Dzidic, P.L. and Nicol, S. C. (2009) Partnerships and Understanding Towards Targeted Implementation – PUTTI: Final report - Conditions underpinning the voluntary adoption of sustainable land management practice. CSIRO: Water for a Healthy Country National Research Flagship.

# 1. INTRODUCTION

Environmental degradation of Australia's landscape continues to be a major problem. The legacy of unsustainable use of natural resources has now been coupled with changes to Australia's broader political, economic and social structures, leading to a deepening of such environmental degradation issues (Lawrence, 2001; Thomsen, 2008). In order to address these environmental issues, a regionally based approach to Natural Resource Management (NRM) has been implemented across Australia, where responsibility has been devolved to 56 regional catchment bodies and their communities. The establishment of these regions represents a major shift from previous arrangements, with attempts made to formalise boundaries and functions to ensure that these management entities become more recognisable, persistent and accountable (Pannell et al., 2007; Robins & Dovers, 2007). There has been much discussion as to whether these regional bodies can fulfil the enormous task that has been given to them, particularly as the issues and decision making processes are becoming increasingly complex (Pannell et al., 2007; Robins & Dovers, 2007; Seymour et al., 2008). The geographical, social and political diversity surrounding these NRM bodies, as outlined by Robins & Dovers (2007), not only creates complexity between NRM bodies, but also within them.

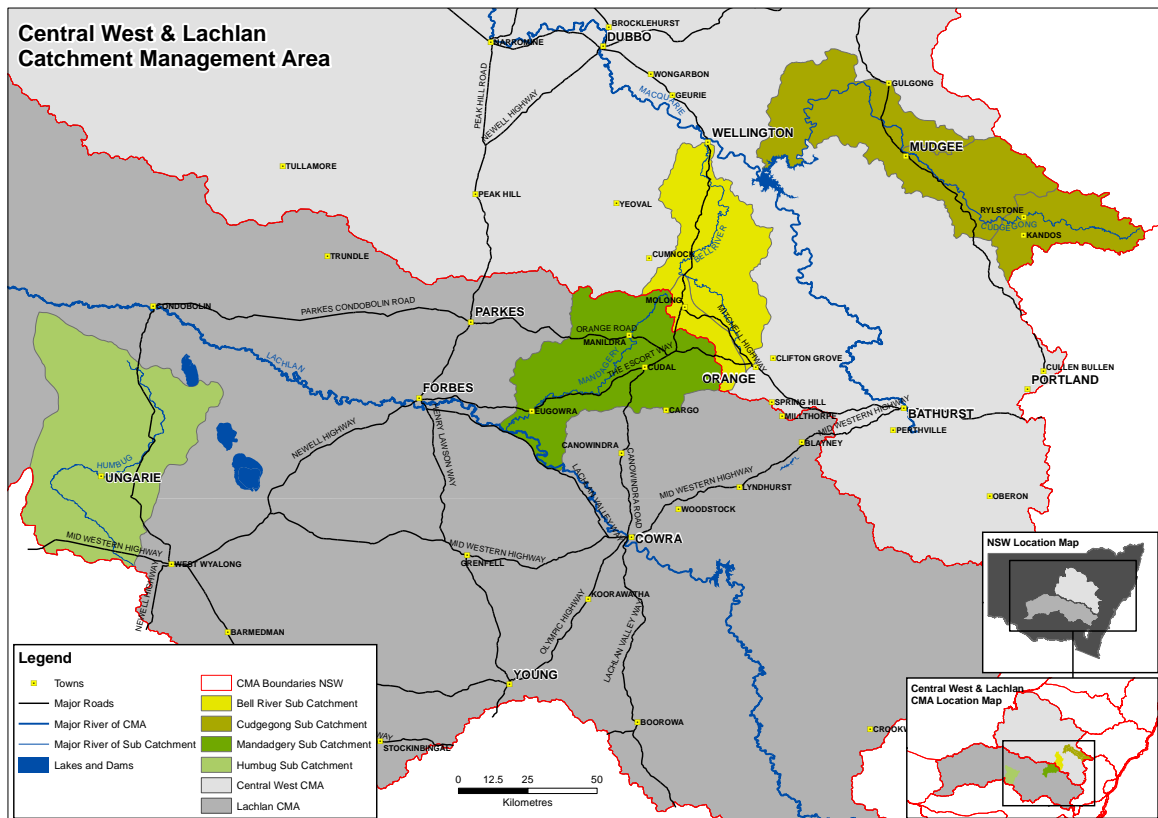
In recognition of the various players that will ultimately render the success of the regional model, the Partnerships and Understanding Towards Targeted Implementation (PUTTI) project was developed to create and facilitate a genuine partnership between catchment managers, scientists and the catchment community, to address natural resource challenges in New South Wales. Specifically, the project aims to:

- identify behavioural drivers of land management decisions made by landholders,
- gain further insight into the values, beliefs and attitudes that underpin farmers' decisions, and
- support the adoption of sustainable land management practice.

The PUTTI project consists of numerous stages of research implemented across two NSW catchment areas: The Central West (focussing on the Bell and Cudgegong sub-catchments) and The Lachlan (focussing on the Mandagery & Humbug sub-catchments). Refer to Figure 1 for the location of these catchments.

These previous stages of research included:

- Scoping interviews (140 across all 4 sub-catchments).
- Numerous shed meetings & focus groups.
- Behavioural surveys conducted in:
  - Central West – Bell & Cudgegong (407 participants, survey completed in February 2007),
  - Synoptic Central West,
  - Lachlan – Mandagery & Humbug (300 participants, survey completed in February 2008), and
  - Central West & Lachlan (422 participants, survey completed in February 2009).
- Social Network Analysis interviews (134 participants, interviews completed in April 2009).



**Figure 1: Study sub-catchments: Bell, Cudgegong, Humbug and Mandagery in the NSW Central West and Lachlan Catchment Management Authority regions.**

This report details the Landscapes and Livelihoods program, which was developed to address the PUTTI Stage 3 Partnered Change objective. The overall aim of this stage is to develop a change program, in partnership with the community, that addresses the key aspects that underpin land management decisions. Previous PUTTI research findings from both the Central West and the Lachlan catchments resulted in a series of recommendations for future research directions, in particular how change could be targeted in the catchments (Bates et al., 2008). The research identified some key considerations for change in communities, which included:

- Supporting existing informal information pathways within and between families and other farmers in the community.
- Making use of the high levels of trust within farming communities, particularly within informal co-farmer learning structures.
- Providing evidence that the proposed change will be beneficial to the farmer e.g. evidence in the form of field days and demonstration sites.
- Developing change strategies that fit into the way that farming communities currently change.
- Building on pre-existing formal and informal communication structures and services within the community.
- Understanding that change takes time.

Previous PUTTI research findings (Bates et al., 2008) indicate that sustainable change needs to support and supplement existing resources and harness these in a way that is acceptable to the local community. In light of these findings, it was proposed that adopting an approach based on social and co-operative learning theory (Ison, Roling & Watson, 2007; Lawrence, 2001) could be a way for farmers and communities to conceptualise catchment scale issues at a local level, to bring about change. Social and co-operative learning models value mutual support and experiential knowledge exchange, whereby peers work together and increase the knowledge base of the community (Ison, Roling & Watson, 2007). This

makes for a social environment that is more responsive to change, where change is community driven and has the additional social benefit of working towards connecting, engaging and empowering communities (Lawrence, 2001).

This particular component of the PUTTI project hoped to build on such recommendations. Particular effort was made to connect with farming communities, CMA staff and researchers in both the Central West and Lachlan Catchments, in a bid to consider change processes, interest in change and capacity to change. As this report considers issues of participation, change and engagement in NRM and what this may look like in the future, the report begins by considering NRM in Australia historically. This brief overview captures Australia's changing NRM paradigms and flags opportunities for considering future best practice for NRM.

## 1.1. Australia's NRM Context

Lawrence, Richards and Cheshire (2004) acknowledge that while land degradation is now recognised as a problem of national significance, the complex nature of the Australian agricultural setting suggests that the appropriate policy measures are still debateable. They identify that there is obviously a place for new policy and programmes to be enacted. So what has the Australian NRM governance arrangements looked like over the years? Lawrence et al. (2004) outline the basic policy options that have been put forward to help Australia overcome land degradation issues, as well as suggesting some options that could be adopted from overseas examples in the future. These have been included and expanded on in Table 1 below.

**Table 1: Brief outline of policies addressing NRM in Australia (adapted from Lawrence et al. 2004)**

Timeframe	Policy option
1970s/1980s	Education and extension Loosely defined farmer land management groups National Conservation Strategy (1984) (Conacher & Conacher, 2000) National Soil Conservation Strategy (1988) (Conacher & Conacher, 2000)
1990s	Decade of Landcare. "Self help" approach. Participatory structure deemed successful by government.
1997	Natural Heritage Trust (NHT) set up by Australian government to restore and conserve Australia's environment and natural resources, with a focus on on-ground implementation. Landcare, Coastcare, Rivercare & Bushcare a part of the NHT program. (Clarke, 2008).
1999	Recommendation from National Natural Resource Management Taskforce for areas to be prioritised and receive concentrated rehabilitation efforts so they can be saved. No recommendations for areas of no priority.
2000s	NHT2 and National Action Plan for salinity and water quality (NAP) see the continuation of the "self help" "community-based" approach through the 56 regional bodies. Farmers are expected to adhere voluntarily rather than by government enforcement which introduces the debate between public participation vs volunteer burnout in the face of diminished resources and capacity (Johnston et al., 2006). Also referred to as a devolvement of responsibility and a movement away from regulatory methods which have often failed in the past to change the behaviour of landholders (Cocklin, Mautner & Dibden, 2007).
2000s	Market based measures have been stated as the cause for sustainability issues as farmers have been forced to produce more for less in the past. But the Industry Commission (1998, p.8) believes that if natural resources are no longer an unlimited right but something that farmers must compete and pay for, then "these changes will encourage conservation and more

	efficient use of these resources – thereby reducing the environmental impacts associated with their use”.
2008	Caring for our Country is announced and aims to improve the environment by focussing on six national priorities, whilst having a business approach to investment to address some of the issues arising from the review of NHT1&2 (Australian Government, 2008; Robins, 2008)
<b>Suggestions for the future (adapted from Lawrence et al. 2004)</b>	
	Financial incentives for farmers willing to change (or penalties for those unwilling) so that they are rewarded for making the transition and the long term benefits are clear. This is opposite to the current structure where short term financial gains are greater than long term sustainable practices.
	Private sector investment sought as government & landholders cannot afford the cost of environmental restoration.
	Re-think the idea of “farmer” in order to escape the pursuit for profit that dominates modern agriculture. Instead landholders are paid to conserve and regenerate their land on the basis that the ecosystem service they provide that has broad public benefit (VCMC/DSE, 2003). This has worked in the UK but trials to date in Australia have been highly competitive and conservation attempts piecemeal.
	Payment of price premium for produce with sound environmental credentials. E.g. Eco-labelling of produce from sustainably managed land as suggested as part of the Land Stewardship project in Victoria (Chaudhri, 2003)

Grass roots participatory approaches are an alternative to regulatory approaches as noted in Table 1 above. Grass roots approaches are community based and facilitated with the emphasis on engaging locals in strategies that are deemed to address commonly articulated environmental goals or outcomes. The formation of such groups is based on notions of local empowerment and justice, with the assumption that ‘local’ is best. The popularity of such an approach came in the 1990s with the Australian Landcare model, which was originally a Victorian Government initiative resulting in approximately 4500 Landcare Groups by 2000 (Carr, 2002). While the perceived benefits and flaws of the approach have been highly debated in the literature (Cary & Webb, 2001; Curtis & Lockwood, 2000; Curtis & DeLacy, 1996; 1995), interest has now turned to considering in more detail the integrity of calling upon local communities in a voluntary capacity to act as land stewards and pro-environmental change agents (Carr, 2002). The key concern relates to justice issues associated with drawing on the voluntary capacity of communities as a ‘free’ mechanism for encouraging stewardship, under the guise of community participation (Carr, 2002).

## **2. METHOD**

### **2.1. Change Program Design**

As a consequence of the recommendations arising from Phase 2 of the PUTTI project conducted in the Lachlan catchment, a framework for targeting behavioural change was proposed (see Bates et al., 2008). The framework was based on a co-operative learning model, where effort was made to encourage the development of 'learning networks', whereby CMA targets were communicated to specific farmers, who then shared their knowledge with their peers. In time it was suggested that this would support the development of a sustainable knowledge exchange system (see Appendix A).

As the research project entered the third year, and as a result of some earlier engagement activities, it became clear that a number of groups either existed, or were in the process of being established as a result of targeted intervention projects to be conducted by the CMAs. These landholder groups covered a spectrum of 'readiness' for the adoption of modified land management practice. It was proposed that the project could utilise this situation to carry out the change program phase of the PUTTI research. In doing so, the research would be aligning with existing 'natural' (e.g. Landcare groups) or proposed groupings (e.g. Central West CMA's Footprints project) of landholders and perhaps add value by providing insight into social processes and farming contexts that affect landholders within different settings across the Central West and Lachlan catchments.

To further investigate practices or contexts that may impede or facilitate change, a series of community workshops with these groups were held within the Central West and Lachlan catchments. Previous research in the PUTTI project demonstrated that many groups and individuals within the catchments are at different stages of learning and adoption of sustainable land management practices. Further, the multiple workshops would be held with a range of landholders at different stages of NRM involvement and learning, to investigate the possibility of social and co-operative learning occurring and to facilitate a program of change. In addition, it was decided that workshops should also be held with CMA staff and individuals representing other community groups, so issues and sustainable long term NRM goals could be identified for the whole catchment community. Section 2.5 provides further detail on the selection of workshop participants.

Overall, the workshops aimed to:

- Examine the contradictory messages that farmers are implicitly presented. For instance, these messages may be inferred, unconscious or not discussed openly.
- Dig underneath the obvious explanations for unsustainable land management and understand causes of issues.
- Identify the deeper social meanings farming communities have about sustainable practices.

The anticipated workshop outcomes included:

- Enhanced researcher and participant understanding of barriers and issues associated with sustainable land management.
- Identification of potential changes/ strategies that are consistent with the worldviews people have about their present and future practices.
- Identification of messages to be communicated that potentially mitigate some of the inconsistencies and contradictions associated with land management.

### **2.2. Data Collection - focus groups**

Focus groups are a methodological approach whereby interview questions are posed to a group as opposed to the individual (Bryman, 2001; Smith, 2008) and are a commonly adopted method of data collection in social science research. It is more naturalistic in its

enquiry than a formal face-to-face interview, in that one of the aims of conducting a focus group is to generate discussion between the participants (Wilkinson, 2008). The facilitation of a focus group is geared towards encouraging discussion and deliberation within the group, as opposed to directing the same question to each member of the focus group for independent comment. More specifically, there is interest in the way in which the group discusses the topic or issues, as opposed to individually (Bryman, 2001). Effective facilitation of a focus group is reliant in part on the skill of the facilitator to be responsive to participant needs, an attentive listener, responsive to both verbal and non-verbal cues and skilled in questioning (Wilkinson, 2008).

Generally, the type of data that can be obtained from a focus group is either, the content of the discussion, or, the group process itself (characterised by group interaction and deliberation) (Millward, 1995). The analysis, interpretation and reporting of focus groups “are best reported in ways which best preserve (at least some of) participants own words – for example, by using illustrative quotations” (Wilkinson, 2008, p.189). It should be noted here that the term “workshops” were used instead of “focus groups” throughout this research phase as this was a term that participants were more familiar with.

### **2.3. Data Interpretative Approach**

One of the aims of the workshops was to provide the community with the opportunity to express their thoughts, experiences and stories regarding rural agricultural life. Attempting to understand farming in context is critical when considering the future of farming practices and rural communities more generally. This component of the PUTTI project has specific interest in considering how farming practices are embedded within a broader community and social structure. We argue the need to consider land management practices more holistically, where farm management and natural resource management are considered in light of a broader social and political context.

Hence, the analytical interest in this part of the project was to consider not only the day-to-day practicalities, challenges and opportunities associated with running a property, but to also consider these in a more contextual manner, which also includes the broader rural community. To explore these types of complex issues and interactions, the most appropriate means was through qualitative analysis. Qualitative research considers “things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 1998, p.3). An analytical framework called Causal Layered Analysis was employed to interpret the qualitative data (Inayatullah, 2004).

### **2.4. Causal Layered Analysis**

In a bid to understand the complexity of rural settings, a qualitative methodology that effectively captures and conveys multiple issues and points of view was adopted, namely, Causal Layered Analysis (CLA) (Inayatullah, 2004). CLA considers the one data set, but considers it according to four different layers or lenses (Dzidic, 2009). Due to this feature of the analysis, it is useful to think of the analytical method as similar to looking through a microscope, with each of the layers serving as a different lens that contribute to the collective interpretation of the data being analysed (Dzidic, 2009).

The actual analytical procedures are akin to any qualitative analysis, where transcript data is analysed by extensive reading and coding (marking and taking notes of what is occurring in the data). Qualitative Content Analysis was conducted, which consists of coding the qualitative data according to determined categories (Wilkinson, 2008), in this instance the content of transcripts were coded according to the most appropriate Causal Layer (see Table 2). The benefit of considering the data through different lens (layers) is so that a ‘deeper’, more holistic interpretation can take place. The significance of having multiple lenses/layers

is that each provide information regarding the article of interest, where no one lens is superior to the other and where the power of the approach comes from the collective story gained from interpretation of the one article according to all of the levels (Dzidic, 2009). Table 2 summarises the focus of each of the layers, providing an example of each:

**Table 2. Summary of causal layers and their focus**

<b>Layer</b>	<b>Focus</b>	<b>Example</b>
<b>Litany</b>	Identifies the surface level issues and is akin to conducting a thematic analysis whereby you look for common or irregular themes.	Farming practices such as stubble retention.
<b>Social Structural</b>	Identifies social processes, interactions, structures or relationships, so to identify the context in which people live.	Changes in the demographic of the community with many younger people seeking employment opportunities in cities or larger towns.
<b>Worldview/Discourse</b>	Identifies the language that people use when talking about a particular issue or their world more generally, and, how what they say and how they say it helps depict their perspective or worldview.	Different perceptions of sustainability as a term. Can be limiting when describing actual practices in context.
<b>Myth/Metaphor</b>	Identifies metaphors, stories, myths and symbols about the topic of analysis.	During hard times, the challenge of farming is like a 'battlefield'.

Once the analysis is completed for each layer, the interpretations are pulled together to form a holistic understanding of the data. The process of coding and pulling together helps in identifying what occurs on the surface level, what people say and how they understand it, and also what underpins what they say and feel. What makes CLA so powerful is that it provides a structure for pulling together multiple analytical methods, where typically analysis may only focus on one of these – a CLA analysis draws on thematic, ecological, discursive and metaphor analyses (Dzidic, 2009).

## **2.5. Selection of Workshop Participants**

Previous stages of research had provided insight into a number of projects that the CMAs were running with various landholders, as well as identification of areas where there had been little interaction. In addition, the PUTTI research team had attended a range of meetings and forums in the catchments over the course of the research, which led to further understanding of local NRM groups, such as active local Landcare groups. Using this knowledge, a range of landholders from particular areas and NRM groups were selected to participate in the workshops to demonstrate a range of views and activities. Further discussions with CMA staff led to clarification about some of the programs they had been running, and it was decided that these groups would also be asked to participate in the workshops, so specific knowledge about these programs could be included.

Previous stages of research had focussed exclusively on the Bell and the Cudgegong sub catchments in the Central West catchment and Humbug and the Mandagery in the Lachlan catchment. In addition, this research component continued to include this focus but also included additional landholders outside these areas (for example the Watershed Landcare group had members from Capertree Valley that would have belonged to the Hawkesbury-Nepean CMA region). The Footprints, Gumble Creek and Walli groups were the focus of targeted resource management programs run by the CMAs.

Once the case study groups had been identified, key contacts for these groups were asked if they and the group would be interested in participating in the workshops. These contacts were mostly CMA staff in charge of a particular project or area, or the manager of a Landcare group. These contacts were a source of ongoing information for workshop organisation, as they provided local knowledge about agricultural schedules, community events and CMA events. In addition, they flagged upcoming workshops with landholders in the respective areas and provided databases of landholder contact details for the PUTTI team. Participants were recruited via telephone and were sent a confirmation letter in the mail or via email. Attempts were made to contact all landholders included in the database, to ensure everyone was provided with the opportunity to participate in a workshop. Those landholders who had agreed to come along were also invited to bring partners or neighbours with them.

Altogether nine workshops were held across the Central West and Lachlan Catchment areas, with a total of 69 participants. The following table details the workshops and number of participants. It should be noted here that the original focus of the research was to involve only landholders and CMA staff but the opportunity arose during the Lachlan Research Forum Workshop to include four scientists working in the catchment area.

**Table 3. Workshops and number of participants**

<b>Workshop Group</b>	<b>Workshop Location</b>	<b>No. of Participants</b>
Footprints project group (CWCMA)	Goolma	11
Little River Landcare (CWCMA)	Wambangalang (between Dubbo & Yeoval)	5
Watershed (CWCMA)	Mudgee	10
Humbug (LCMA)	West Wyalong	7
Gumble Creek, LSAP <sup>1</sup> program (LCMA)	Cudal	4
Walli Area, LSAP program (LCMA)	Cowra	5
Lachlan CMA Staff	Cowra	11
Central West CMA Staff	Wellington	9
Lachlan Research Forum (3 CMA staff & 4 scientists)	Forbes	7
<b>Total</b>		<b>69</b>

While attempts were made during recruitment to ensure a range of different landholders were included (such as women, hobby farmers, mixed enterprise etc), it should be noted that the sample was not representative of the entire catchment areas. There were noticeably less women present at the workshops than men, which may indicate that the timeslot (3-7pm) was not an easy time for women to attend, or that women may not see themselves as 'landholders' and able to contribute. Younger landholders were also absent from the workshops, which indicates another area that future recruitment for such activities may need to focus on. It is also possible that those who did attend may have had more of an interest in sustainable change or that those who could not attend were interested but could not afford to take the time away from their properties due to drought etc. This was evident during the recruitment process as many participants stated that if it rained prior to the workshop then they would not be attending. Therefore when examining the results it must be noted that these comments and thoughts are a reflection of this particular context and time.

<sup>1</sup> The Lachlan Salinity Action Plan (LSAP) is a project run by the Lachlan CMA and the Department of Environment and Climate Change aimed at improving knowledge, decision making and mitigation of salinity in the areas identified as the largest contributors.

## 2.6. Workshop Procedure

The CLA method of enquiry was used during the workshops, with questions adapted from De Simone (2004) and Inayatullah (2004), and modified to incorporate previous research results (Bates et al., 2008; Porter et al., 2007). Usually four project team members were present to ensure effective workshop set up, facilitation and data recording. All workshops began with introductions between staff and participants, a brief PUTTI project overview and a statement of confidentiality. The workshop facilitator invited participants to firstly share with the group some background on themselves and their farming enterprise(s)/practices. This was followed by discussion about certain barriers and drivers of change. Examples of some of the workshop questions at each lens/layer are included in Table 4 below. Questions were altered to suit participants (farmers or non-farmers) and according to the flow of the workshop.

**Table 4. Examples of CLA workshop questions**

Litany	<ul style="list-style-type: none"> <li>- What are your first thoughts about agriculture in the region?</li> <li>- What does the term “sustainable agriculture” mean?</li> <li>- Has there been a shift towards sustainable practices. Why? Why not - what are some of the issues preventing change taking place?</li> </ul>
Social Structural	<ul style="list-style-type: none"> <li>- What are the sustainable practices that should be adopted?</li> <li>- How did the factors limiting adoption/ change come about?</li> <li>- Why does this continue to be an issue?</li> <li>- Could anything have happened to change or avoid these causes?</li> <li>- What are some of the factors that affect the health and wellbeing of the local community?</li> </ul>
Worldview/Discourse	<ul style="list-style-type: none"> <li>- What does farming mean to farmers?</li> <li>- What makes a good/ not so good farmer?</li> <li>- What do those locally think about farming practices?</li> <li>- What do people in Sydney or other cities say?</li> <li>- Who has control to change things? Who is helpless?</li> </ul>
Myth/ Metaphor/ Symbols	<ul style="list-style-type: none"> <li>- What stories to farmers tell about themselves and their communities?</li> <li>- Who are the local heroes and why?</li> <li>- Is there a book/ song/ movie that captures what we have been talking about?</li> <li>- How do you see the future of farming locally and ideally what would you like it to be?</li> </ul>

The complexity of group based research has been highlighted by Kerr & Tindale (2004), such as the failure to identify and utilise contributions from capable group members. Efforts were made to address this in the workshops. Participants were given a map of their catchment and surrounding areas on which they could highlight any apparent issues or strengths in the community. This option was provided to ensure that *all* views could be captured and to account for any large group size effect that could be occurring (Kerr & Tindale, 2004). Participants were also given a short questionnaire to complete at the conclusion of the workshop, as part of the Monitoring and Evaluation PUTTI component (see Leviston et al., 2009 for results). The workshops were designed to run for approximately 4 hours, including breaks, and this was usually adhered to.

## 2.7. Data Validation Measures

Data validation is critical to any research, and several measures were employed to ensure the quality of the data and its interpretation. Two key methods were adopted, namely verification through participant feedback and data triangulation.

### **2.7.1. Verification through feedback**

Causal Layered Analyses of each of the workshops were conducted and Workshop Feedback Summaries were compiled for each workshop, which captured key messages from the analysis. The feedback summaries were sent to participants, who were given the opportunity to respond, via mail, telephone or email. This process provided an opportunity for a formal review by participants of the PUTTI Project teams' interpretation of the proceedings of the workshop. Such a verification processes is common within social science research. As a result of the feedback process, no major changes were made to the workshop analysis and summaries (see Appendix B for workshop summaries).

### **2.7.2. Data triangulation**

Data triangulation is a technique adopted to ensure the credibility of the analysis, with the intention to test whether there is consistency in findings. Specifically, triangulation draws on the use of multiple and different sources of either data, or, approaches to data collection, and the use of multiple investigators who interpret the data (Lincoln & Guba, 1985). Interpretive procedures were developed, where two investigators analysed the workshop transcripts together – one investigator who was present at the workshop and another blind. The interpretations were then reviewed by a third interpreter who was present at the workshop. Data was also triangulated through discussions with other PUTTI Project teams regarding their research findings, in a bid to identify consistencies or differences in interpretation of issues across PUTTI sub-projects. In such instances, particular effort was made to identify instances where there may have been 'negative cases' or instances where there are inconsistencies in messages, themes or interpretations (Lincoln & Guba, 1985).

## **2.8. Ethical Considerations**

Effort was made to consider any ethical issues associated with conducting the workshops. Of particular interest were anonymity and confidentiality issues associated with the reporting of the workshops and the use of verification measures.

At the commencement of each workshop, anonymity and confidentiality issues were discussed with the participants. The intention of the workshop was discussed, as were the intended use of information and interpretation (e.g. for project reporting, conference proceedings, journal publications). Participants were advised that notes would be taken by a CSIRO research team member and permission was asked for the workshop to be recorded (with the use of a digital voice recorder). If at times participants felt that the topic of discussion was of a personal nature, they were invited to request that the current conversation was 'off the record' – this meant that that the excerpt of discussion would be excluded from analysis and reporting. The use of anonymous quotations in reporting was also discussed with participants with effort made to ensure that quotations used were void of any identifying information. Participants were also informed that they were free to withdraw from the research at anytime, including after the workshop had been conducted.

### **3. ISSUES ARISING FROM WORKSHOPS**

A wealth of information resulted from the nine workshops. Initially the information was summarised into individual feedback documents that were part of the feedback process (as discussed in Section 2.7.1). These documents can be located in Appendix B if more information on specific groups is required. For analytical and practical purposes, in this report the data has been summarised so the main issues at each CLA layer/lens can be easily interpreted collectively for both landholders and CMA staff. In addition the views of the four scientists that were expressed during the Lachlan Research Forum workshop were grouped with the CMA staff for the purpose of analysis. These results are detailed in Table 5 below and the key findings will be further discussed in the following sections.

The results displayed in Table 5 outline the collective complexity of the issues discussed that are perceived to be impacting on the ability for individuals and communities to change. The utility of the table is to 'at a glance' see similarities and differences between how landholders and CMA staff conceptualise NRM issues. Differences need not be a problematic issue; rather it tends to flag a difference in worldviews and points to a potential need to consider how to overcome/address such differences. This may be as simple as groups coming together and discussing NRM issues as a means to understand each others' point of view. For example, at the litany level, similarities between landholders and CMA staff include the drought, landscape variability and day to day farming practices. Despite this, the groups have a different conceptualisation of sustainability and how it is defined in their individual day to day operations. The purpose of the table need not be to follow a single issue across the layers, e.g. sustainability from litany to myth/metaphor. Instead, the layers flag the complexity of certain issues and recognise inconsistencies in how people conceptualise issues. This is the value of the CLA.

**Table 5. Summary of issues emerging under different CLA layers from workshops**

Layer	Farmers and Land Managers	CMA Staff
<b>Litany</b>	<ul style="list-style-type: none"> <li>▪ Pressures associated with unfavourable weather and drought conditions</li> <li>▪ Recognition and acceptance that there are good and not so good farming years</li> <li>▪ Food security issues and the perceived need for farmers as food producers. Additionally the perception that the future of their region is focussed on agricultural production</li> <li>▪ Pressures associated with unfavourable economic markets, and increased input costs</li> <li>▪ Farm as superannuation and pressures associated with succession</li> <li>▪ Land values are higher in areas that are closer to city or major service town centre</li> <li>▪ Land values are generally increasing</li> <li>▪ Uncertainty often coupled with a lack of confidence. Felt in the past that things were known and now there are too many unknowns. Helplessness commonly expressed.</li> <li>▪ Information overload and inconsistent messages result in confusion</li> <li>▪ Farming practices and systems are becoming more complex</li> <li>▪ Farmers and land managers as responsive to challenges such as unfavourable weather conditions as opposed to reactive to them</li> <li>▪ Learning how to 'tweak' and individualise farming practices to achieve better farming outcomes</li> <li>▪ Reflection on day to day farming practices such as; changes to chemical use, disease control measures, best practice, expertise of farming, high levels of understanding about farming practices, lambs as mainstay as other input costs are too high, weed management, stubble retention, move away from burning practices, different techniques for sowing, mulesing, pests management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Awareness of the impact of drought, with full impacts yet to manifest</li> <li>▪ Range of definitions for sustainability</li> <li>▪ Issues associated with developing biodiversity. Acknowledged lack of scientific knowledge and the perception that farmers want proof regarding the success of particular changes to their current practices</li> <li>▪ Soil health seen as a pressing issue</li> <li>▪ Monitoring and evaluation as valued</li> <li>▪ Day to day farming full of variation in landscape and practices etc.</li> <li>▪ Farmer knowledge of how to change is limited in some areas. Different rates of adoption depending on geographic/hydro-climatic constraints.</li> <li>▪ Day to day farming practices seen to be changing slowly and not uniformly</li> <li>▪ Recognising the need for mental wellbeing within the community</li> <li>▪ Recognition of the confidence and capacity of farmers</li> <li>▪ Farming is high risk</li> <li>▪ Those that are changing may not be doing so for the right reasons, in this case a pro-environmental or conservation ethic is seen as the "right" driver for change</li> <li>▪ Some farmers are 'half adopting' which is perceived to undermine the benefits of the practice and sends out incorrect messages regarding the practice when failure occurs</li> <li>▪ Many farmers are thought to be maintaining status quo and unable to recognise environmentally sensitive areas</li> <li>▪ Heterogeneity in science seen as not necessarily a bad thing</li> </ul>
<b>Social Structural</b>	<ul style="list-style-type: none"> <li>▪ Change as occurring irrespective of drought and unfavourable weather conditions</li> <li>▪ Changes to rural community e.g. pub attendance decreasing with drink driving laws, declining numbers of sporting teams, fewer children attending local school and smaller school bus, limited employment opportunities</li> <li>▪ Demographic is changing and generally ageing. Younger people are encouraged to leave the district to seek opportunities outside rural towns. It is also recognised that rural communities are favourable places to live and raise children. Farmers having to work for longer, and there is limited succession planning</li> <li>▪ Importance of kinship and community</li> <li>▪ Being born in the town makes you a local (noted for Mudgee, Gulgong)</li> <li>▪ Perceived disparities between rural and urban areas where the term 'sandstone curtain' was used to describe the physical divide between city and country</li> <li>▪ Increasing presence of city people in rural towns (noted for Little River Landcare area)</li> <li>▪ Recognition that people are returning to live in the rural service centres (e.g Orange)</li> <li>▪ Increasing litigation issues resulting in pressure on voluntary organisations and social events</li> <li>▪ Impacts associated with rural media where mainly negative stories depict farmers and rural life. Misdirected media impacts on identity. Often this negative media is the only connection with city folk</li> <li>▪ Governance issues where the CMA faults are recognised as resulting from a larger institutional problem</li> <li>▪ Governance processes – engagement with CMA – e.g. planning, individualism, funding for definitive on ground achievements despite uncertainties of farming</li> <li>▪ Lack of farmer control over commodity prices. Would like to see return of single wheat desk</li> <li>▪ Farming scale is changing – emergence of hobby scales (in Little River Landcare area) vs enterprise change (in Gumble)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Environmental conditions can negatively impact capacity to change as well as encourage change</li> <li>▪ Drought blamed for labour shortages</li> <li>▪ Capital investment instead of investment in labour</li> <li>▪ Demographic changes in rural communities e.g. limited rural employment opportunities, youth moving out of the area, resource boom taking available farm labour, reduced participation in sporting groups, regional town structures are changing</li> <li>▪ Media stories about farmers are mostly negative where there has been a shift from sympathy for farmers to seeing them as environmental vandals. Media seen to sensationalise and focus on the problems with farming</li> <li>▪ Aging population. Loss of youth results in a knowledge gap and generational change is occurring too late. With this comes changing societal expectations</li> <li>▪ Community wellbeing fundamental to sustainability (vibrant communities, healthy landscapes)</li> <li>▪ Recognised difference between corporate and family farm</li> <li>▪ Farmers not able to compete with multinationals and rising commodity prices</li> <li>▪ Issues associated with succession planning, "There is no succession planning for many. It's what they call superannuation farming where you run the legs of the farm for capital gains and then you buy another property for the short term and run it into the ground also. It doesn't matter to them because they have no one to hand it over to, no succession."</li> <li>▪ Financial pressures seen to inhibit long-term planning</li> <li>▪ Commodity prices need to be stabilised</li> <li>▪ Increased involvement of women in farming and in working off-farm</li> <li>▪ Need money to make money</li> <li>▪ Believe that it is important to work with people who have a long-term view</li> </ul>

**Table 5. (CONT) Summary of issues emerging under different CLA layers from workshops**

<p><b>Social Structural (cont)</b></p>	<ul style="list-style-type: none"> <li>▪ Emergence of niche industries</li> <li>▪ Increasing presence of corporate farming</li> <li>▪ Corporate farming and agribusinesses as negatively impacting more traditional family farming operations</li> <li>▪ Learning through talking and observing other farmers e.g. looking over the fence at the neighbouring property(s)</li> <li>▪ Change processes require an individual to 'start the ball rolling'. For instance, observing a neighbours trial of a new practice and observing their successes or failures as a means of reducing individual risks</li> <li>▪ That changes to practices requires additional finances e.g. "its hard to be green when you are in the red"</li> <li>▪ The trend for capital investment over investment in labour</li> <li>▪ Importance of off farm income</li> <li>▪ Pressures from consumer demands and expectation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Perception that government assistance ( e.g. subsidies) allows for continuation of perceived bad farming practices</li> <li>▪ Federal funding &amp; government timelines can be problematic for farmers where lack of ongoing support and short-termism leads to lack of trust</li> <li>▪ Changes in land management practices perceived to have come as a result of government CMA/NRM intervention</li> <li>▪ DPI &amp; agronomists are seen to push a particular agenda</li> <li>▪ Sustainable practices should be adopted</li> <li>▪ On ground support needed for innovators and for those needing to adjust to rapid changes</li> <li>▪ A perception of survival versus innovation within the farming community</li> <li>▪ Successes measured as intervention including extension and showcasing successful innovators</li> <li>▪ Issue of time to demonstrate impacts</li> <li>▪ Agricultural technology is evolving quicker than practical knowledge can adjust to</li> <li>▪ Trialling seen as necessary for changes as "looking over the fence" has led to misunderstandings</li> <li>▪ Farmer/ farming impediments to change include: isolation, conservative social attitudes, pressure to maintain family heritage, lack of united farmer 'voice'</li> <li>▪ Carbon sequestration as a way for farming in the future</li> </ul>
<p><b>Worldview/Discourse</b></p>	<ul style="list-style-type: none"> <li>▪ Thought regarding future agricultural production for food versus fuel</li> <li>▪ Disparate values between city and country. This is seen to impact on farming practices and expectations regarding production. For instance farmers have a perception that city folk perceive country areas as being in deficit e.g. population decline, lack of employment opportunities, schools closing, sporting teams folding, poor financial returns for farmers. While farmers also recognise that many of these things are true, they can also see the strengths but feel that city folk do not.</li> <li>▪ Distancing from mining – inconsistent with wanting rural dollars kept rural</li> <li>▪ Varying views regarding climate change e.g. climate change or cycles in climate</li> <li>▪ Pro - environmental attitudes e.g "We all want to leave our property in better condition. It's a work in progress. The problem is that you have to make a living along the way"</li> <li>▪ Complex understanding of sustainability. Initially more general definitions of sustainability reflect issues of intergenerational equity, and aspiring to leave the country in better condition than when first acquired. The actual meaning of sustainability is critiqued by the farmers where the term sustainability is perceived to be limiting where, to sustain is to keep constant. Farmers expressed the desire to work beyond that.</li> <li>▪ Cyclical thinking in that the land will regenerate. This term is framed as positive and providing opportunity rather than presenting decline &amp; deficit.</li> <li>▪ The value of on-farm experiential learning</li> <li>▪ Value in making informed decisions through experiential learning e.g. trials were praised where farmers witness the benefits as opposed to reading results</li> <li>▪ The love of the land, where farming identity is associated with having a connection to the agricultural landscape. Dichotomies in loving farming but also having to grapple with the challenges</li> <li>▪ Changes from traditional to new and emerging farming practices. Also seen in changes in the family farming structure and the emergence of 'green' farmers,</li> <li>▪ Perception that with age comes agricultural experience</li> </ul>	<p>Participants perceptions of farming/ farmers</p> <ul style="list-style-type: none"> <li>▪ Recognition that farmers do not intend to be environmental vandals</li> <li>▪ Media portrays farmers as environmental vandals/terrorists not as business people</li> <li>▪ Some staff/scientists believe that land managers may perceive sustainability as maintaining status quo.</li> <li>▪ Recognition of change in government roles e.g. DPI</li> <li>▪ The role of NGOs are seen to be increasing in importance and prevalence</li> <li>▪ NRM system has added a new tier of governance which adds to the complexity</li> <li>▪ Fear of replicating the US and UK models of government support which are based on subsidies and government direction for agriculture</li> <li>▪ The farmers with degraded resources avoid getting help as they don't want to be labelled as money grabbers</li> <li>▪ Farmers with degraded resources are the ones that require the services</li> <li>▪ Social support is important</li> <li>▪ Rural Australia as a great place to bring up children</li> <li>▪ City rural divide, where cities are seen as undervaluing the contribution of agricultural communities. Families in the city no longer have rural relatives which was seen to contribute to a perceived weakened connection between city and country</li> <li>▪ Farming is a lifestyle and the love of it is recognised. Mixture of physical and intellectual work and the ability to work independently were noted as valued characteristics</li> <li>▪ Change from farming as a lifestyle choice to a business model</li> <li>▪ Farming community as being a Jack of all trades</li> <li>▪ Perception that farmers are conservative</li> <li>▪ Perception that successful farmers are optimistic</li> <li>▪ Perception that farmers are powerless and that they see many aspects of farming as beyond their control "The cockies are the price takers not the price setters. They compete with each other to drive the price down"</li> <li>▪ Farmers treated unfairly by corporations but simultaneously support them</li> <li>▪ That Exceptional Circumstances are a perspective on the condition of the land</li> <li>▪ Production oriented farming is positioned against environmental oriented farming e.g. "you don't hear people saying 'man he can grow a tree, or grow groundcover" rather praised is directed towards yields. Sustainable practices seen as "feel good" rather than of economic, environmental or social benefit</li> </ul>

**Table 5. (CONT) Summary of issues emerging under different CLA layers from workshops**

<p><b>Worldview/Discourse (cont)</b></p>		<ul style="list-style-type: none"> <li>▪ Belief that “we have to stop dominating nature, we have to be a part of it”</li> <li>▪ Perception that tall poppy syndrome can be detrimental to the successful uptake of change</li> <li>▪ Perception that land stewardship may be seen by farmers as being a “greenie”</li> <li>▪ Leaders need to be someone that the community looks up to and can relate to.</li> </ul>
<p><b>Myth/ Metaphor</b></p>	<ul style="list-style-type: none"> <li>▪ A bigger property is a better property e.g. “get big or get out”</li> <li>▪ Sandstone curtain – geographic boundary acts as a metaphor to explain the social differences between urban and rural value systems</li> <li>▪ That all food consumed in Australia is produced in Australia as opposed to overseas imports. This perception challenges farmers thoughts about the need for food production in Australia</li> <li>▪ Farmers identified themselves as a “Jack of all trades – master of none”. This relates to issues associated with confidence and the perception that the broader social system does not value their (farmers) practice, and therefore they also question their ability.</li> <li>▪ Farming as a gamble e.g. “I bet on getting...”</li> <li>▪ Farming as a game e.g. “equal playing field”</li> <li>▪ Farming as being multifaceted, requiring skill to manage the complexity e.g. “it’s a balancing act”</li> <li>▪ Farming is war like e.g. “we have to be mean and lean to survive out here, it is all about survivors”</li> <li>▪ Farming is like a game of chess, where farmers are compared to pawns, the chess piece of least value. The game also symbolises that they are being controlled e.g. “a lot of times we are pawns”</li> <li>▪ That the farming system and community is fragmenting e.g. “Falling apart”</li> <li>▪ External pressures associated with uncontrollable and unfavourable markets were seen to be a threat to the farming community and compared to war and game playing with an emphasis on defeat e.g. “cost will beat us”</li> <li>▪ That the pressures associated with farming are going to result in the demise of the agricultural industry e.g. “everything is going down hill”, “toast” and “dead and buried”</li> <li>▪ That some farming practices hurt or damage the wellbeing of the physical landscape e.g. “flog the country”</li> <li>▪ Australians identify themselves with the rural life and as the bronzed Aussie battler but really most Australians are urban dwellers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Romanticism and simplification of farming where the lifestyle itself is seen as an intrinsic reward e.g. “Bloody proud of living the simple life” (...is it so simple?)</li> <li>▪ “true blue”</li> <li>▪ Farmers referred to as conservative ...but they are actually always changing.</li> <li>▪ Inability for farmers to express themselves</li> <li>▪ That farming is complex “it’s a bit of juggling act” and “there is no recipe”</li> <li>▪ That some types of farming can result in varied levels of success or reward e.g. “mixed farming is two steps forward one step back”</li> <li>▪ Recognition that conservation farming is complex given the financial difficulty experienced by some farmers e.g. “its hard to be green when you are in the red”</li> </ul>

## **4. DISCUSSION**

The following section further develops the CLA workshop issues documented in Table 5. Evident from the CLA was the awareness that both the joys and challenges of farming are related to broader social and community issues. Recognising this highlights the value in identifying and appreciating contextual factors when considering issues such as NRM and change. The content of the CLA workshops cover a significant range of social, economic and environmental issues, the following is a discussion of some of the critical messages that emerged from the analysis (for additional information refer to Appendix B). These messages serve to highlight some of the social trends that are occurring in the catchments and flag the benefit in developing an understanding of the culture of a community in order to fully understand their farming practices. The discussion first considers significant themes to farmers and landholders, followed by CMA staff and finally focuses on the shared barriers and solutions for the future. Throughout the discussion, reference is made to the where particular issues or discussion points emerged within the Causal Layers (as tabulated in Table 5).

### **4.1. Landholders**

#### **4.1.1. Rural change**

Consistently across workshops, change featured as a prominent discussion point and was raised across several causal layers, ranging from practical farming changes at the Litany level, to social, community changes at the Social Structural level and changes in traditional farming practices and views at the Worldview level. Much of the participants' reflection considered changes to traditional family, farming and community values, which referenced a changing rural identity. Rural identity was referred to in terms of how landholders and more generally the agricultural community identify and define themselves. It also referred to how the landholders perceived that others outside their community identify them. The most notable shift in both practices and farming identity has been regarding a move from more traditional farming practices and country activities to a lifestyle that has adopted traits of city life. Akin to this there was distinction made between city and country values, where country values were seen as critical to regional and country identity. Where country values were seen to be changing, this was perceived as threatening to rural identity, and typically arose as a Worldview issue. Such discrepancies between traditional country and emergent city values systems in rural areas appear in part to account for social tensions, as communities renegotiate their identity in a context of widespread change. For instance, during workshop discussions there was notable unease associated with the trend towards hobby scale encroaching on traditional larger scale farming enterprises. The discussion regarding change highlights a connection between community values, rural identity and the impact that social change has had in their rural communities.

Traditionally, farming in the Lachlan and Central West Catchments has been based around the family unit, with the common expectation that members of the family, usually sons, would succeed the family farming enterprise. Typically, this issue emerged at the Social Structural level of analysis. A value set based on collective wellbeing, kinship and trust was also discussed as being characteristic of rural communities, both historically and currently. For instance, specific reference to the collective wellbeing was expressed in relation to an awareness of individual on-farm activities having the propensity to impact on the broader catchment, for example: "you realise that it's not just your property but it's a bigger picture and other people are affected" and "it gives you a little more responsibility when you find out that it is not just your problem; its feeding on down the river and affecting other people" further, "we have to work in unison to adapt". Similarly, issues regarding the importance of community and the collective were apparent at the Social Structural Level. Across time, this community value system has been seen to be a prized draw card to country life. The rural

lifestyle, particularly as a farmer was highly valued: “it’s a lifestyle number one, its not just a business, you live with your farm everyday, you don’t get up in the morning and say I’m a farmer I’d better go to work”. Issues regarding the values associated with country life presented themselves as an important element of the community level Worldview.

There was reflection that, over time, the family farm structure and values associated with rural towns has changed, presenting as an issue at the Social Structural level. Much of the change was seen to have come as a result of broader social issues and market forces that have shaped peoples’ eagerness or capacity to farm. This has lead to broad demographic change in many of the communities surveyed, particularly smaller communities adjacent to service centres. For such communities, there has been a noticeable aging of the population, with an outward trend of younger, potential farmers or land managers leaving the area. The motivation of the migration towards cities or larger service centres has come as a result of seeking education, employment or social opportunities. Similarly, with a change seen in family farming structure, so too have there been changes in farming practices.

For some, this is seen as a particularly complex issue to negotiate. Many participants reflected on active encouragement of youth to seek opportunities elsewhere, particularly given the hard climatic conditions and markets unfavourable for farming. For example: “I have three children and the youngest is interested and I wonder why they would want to do the same thing as us. You can grow for 12 months and think that you will get the dollars but at the last minute it can all change”. Despite this, there is the hope that favourable conditions will return and so too the youth: “you want young people to have options, you can’t really have the young people on the farm anymore because there isn’t enough work... [you] want kids to have every option which is why [you’re] happy for them to leave, confident they would come back when the drought breaks”. Despite this, with potential future-farmers leaving the region, there is the concern associated with the loss of skill obtained through on-farm experience, for example: “my son works at the mines, which is great but he missed out on learning about farming and now he isn’t really a farmer anymore... it is the worst thing that has ever happened, they can’t keep up with everything”. Here, the act of farming and learning the family trade is seen as part of the rural culture, whereby a farmer is only identified as such provided they have had the necessary upbringing on the family property, presenting as both a Social Structural issue, but also relating to Worldview, with the perceptions regarding experience and age and how these impact on agricultural practice. Increasingly, this process is seen to be threatened: “My son said not to keep the place. I’d like to think that I could hold onto it for when they change their mind but if my son or daughter’s not interested in it they’ll just sell it off. My farm is my super”. This marks another complex Social Structural issue regarding the family farm, where it was suggested that as the land is perceived as superannuation and one outcome of this complexity is that it makes the family farm unavailable for the next generation of farmers to take over management.

Some farmers are choosing to sell their property or subdivide. In cases where subdivision has been an option, hobby scale blocks have proved to be popular with city based retirees seeking a ‘tree change’. For instance: “because farmers don’t have a successive generation to take it on, they’ll split it into 5 or 6 parcels of land, then you have ex-city people buying them up as a lifestyle block, so you lose that ability to be productive. But some of them can be productive”. The small size of the hobby blocks and the lack of motivation to pursue agriculture as a full time occupation for hobby farmers is another factor that is leading to a change in the way that rural areas are identifying themselves. Such changes to the community demography were presented as Social Structural issues. In some instances, hobby scale landholders contribute differently to the community and have a different set of expectations regarding community life – for instance, with some of the allotments there has been the introduction of smaller niche industries (e.g. alpacas, cheese production) and similarly demand for different services and provision in towns (e.g. expectations regarding dining). The types of valued events and practices such as the picnic races, B&S Balls, pub culture, number of sporting clubs and agricultural shows were noted to have diminished. This in turn has changed the dynamic of the community, reducing the opportunity for interaction

and social support in already relatively isolated communities. Traditionally, these events have provided a mechanism for engagement, information sharing and support. Again perceived values in traditions of country life emerge as a Worldview issue. Reflections on the changes in community life as “falling apart” are an example of such issues emerging at the Myth/Metaphor level. Here, the phrase “falling apart” is used as a metaphor for the perceived social fragmentation and shifts in traditions, both socially and in regards to farming practices. Such metaphors highlight the importance of tradition, farming culture and social interactions within the communities.

Interestingly, there remains a perception within the farming community that city residents have a poor image of farmers, for instance: “The problem with people in cities is that they think we are the ones ruining the land. They think that we decide all the prices and that it is our fault. Same as this carbon thing, it’s been proven that we put more in than we take out but they think we’re the problem”, and “we’re suffering a lot from the desensitization of the city people. It surprises me the amount of people who think milk comes from a carton, meat comes from a tray. Governments have short-term memories. Somehow we’ve got to...climate change might be the big wake up call for city people, they might start growing vegie patches and buying legs of lamb rather than small pieces of meat”. Such reflections relate to the metaphor of “the sandstone curtain”, where the physical structure is used to describe a distance in between city and country value systems, which were also articulated at the Worldview/Discourse level. Similarly, the “sandstone curtain” is a Social Structural issue, presenting an actual physical and social divide between city and country. Despite this recognised differentiation in values, attitudes and behaviours between city and rural people, there was a sense that “somewhere along the line the divide between the farmers and the city has to change”.

Over time rural communities appear to be identifying themselves differently. Particular reference was made of the way in which the media, seen as a link between rural and urban areas, depict farmers, their farming practices and the broader rural community. There were consistent concerns expressed regarding the poor portrayal of farming communities. Generally, there was a sense that the media presented inaccurate images of communities in deficit, and run down and lacking in opportunities. It was also expressed that there were rarely any good news stories emerging out of rural communities, and when this did occur, the content of the stories failed to portray the reality of the farmers’ experiences. For instance, a good harvest would portray farming communities as being wealthy, failing to recognise the complexities of the market systems, for instance: “It’s obscene that we can put 12 months into a lamb sell it for X and then buy it back in bits and pieces for X times the amount at the supermarket. It’s obscene” and “people say you have to expect things to go up but it’s only the supermarkets who are putting the prices up, the farmer doesn’t get any more”. Although the media was perceived as being particularly influential in terms of the messages that are communicated between country and city, for some, “it’s not only the media that drives opinion. Some of the people in the city are the ones that are buying organic, joining Landcare groups etc. They still don’t see the bigger picture. But these are the people that we need to convince, because their hearts are in the right place”. The impacts of the media present themselves as a Social Structural issue, whereby the stories and descriptions of rural life are seen to shape peoples’ perception of rural communities.

Despite the physical landscape changing in some areas, Australia’s food security issues prompted workshop participants to feel that there will always be a place for farming in Australia, for instance: “farming will always have a place because of that food security issue. We’ll always need a certain amount of agricultural land”. In part this draws on the Myth/Metaphor level, whereby there is the perception that all food consumed in Australia, is produced in Australia.

Issues regarding values become particularly complex when considered in light of governance structures that operate. Particular reference is made to the parallels between how the authorities and scientific institutions operate in manners that are akin to identified city values.

Of reference are expectations regarding time frames, a sense of immediacy, individualism and competition. Time was a frequent example expressed by farmers of some of the differences between city and country value systems, where short termism was perceived by farmers as characteristic of city values, particularly in terms of CMA programs fitting poorly with the realities of rural life and farming operations. Again, issues of time present themselves at the Worldview level, whereby there is the perception within the farming community that this represents one of the differences between city and country values. Ultimately, time issues have implications at the Litany level, whereby there is reflection on some of the challenges associated with farming practice. The short time frames were not seen to be the fault of the CMAs, rather as a result of broader processes.

#### **4.1.2. Conceptualisation of sustainability**

The issue of sustainability was a common topic of discussion and related primarily to farmer and catchment manager perceptions regarding the meaning of the term, hence emerging as an issue at the Worldview/Discourse level. Interestingly, when the topic of sustainability emerged as an issue during discussions, there was a tendency for initial descriptions of sustainability to be generic – relating to issues of intergenerational equity, and a desire to leave the property in equal or better condition than when first acquired. During discussions, the meaning of sustainability shifted from an individual motivation, to an awareness of individual action having the propensity to impact on the collective. For instance, at such times there was recognition of individual farming practices impacting at a catchment level. The conceptualisation of sustainability then tended to be broadened from purely a recognition of sustainability relating to environmental or biophysical issues, and further into economic and community wellbeing. In the majority of instances, farmers' reflections on sustainability became more concerned with its applicability to their current and intended farming practices.

Significantly, there was a widely held opinion that the act of 'sustaining' was limiting to their intended practices, marking a critique by farmers of the discursive meaning of the word. Rather, there was a desire to aspire to work beyond their current capacity and to 'sustain' would be contrary to such intentions, for instance: "there is no doubt that some traditional practices were wrong for the land. I have a problem with the word 'sustainable' it sounds like a life support system in hospital or its like treading water, just to stay alive. It's only stable at best. I like the word 'regenerative'. I have already heard it today and it is good". This distinction in the term marks an important development in how farmers are considering their role as farmers/land managers and more generally as community members. The progression in the term's understanding flags a significant opportunity for reframing the way that engagement in land management can be considered. Notions of regeneration are understood to be empowering, and symbolically it represents a sense of optimism, where farmers are alluding to more favourable and sound landscape, an important point emerging at the Worldview/Discourse level. It marks that for some, there is a willingness to move beyond negative or restrictive imagery of, 'just being', to one that they are active participants.

Conceptualisations of sustainability also tended to extend beyond the conventions of the triple bottom line. It was recognised that there needs to be a balance between ensuring the viability of their farming operation in order to support their family, and attend to environmental stewardship issues as land managers. There also tended to be recognition of the role they play as community members and that their on-farm viability relates to the sustainability of their town and district. Here issues of social sustainability emerge at the Social Structural level of the analysis. Inherently there is an understanding that farm viability is connected to their ability to invest in the town, for instance, through demand of local goods and services, which contributes to the livelihoods of local enterprises. Hence, sustainability as a term was conceptualised as limiting not only to on-farm practice, but also in the settings in which it is applicable, making it not just a biophysical, economic or social issue, but all inclusive.

### 4.1.3. Locus of Control

A common theme that was openly discussed throughout all of the workshops was the lack of control farmers felt they had over many aspects of their lives. This lack of control was initially highlighted in reference to the drought, as this was often the number one issue that was mentioned. Many participants told of the hardship they had endured over the last eight years of the “drought hitting hard”. Commonly at the Myth/Metaphor level, metaphors were adopted to describe some of the challenges experienced within the farming community, for instance, war references, farming viewed as like a game, and references to farming as akin to gambling. These metaphors act as symbolic descriptives regarding challenges and a perceived lack of control, such as feeling like a pawn in a game of chess, which alludes to a sense of powerlessness, and highlighting a win or loss mentality associated with farming practice. Despite the severity, the drought was recognised as something they had to live with. Interestingly, positive environmental change was noted to be occurring despite the drought, which indicates that despite feelings of no control, certain individuals were able to continue to work towards their goals. Many were optimistic that the drought would break soon and were happy to persist with their farming practices the best they could. Others felt pressure to adopt more environmentally sustainable practices, for example: “Practices that were prevalent 100 km from here are what we are adopting now. It’s not a question of should we adopt these but that we have to – for example stubble retention”.

External pressures were also noted when participants spoke about the advice given regarding property management. It was thought that “people outside the game talk about sustainable agriculture but (to me) it is those people who want it to be sustainable for them not for us” - again ‘game’ serves as a metaphor reference to a lack of control. Evident from the discussions was a pressure on farmers to be sustainable but, that ultimately farmers are the ones making the decisions as to what they should do under their current circumstances.

Participants often used the phrase “farmers are price takers, not price makers” and feelings of frustration were common when discussing uncontrollable commodity prices. It was noted that global markets had a lot of influence over price variation, in particular for wool and wheat. It was hoped that this could be controlled in the future, with farmers being able to forward sell on the markets with safeguards, but the difficulty in getting farmers to reach consensus was noted. It was thought that difficulties may always exist, as there will always be farmers willing to sell at a lower price out of desperation. Financial pressures associated with the increased costs of fertiliser, fencing, wages, interest rates and fuel were other issues that participants felt they had no control over. Such issues, typically captured at the Litany level, illustrate the practical implications of farming communities feeling that they are losing out, as typified in the battle and game metaphors.

Issues of control also surfaced when discussing changes in the community and in agriculture. It was felt that litigation and legislation issues were preventing many traditional routines and practices from continuing, such as volunteer work and on farm labour, and farmers were in no position to influence or change this. Changes to drink driving laws were also noted as another uncontrollable factor that had impacted on traditional social interactions. Previously weekly visits to the local pub provided the opportunity for farmers to exchange stories or experiences socially, providing the additional benefit of social support. Very few suggestions as to how to overcome these uncontrollable aspects of farming life were given. In such instances, control issues emerge as Social Structural issues, illustrating impacts to community life and social interaction.

These issues are all a part of farmers’ locus of control, a concept that was first introduced by Rotter (1966), who describes it as whether one believes their actions are controlled by themselves (i.e. internal locus of control) or controlled by people or conditions external to themselves (i.e. external locus of control). This concept has been explored in earlier research phases of the PUTTI project (Bates et al, 2008), where the values and reported behaviours of land managers supporting sustainable land management practices were identified. This previous research indicated that land managers who see themselves as being in control of

their circumstances (having an internal locus of control) were more likely to be more environmentally sustainable land managers. This concept has been explored further in the Monitoring and Evaluation phase of the PUTTI project (see Leviston et al. 2009).

#### **4.1.4. Engagement**

The workshops provided an opportunity for landholders to discuss their experiences with the CMAs, Landcare groups, local agronomists, rural suppliers and government departments (such as DPI). Participants involved with specific programs run by the CMAs (such as those from the Footprints, Gumble and Walli groups) reported higher levels of engagement with the CMAs and were able to comment based on their experiences with the program. At the Litany level, participants from the remaining groups (Humbug, Little River, Watershed) were able to comment on other engagement experiences, but overall were less familiar with the CMAs and lacked understanding about their role.

The CMA was commended by participants for creating awareness with landholders about the 'bigger picture', in particular the downstream impacts of salinity. Many felt that this understanding had given them a greater sense of responsibility, knowing that other people were being affected by what they do on their property. This physical connection with others in the catchment was an issue that emerged at the Social Structural level. The courses, field days, farm tours and workshops run by the CMA were highly praised by participants who had attended them. These remarks were primarily from those in the areas that had been targeted by the CMAs and participants were grateful for the attention and "money where the mouth is" delivery. The practical approach was particularly highly regarded, as many participants noted that "hands on, seeing the results, is the way to go". The field days where soil pits were created presented a prime example of participants learning by doing, for example it was noted that "I hadn't noticed what my soil was like until I stood in the pit". Such processes emerged as a Social Structural discussion point and related to ways in which the farmers contemplate and engage in change, typically with observation as a precursor to engaging in change directly themselves.

Many participants had also previously been involved with Landcare groups and felt that this had been effective in pulling people together and raising awareness of environmental issues. When discussing the CMA structure, it was believed to be more workable than Landcare and a better tool for achieving change. There were specific recollections of properties "regenerating" due to fencing that was carried out with CMA funding. It was also noted that CMAs were "starting to realise that farmers do know a lot about their land and are recognising this fact", which was thought to be crucial to achieving sustainable agricultural change.

Whilst many participants praised the CMA, others expressed concerns. Some participants found particular projects to be difficult, as they were operating under short time frames. In addition, it was felt that current pressures (e.g. the drought) made achieving targets particularly difficult and landholders were concerned that they would be deemed failures and therefore ineligible for future funding. Again, such complexities related to farmers' perceived differences in Worldview between city and country areas. Instances were recounted where participants had been given funding; only to have it taken away while deciding how to best use it. Whilst these issues of time and funding were vibrantly discussed, it was recognised that it was not directly the CMAs fault. It was noted that "it all comes from Canberra. They (CMAs) are given so much money and if it isn't spent then it has to be given back", and, "I see it as the management team's fault. There are no socially acceptable goals, its all single issue outcomes and it needs to be reviewed". Therefore, it was hoped that funding arrangements could change to allow for long term projects in which the achievement of outcomes were in a more realistic timeframe. It was also hoped that funding could become more readily available for environmental works during the drought, as participants noted that was when they needed it the most. Such issues regarding issues of time and governance arrangements emerged at the Social Structural level, where there was recognition of broader

social and institutional pressures that impact on the capacity of the CMA and how they do business with the farming community.

The CMAs interpersonal relationships with the community were also discussed during the workshops. CMA staff were said to be cooperative, but concerns were raised in regard to the high turnover rate of staff and the difficulties this posed for building trust. It was also felt by some that the CMAs had “special links in the community” and that was where the money would go, emerging as a Social Structural issue in relation to farming community and CMA relationships. Applying for funding was thought to depend on how well you could fill out forms and how big your project was. Desire for the return of extension activities was noted and it was hoped that the CMAs could replace the previous Department of Agriculture extension officers. In addition, it was thought that “CMA staff will tell us about grasses and trees but not about crops and beef”, whereas the Department of Agriculture staff were thought to have helped with production whilst informing landholders of their research.

Discussions about engagement issues did not just focus on CMAs and previous NRM arrangements. Throughout the workshops there were various comments made about landholders being sceptical of agronomists. Many told of stories where they suspected the agronomist or the rural supplier was “pushing their own agenda”. Concern was also raised about the amount of conflicting information that was presented to landholders from agronomists, for example: “at a field day recently I conducted my own experiment and went around and asked three different agronomists the same question. I got told three different answers”.

Despite many positive accounts of participant interactions with the CMA, there are still a number of areas where engagement can be improved. Although the workshop participants represent a relatively small sample, it was clear that those involved with the CMA programs had a better understanding of the CMAs role and aims. To avoid the formation of stereotypes about CMAs that could potentially act as barriers to successful engagement and program implementation, it is important that accurate information is shared with the community. Most participants stated that they are currently overloaded with information, so mass marketing to the community is unlikely to succeed. This particular issue emerged at the Litany level. Instead an informal approach may be best, where the CMA can fit with current community gatherings and share information in ways the community likes. A new participatory process will be expanded on in Section 5.

## **4.2. CMA Staff**

### **4.2.1. Current participatory processes**

During the workshop discussions with CMA staff, the current landholder engagement strategies run by the CMA and Landcare groups were reflected upon. In terms of engagement, the CMAs prided themselves on the broad coverage of their offices, their “good work” with bigger properties located further west, the trust they had built with landholders in certain areas (whilst still recognising the continued need for trust building), the delivery of training programs/ workshops, the showcasing of successful innovators and the range of different rewards available for “good” farmers.

It was thought that particular areas in the catchment were more engaged than others, but this did not necessarily translate into the adoption of practices. It was also noted that specific training was necessary for the adoption of practices; otherwise many landholders may be going through the motions and doing the right things for the wrong reasons. The ability of the CMA to be able to show landholders how their actions impact on their properties and their families was highly regarded, as it was felt that this was giving people the capacity to independently assess risks and therefore make informed decisions. It was also noted that the CMA needed to provide support to landholders’ attempts to maintain the changes made to their practices, as “they still need someone to go to with questions”.

The idea of the CMA providing a support role was not maintained by all. It was noted that “we (the CMA) ran a series of workshops and would explain good information to people, but we still had to go out to their property and provide support, e.g. how to set up machinery”. It was also thought that agronomists were trusted more by landholders, as they were more willing to visit properties, which was interesting given that the CMA staff wanted to build trust, yet without having to engage in extension work. Generally, changes in the roles that government departments serve were discussed at the Social Structural level.

The discussion also focussed on ways the CMA could improve their engagement with the community. It was thought that establishing first contact with landholders and community members, so they could be informed as to what the CMA does and where they can go for more information, would be beneficial. Participants noted that the CMA needed to become “proactive with getting knowledge out there, e.g. have beers and barbeques”. Some participants expressed a hope that the CMA would steer away from the image of being purely a funding body and it was suggested that this could happen by targeting information at a few key people in the catchment. Interestingly, it was thought that sending information out via mail and email would also be an appropriate avenue to pursue, but during all of the workshop discussions with landholders the overload of information was raised as an issue.

It is evident from the outcomes of the workshop discussions that the CMA staff are keen for new ways to engage with landholders and are reflective on their past engagement strategies. If we take a narrow view of the previous and current participatory processes that have been evident in Australia, it is clear that there is something missing. At the Social Structural level there was critical reflection of the timelines and potential negative impacts associated with subsidies. The decade of Landcare was based on the collaboration of landholders working at the “grass roots” level to tackle problems of land degradation. Evaluations and criticisms of the Landcare era have been well documented (Cary & Webb 2001; Curtis & Lockwood 2000; Curtis & DeLacy 1996, 1995) and particularly highlight the high levels of burnout amongst participants, the exclusionary nature of many groups and the large amount of responsibility placed on individuals for only small on-ground achievements. The current NRM structure requires individual landholders to apply for funding through the regional bodies, in a competitive process, where on ground achievements have been predetermined in the hope of achieving catchment scale change in a particular timeframe. Although change takes time, it is already obvious that the current NRM structure needs to address a number of issues if it is to make progress both on ground and with local communities. For instance, at the Social Structural level, it was raised that financial pressures are perceived to inhibit farmers’ long term planning capacity and, pleasingly (also at the Social Structural level), there was a desire to work with farmers with long term aspirations. As noted by Buchy & Race (2001), it is unrealistic to expect ‘self-help’ groups to make a difference to the complex issues causing land degradation; therefore it is obvious as this ‘self-help’ model continues that additional support is required for landholders. At both the Litany and Worldview levels, there was discussion on the importance of considering wellbeing (including mental wellbeing) within the farming community.

#### **4.2.2. Locus of Control**

Issues relating to farmers’ locus of control were also raised during the workshop discussions with CMA staff. It was noted that “cockies have no control over their destiny” and uncontrollable variables included the drought, changing commodity prices and increased input costs. These types of issues were raised at the Litany level and further at the Social Structural level, with reference to how forces such as unfavourable environmental conditions impact on farmers’ capacity to change. The pervasiveness of this issue is further emphasised at the Worldview level, where locus of control issues arise in CMA perceptions of farmers. Despite comments about farmers having little control over their circumstances, it was noted that being optimistic was the key to being successful, for example: “we have to believe that we can make a difference and affect global forces”.

Interestingly, when discussing change in agricultural settings, none of the CMA staff spoke of themselves as pivotal or central to change. Comments were made about the need to build capacity and for CMAs and others to provide support for landholders, but the exact details as to how this will be done and how it will lead to change and desirable outcomes was not specified. This may be due to the workshop setting and the lack of time provided to clearly define actions, however, the focus of landholder change was directed at methods of changing farming practices and behaviours. Change was not discussed in terms of how the community could be changing collectively.

It could be inferred from comments made by participants during the workshops that CMA staff may have an external locus of control, and believe that they are just a regulatory body where changes take place separate to, and outside of, their control. For example, it was noted that “we need to feel confident with the NRM message and hope this can become a broader message amongst the community”. This lack of confidence was again highlighted by participants when discussing the role they had been set to play, which over the last few years involved “a lot of money, we were tasked to get it out the door” and that “it’s hard to give out a good message with federal funding operations”. Complexities associated with funding and current governance structures tended to be raised at the Social Structural level. These external pressures impacting on the CMA’s ability to achieve sustainable land management were also recognised during workshop discussions with landholders, but as a whole, the farming community may be largely unaware of these broader pressures.

It is therefore apparent that both the CMA staff and the landholders feel some external LOC pressures. We propose that for true sustainable landscape change to occur, the CMAs, researchers, landholders and others in the community all need to see themselves as part of the problem and solution. It is hoped that by suggesting a new participatory process (see Section 5.2 for details), increased interactions between all players will lead to discussions where the broader forces impacting on each group are recognised, and further discussions can then focus on what aspects can be controlled to achieve desired community outcomes. Our research provides on ground evidence to support the claims made by Wallington & Lawrence (2008) about increasing the social and dialogical nature of NRM responsibility, so local knowledge can be contributed and a culture of learning can be supported.

#### **4.2.3. Conceptualisation of sustainability**

The topic of sustainability was also discussed in depth with CMA staff. Workshop participant perceptions were particularly insightful, as they provided a degree of understanding into the worldview that underpins their management and engagement activities. Significantly, there were vastly different conceptualisations of the term, and similarly interpretations of current farming behaviour and land management. In some instances, there were congruent understandings regarding how they and landholders conceptualised the term, for example: “Sustainable is a word we are going away from a bit more in favour of improving/ enhancing/ better management/ best management practice etc” and, “You pick up on with some of the more proactive managers that they want to go beyond sustainability, they want to make things better, just sustainability is not good enough for a minority of proactive farmers”. In comparison, others felt, “farmers frame good management in terms of productivity”, “many farmers are maintaining the status quo, they are not degrading the land but they could be doing things better”, and, “lots of people think short term, their life or their family”. In light of the myriad of CMA perceptions regarding landholder approached to sustainability, at the Myth/metaphor level there was recognition of the complexity of farming, for instance: “it is hard to be green when you are in the red” – drawing on the symbolism of green as being pro-environmental and red as being in debt – while similarly at the Myth/Metaphor level criticism directed towards an perceived conservativeness within the farming community. Such mythology and use of metaphor appears to underpin the some of the variation in CMA reflection on sustainability. Recognising the vastly disparate conceptualisations of sustainability by (and amongst) CMA staff, compared to conceptualisations made by their

catchment community (landholders), is of critical importance, highlighting differences at the Worldview/ Discourse level, both within and between groups, and also at the Litany level, regarding the different definitions of sustainability having varied on-ground applications. During one workshop it was raised, “I think the majority of what landholders believe is sustainable is different from what we think”. It is such differences that need to be collectively explored so that farmers, managers and researchers have the opportunity to operate on the same page when attempting to address land management issues.

Different understandings are present not only between, but within groups, and may help to explain some of the challenges that occur when these bodies interact and attempt to collectively manage the catchment, for instance: “If you ask a Landholder what sustainability means they might say “if I am here in 10 yrs”, if they are in a high rainfall area they might say “I have been here 30 yrs so I am sustainable”. There is another group that look at environmental sustainability in addition and then another group who include family etc in their definition of sustainability. From our point of view we tend to think of environmental sustainability.... Some of the CMA that have associations with property probably look at economical and environmental”. Here, the conventions of sustainability, which are usually framed in terms of the triple bottom line, are actually teased apart, where tenants of the definition are favoured depending on the area of interest of the group or individual. This marks yet another disparity and potential tension in NRM arrangements. Similarly, sustainability was also raised as a discussion point at the Social Structural level, with recognition of the need for community wellbeing to ensure physical and social sustainability.

### 4.3. Barriers and Solutions as Identified by Landholders and CMA Staff

#### 4.3.1. Barriers and expectations

During all workshops, participants explored many of the drivers and barriers preventing change in agricultural practices. These are detailed in Table 6 below.

**Table 6: Barriers and drivers of agricultural change expressed during the workshops**

<b>Barriers of change</b>	<b>Drivers of change</b>
Age (old are conservative)	Age (young farmers = new knowledge)
Money	Money
Knowledge barriers	Education/knowledge/courses
Conflicting information	Innovations/technology
Lack of support	Local support (young farmers network)
CMA having a narrow focus	Local agronomists
Short term timeframes	Climate change/drought
Bad experiences in the past	Passion for farming
Climate/weather	Social diversity
Personality	Positive success stories
Depression/reduced farmer confidence	Early adopters setting benchmarks
Avoidance of the issue	Stewardship programs
Need for profits in short and long term	Strong ties with researchers
Declining farm profit	Other organisations with a NRM agenda
Declining rural population	Increased land prices
Technology becoming too advanced	
Too much enterprise mix	
Remoteness	
Landscape variability	
Increasing urbanisation/subdivision	
Farmers needing to be marketers as well as producers	

When examining the data in Table 6, it is interesting to note that many of the barriers are also perceived as drivers to change. Given this complexity, there is the need for critical thought, confidence, positivity and creativity when examining issues and proposing solutions. Of additional interest was that, even with a combination of views from landholders and CMA staff, there was still no mention of the CMA being a driver of change.

### **4.3.2. Solutions to challenges**

One of the original aims of the workshop discussions was for participants to begin thinking through some potential solutions to the challenges discussed. Some of the workshop discussions naturally led to talking through solutions, whereas others were content to focus on the issues and to share various understandings and viewpoints. This distinction presented an interesting insight into change and how groups or individuals can be at different stages of readiness to change or discuss change. Discussing both the issues in depth and then potential solutions (when participants are ready) are vital to achieving change, as there cannot be solutions unless the problems are clearly understood, and understood from various viewpoints. This highlights the value of the CLA method in providing further insight into underlying causes and different worldviews/myths, which can often be overlooked by other forms of analysis. Furthermore, Section 6 Reflections on the Research Process, indicates how critically considering *process* can be useful in working towards finding solutions and initiating change where and when it is needed.

One of the solutions suggested during the workshop was to have farmer control over markets and commodity prices. It was suggested that small farmers could come together to form a unified group and lobby for forward selling on markets to safeguard prices. Whilst these ideas of farmer control were centred on the Australian situation, it was noted that Australian farmers could no longer believe that they are operating in isolation and that it was now necessary to have a global outlook.

Further solutions to the issues facing farmers included neighbouring farmers purchasing machinery together, so the costs to take part in better land management could be reduced. Education and “watching crazy neighbours and deciding that there might be some merit in what they are doing” were also thought to be important in creating solutions for change. In this sense, ‘crazy’ referred to landholders that were adopting different land management practices earlier than others, providing an opportunity for others to observe while not personally taking a risk. Ultimately, working through farming solutions for now were put off with the optimistic view that “next year will be better” and that “the drought will break eventually”. Participants also framed themselves as either business people, or highlighted their emotional attachment to the land. These different outlooks on change, the future and thinking up solutions to address issues, highlight a small part of the complexity of the farming situation.

Broader solutions for the local community and environment were also discussed. It was thought that the land could not just be locked away and be expected to go back to its natural state and that environmental solutions also needed to take farmers livelihoods into consideration. Encouraging the growth and development of towns and keeping money made from mining operations in the local area were also thought to be solutions for ongoing community sustainability. Youth were also seen as important and encouraging them to return was noted as a priority. It was evident during these discussions that farmers are closely linked to their local communities and the idea that “with a few good seasons we will help the town grow” was common.

This presents an argument that, when thinking of solutions for environmental issues in rural areas, not only do the immediate environmental issues need to be considered but so do the local communities in which these issues are located. Many of the issues discussed are

interconnected and that is why goals identified by the community and landholders may be more likely to succeed than pre-determined, environmentally focussed ones.

### **4.3.3. Heroes**

Participants were asked to discuss who they regarded as local heroes and what role they played in the local community, particularly in regard to encouraging change. The intention was to explore the apparent leaders within the community and so too the types of groups and individuals in which the farming and agricultural community aspire. A mix of responses were given, either explicitly named, or examples of respected leaders within the community. Given the variety of land management practices being undertaken, it was thought that there could be no one hero, rather “lots of little heroes, leaders of groups and organisations”. Community leaders/heroes were thought to be confident, honest, knowledgeable, likeable, open communicators, successful, generous, hard working, helpful and innovative. Interestingly, some rural reporters and DPI staff were noted as leaders, due to their skills in extension and communication, but overall it was thought that local heroes were mainly known for production rather than ecological work.

Whilst discussing these community/agricultural leaders, it was noted by CMA staff that issues surrounding “tall poppy syndrome” were apparent within the communities. It was thought that the successful people were “knocked down” and that, because of this, landholders were reluctant to apply for any of the numerous awards and grant opportunities offered by the CMA or their agricultural organisations. Previous winners of these awards had become well known, but it was also noted that their neighbours no longer liked them and it was unknown as to whether their practices would become widespread. Interestingly, similar discussions during the landholder workshops had no reference to tall poppy syndrome. Instead, notions of collaborative effort and good will were evident, for example “I was just thinking back to the question about having anyone locally that we look up to. Well, none of us set out to do the wrong thing. We all try and do the right thing so in that sense all of us want to be good examples”.

This discussion presents an interesting consideration for sharing of ideas and information through the community. Many of the CMA staff mentioned the need for “farmers to share information with each other”, but it appears that this could be difficult to promote within the community if feelings of competitiveness are apparent. If these notions of ‘tall poppy syndrome’ are widespread then the current NRM framework could possibly be exacerbating it with competitive funding regimes and an unequal distribution of resources, both human and material. More investigation is needed to establish how widespread this issue is.

## 5. RECOMMENDATIONS

### 5.1. Reconsidering Change

The workshops provided the opportunity to learn about the array of lifestyles and stories of local community members. Doing so highlighted the variety of circumstances present and emphasised the need to consider factors such as social diversity when considering land management and change. There is value in identifying such diversity; however, one of the challenges in conducting rural research is in managing confidentiality and anonymity issues. In a bid to address these concerns and yet capture an account of the social diversity in rural towns, vignettes have been constructed. Vignettes are narratives based on research data that consist of the composite stories of multiple participants' (Coakes & Bishop, 2002). The constructions of the narratives actively reflect the dynamic and social processes, but are told in a way that the participants' identities are concealed (Coakes & Bishop, 2002). They are used to describe and capture multiple participants' reflections on processes or occurrences in their lives. Participants' accounts are pulled together so to construct a relatively generalised description of behavioural or social processes and are useful in that, while they provide rich descriptions, they also prevent the possibility of participants being personally identified as they are the coming together of multiple participants' stories. The result is "the creation of community narratives from personal stories" (Coakes and Bishop, 2002, p. 640). The following vignettes have been constructed to capture various farming contexts described by multiple workshop participants, helping to articulate the diversity of circumstances and needs within the one catchment.

#### **Edward and Lucy**

*Edward is 52 and operates a mixed farming enterprise. He lives with his wife Lucy and their teenage children on the wheat and sheep farm that his father passed down to him. The family support Edward in operating the farm on the weekends and after school. Lucy earns income off the farm as a local school teacher. In order to make the farm profitable, Edward has researched new technologies and strategies to become more efficient. He is involved with the local CMA, and regularly asks advice from the other farmers. Edward previously applied for a CMA grant and was successful with the assistance of CMA staff. With the grant, Edward was able to conduct a trial and has since applied his learnings on a larger scale due to its success. Edward is concerned about the quality of the land he leaves to his children so has implemented new management techniques to preserve the land as best he can. One farmer suggested that Edward create a farm plan. Edward consulted with both his local agronomist and CMA to produce one, which also includes succession planning strategies. Edward's son has shown interest in taking over the farm when Edward retires, and Edward and Lucy are proud that their son will carry on the tradition of running the farm. Edward and Lucy regularly socialise and interact within the local community, particularly at their weekly round at the golf course. Edward is also keen to discuss issues with other farmers, and has shared his recent success and knowledge with other farmers who he sees at field days and when in town.*

#### **Bob and Beatrice**

*Bob and Beatrice are new to the area. They retired and sold their house in Sydney one year ago to buy a small block of land in the country to farm alpacas. Bob and Beatrice expected a slow pace of life in the country but their perceptions of farming have changed as they experienced living and working on a farm. To integrate into their new community they have joined several community groups, including the local Landcare group and regularly attend meetings and volunteer at community events whenever possible. Despite this, they have struggled to be accepted by most of the existing farming community, so mostly interact with their surrounding neighbours who also reside on hobby blocks. They also share Bob and Beatrice's love of a good coffee, so regularly catch up in town. Bob and Beatrice aim to improve their land but don't really know how to go about this. One of the suggestions to*

come out of a Landcare meeting was to plant more trees, so Bob and Beatrice have begun doing so. Bob and Beatrice are aware of the extensive knowledge the long time farmers in the region have, so have begun asking one of their large-scale neighbours down the road about the best varieties to plant.

### **Sean**

Sean is a fourth generation farmer who is in his mid-60s. He lives on his farm with his wife Marilyn. Sean's two adult children moved away from the farm, one sought opportunities to work in a larger town and the other moved to Sydney. Sean actively discouraged his children from taking over the farm, as the return from his crops has been meagre given the poor markets, unfavourable weather and the money spent on fertiliser and pesticides. In an attempt to turn more profit and compete with the large-scale absentee-owned corporate farms that have developed in the area, Sean bought his neighbours' property. However, he feels that due to the drought, and problems such as salinity and erosion, he is not able to increase his productivity. External factors such as the markets make him resentful, and he feels he is as a price taker, not a price maker. Sean is distrustful of government agencies, and believes that grants only go to farmers with the right connections. He attempted to apply for a grant but found the form too confusing and time consuming to fill in. He is not overly interested in other people interfering with his practices and telling him what to do, as he has over forty years of experience and is not interested in changing the way he runs his property. Sean's work hours are dictated by the requirements of the land, which leaves little free time. He used to enjoy catching up with other farmers at the pub in town, but since police have cracked down on drink driving offences Sean no longer ventures out.

### **Paul**

Paul is a single, 31 year old farmer. He grew up on a farm and enjoys the lifestyle. Paul moved from his parent's house to the city when he was studying agricultural science at university and, after travelling for 18 months, he purchased a farm and settled back into it several years ago. Paul's farm is further west than his parents, as his father is not ready and financially able to retire, he could not afford a farm in the same vicinity as them and Paul wanted the independence of running his own farm rather than working for his father. Paul is actively adopting new technologies so his farm operates more sustainably and profitably. Paul seeks out information from many different sources, such as the internet, other farmers (including his father), the local agronomist and specialists at field days. He also receives lots of information through his networks at the Young Farmers Council. Paul has successfully applied for several CMA grants and has been pleased with the changes. As well as attending various meetings and workshops regarding farm management, Paul is also involved in community activities such as football. His involvement in the local football team helped him become accepted in the community, and Paul enjoys going to the pub with the boys after the match. There are few single women his age in the area but he hopes one day to be able to start a family.

Each of the vignettes captures different types of landholder behaviours, attitudes, values and activities and these are just examples of the diversity in the region. The importance of identifying and flagging such differences within a community is to illustrate the vastly different needs each has. These needs lead to implications regarding land management intervention and the types and level of participatory engagement they are likely to respond to best. Considering participation is therefore critical and so too the assumptions held regarding participatory processes. Buchy and Race (2001) critique the set of assumptions that tend to accompany how participation is conceptualised and do so though recognising the role power plays in the construction of participatory models. In particular, they argue against the assumption that hierarchies are favourable where higher levels of participation are preferred to lower levels, similarly that more people participating is of benefit to NRM outcomes, and, that communities necessarily want to participate (Buchy & Race, 2001). While their critique refers more explicitly to participatory models and typologies, it also holds a high degree of applicability when considering the role that power and values play in the construction of models of change. For instance, Roger's (1995) model of the diffusion of innovations gives

one account of farming change processes, but recently has been under scrutiny (Pannell et al., 2006), with particular reference to negative values associated with terms employed in the model. In particular the term 'laggard' has been criticised, so too the orientation of the model that assumes land holder change is the paramount course of action. Problematically, values are often placed as to where people or communities 'sit' in their participatory or change process, and doing so favours action over inaction and places expectations on communities to engage, even if not to their personal best interest, or if they have the capacity given their context. In response, this research attempts to identify and adapt a more suitable model of change that,

- does not assume that an entire community is at the same stage of change
- does not assume a person is contemplating change
- recognises that during a persons change process, they may revert to a previous stage of change, and no negativity is directed towards them because of their decision
- does not place a value on the stage that a person is during their change process.

The Stages of Change Model developed originally by DiClemente and Prochaska (1982) and further developed in the 1990s (Prochaska & DiClemente, 1992) fits nicely with these parameters. The model proposes that change is a non-linear process, where the stages are depicted visually as a spiral. There are no expectations or values associated with each stage; rather the models utility is in describing the stage of change, so that intervention can be tailored to the individuals need. Each of the stages are summarised from in the following table:

**Table 7: Descriptions of Prochaska & DiClementes' Stages of Change Model**

<b>Stage</b>	<b>Description</b>
Precontemplation	No plans or intent to change current behaviour. No awareness of aspects of behaviour, attitude or practice that may require change.
Contemplation	Consciousness of a problem and consideration directed towards the possibility of changing behaviour.
Preparing for Action	Awareness of an issues and a desire to change is coupled with the beginnings of behavioural change.
Action	Behaviours begin to be modified.
Maintenance	Continued action of the modified behaviour.

This particular stage of change model is appealing because the stages are:

- void of values or assumptions regarding a persons stage of change,
- the non-linearity of the model dissolves any sense of hierarchy associated with the stages, making it acceptable to revert to a previous stage of change,
- recognises 'Precontemplation' or the lack of intention to change as legitimate,
- accepts that no-change or no action is acceptable,
- recognises that change takes time, and
- celebrates the individual level of readiness to change and recognises that people in a community may be facing similar issues but can be a different stages of change.

Discussion during workshops made reference to some of the stages of change that participants were currently experiencing. Table 8 gives examples of workshop participants' experience of engaging in farm level change which compliment a stage of change.

**Table 8: Stage of change as relevant to farming practices**

Stage of Change	Workshop Participants Description of Change Process in Farming Practices
Pre – contemplating change	No or limited active engagement in broader farming or community activities. Begin to participate in field days or farming events at varying degrees of commitment as a means of scoping opportunities, contacts and information about farming practices generally.
Contemplating change	Notice land or stock management issues on their property. Begin a discussion with other farmers who may/may not have experienced similar issues. Begin “looking over neighbours fence” and at other properties in their catchment to learn from other farmers activities. Monitor the relative success or failure of others efforts at change as a means of considering their personal propensity to change.
Preparing to change	Contemplation of financial capacity to engage in change – consideration of markets, weather and other external uncontrollable factors that may impact on their overall farm viability and their degree of willingness to risk participating in a changed behaviour. Information seeking from professionals, other farmers, experts, books, journals and the internet. Initiate small trials on own property based on learnings.
Action	Continued practice at trial scale or expansions of activities based on appraised success at trial scale.
Maintenance	Continued activity with the opportunity to expand.

As mentioned, one of the benefits of the Stages of Change model is that it recognises that it is common for people to revert to a previous state of change. During workshops, this tended to occur when farmers critically appraised a potential or enacted change to their farming practices. For instance, an on-farm trial was unsuccessful, they are likely to abandon the practice. In such an instance, they are moving from the ‘preparing to change’ stage to ‘contemplating change’ or ‘precontemplating change’ if they abandon the idea or no longer desire to change. Significantly, the decision to change is not appraised by others, rather it is recognised as a being a normal part of change process where people evaluate their circumstances and act accordingly.

Originally a health promotion model, the Stages of Change model (Prochaska & DiClemente, 1992) has been adapted to consider community level change as opposed to individual change (Edwards et al., 2000) and is later adopted in natural resource settings (Queensland Department of Natural Resource and Water, 2007). This adapted version introduces a key assumption regarding the group processes, namely that the community as a whole is at the same stage of change. Herein lies the significance of Prochaska and DiClementes (1992) Stage of Change Model, where it acknowledges that people can and will be at varying stages of change, and thus implies that a community may not be collectively ready for action. They highlight the importance of matching an individual’s stage of change with a suitable intervention, reflecting that the stage of change of an individual provides valuable information regarding the most successful type of intervention, for instance that:

Action – oriented therapies [interventions] may be quite effective with individuals who are in the preparation or action stages. These same programs may be ineffective or detrimental, however, with individuals in the precontemplation or contemplation stage (Prochaska & DiClemente, 1992, p.1106).

During some of the workshops, farmers acknowledged the importance of the collective, describing the value they place on their local community, on kinship and trust. An awareness of how individual farming activities have the capacity to impact on the broader catchment was discussed. For example, this is prevalent in the discussions with the groups involved in CMA targeted programs, where particular attention had been given to explaining the broader landscape processes in which they operate. They also noted that essentially farmers have to consider a myriad of individual property, economic and familial factors when contemplating their potential to change. It was also recognised during CMA workshop discussions that change takes time, for instance: “It’s taken a long time to figure out that the practices have been wrong; it’s going to take another 30-40 yrs to change what everyone’s doing”.

The stories and reflections of the change process are consistent with the stages of change proposed by Prochaska and DeClemente (1992), and frame the argument of the need for intervention to be targeted to the farmers’ individual stage of change in light of broader collective catchment aims. This research is not proposing that the stage of change for each farmer be identified, rather, a suite of potential interventions be made available to the farming community. This is consistent with the recommendations made in Bates et al. (2008), where it was suggested that programs needed to be developed to suit differing landholder intentions and skills; and understand that behaviour change takes time to occur. Providing opportunities to the community that are not all geared for those in the ‘preparation’ or ‘action’ stages of change means that the CMAs have the opportunity to influence a broader spectrum of the farming community. Interventions through funding opportunities are best suited to sectors of the farming community that are in ‘preparation’ or ‘action’ stages of change. More tailored intervention needs to be developed to provide the opportunity for engagement at the ‘precontemplation’ and ‘contemplation’ stages. Individuals at such stages are the most responsive to intervention that may: 1) trigger personal critical appraisal of current activities; 2) are the least time and energy invasive; and, 3) are not problem oriented, rather they are geared towards opportunity development (Prochaska & DiClemente, 1992). Table 9 summaries individuals’ likely attitudes and behaviours in relation to their stage of change and offers suggested interventions to suit their needs.

**Table 9: Individuals’ likely attitudes and behaviours in relation to their stage of change and suggested interventions**

<b>Stage of Change</b>	<b>Likely attitudes and behaviours</b>
Precontemplation	Less likely to be cognisant of issues or problems and therefore less likely to communicate with others regarding issues. Less time or energy investing into evaluating their current set of circumstances. Fewer emotional reactions to instances where there is a negative appraisal of their circumstances. Generally least ‘active’.
Contemplation	“Most open to consciousness raising techniques” (Prochaska & DiClemente, 1992, p.1109) Stage when most likely to start evaluating their circumstances (values, attitudes and behaviours) and most responsive to situations which call them to question their current circumstances.
Preparation	Beginning of small steps towards action
Action	Increased levels of support seeking
Maintenance	Coping strategies (bids to prevent relapse)
Appraisal	Evident at Contemplation, Preparation, Action and Maintenance Stages

The variation in landholder needs (in relation to stage of change), in addition to the discrepancies between landholder and CMA staff perceptions, suggest that current methods of engagement and participation may also need to be reconsidered.

## **5.2. Reconsidering Participatory Processes**

Before launching into what a new participatory process may entail, it is necessary to discuss the workshop recommendations in context. As the research has demonstrated, there are a myriad of controllable and uncontrollable aspects for both land management and NRM in Australia. These include factors such as the continuation of State and Federal governance systems, unpredictable weather in the face of climate change and fluctuating market prices for landholder commodities. Significantly, both landholders and CMAs are experiencing these uncontrollable factors. In light of this relative uncertainty, it is therefore useful to focus on what can be controlled.

### **5.2.1. Improving relationships between CMA & Landholders**

One such controllable factor is the interpersonal relationships between CMAs, landholders, researchers and the broader community, and improving this may help overcome some of the apparent barriers to change that have been discussed. There are similar aspirations and values that are shared by all 'stakeholders' involved in this research, such as long term sustainability (including social, environmental and economic) goals, for example, as stated in the catchment action plans and by farmers, as "no farmer wants to leave the land in worse condition than they found it". There are also shared short term values, such as profit for farmers and achieving positive environmental outcomes for CMAs, to demonstrate they are doing the job they were set to do. What is evident is that all involved parties do not appear to realise the similarity between their goals. For example, when discussing the term 'sustainability', farmers think that the CMA do not care about farm profitability, rather that they are interested in native grasses and salinity management, relating more to notions of environmental sustainability. On the other hand, there is a misperception that farmers have a limited 'production focused' perception of sustainability, when they repeatedly expressed value in collective and community wellbeing, while recognising "it is hard to be green when you are in the red".

Interpersonal relationships are obviously critical when considering participatory processes. As mentioned, public or community participation models in the past have typically focussed around simplified ladder approaches (Arnstein, 1969), where it is assumed that the greater the level of participation the better the outcome. The original ladder concept has more recently evolved to take context and different participant learnings into consideration (Pretty, 1995; Ross, Buchy & Proctor, 2002). While each has their merits, there has been little research on how to effectively involve communities (Clarke, 2008). Therefore, it is of critical importance for this component of the PUTTI project to consider the underpinnings of the participatory process. For example, for those involved in the development of programs or research that adopts a community participatory model, it is valuable to ask, "whether they consider participation as a means to an ends or an end in itself" (Buchy & Race, 2001, p. 294). The distinction stands in the participatory process as geared towards achieving a particular aim or end point, versus the intention to facilitate a change process. Similarly, participatory processes should be closely examined to "question whether participation is merely a process of giving opportunities, as it is frequently presented, or whether participation also requires specific imposed engagements from the participants" (Quaghebeur, Masschelein & Ngyen, 2004, p. 154). Nelson and Wright (1995) speak of this distinction as instrumental participation (directed towards a particular end point) and transformative participation (as a participatory process geared towards social change). It is this distinction between outcome and process which frames the following discussion on reconsidering participatory processes. Transformative participation is the ethos that is encouraged in this report and the underpinnings of the discussion.

### 5.2.2. Identification of 'other' knowledge & stakeholders

In their overview of previous environmental governance in regional Australia, Wallington & Lawrence (2008) state that there is now a need to go beyond searching for the answers to the same questions and that the generation of new questions will need to take the contribution of local knowledge seriously. In addition, Keen & Mahanty (2006) state that: "A learning approach to NRM must accept that knowledge can be generated in different ways, and that all knowledge can be contested. Thus, all learning processes are contextual – that is, they exist in relation to the place in which they occur, the experiences from which they arise, and the cultures with which they are associated" (p.498). The need to include all forms of knowledge is apparent from this research, particularly as the use of the CLA has demonstrated that landholders and CMA staff have different perceptions about the same issues, as already mentioned.

Interestingly, the current NRM model in Australia has been particularly outcomes focused, with little attention paid to issues surrounding process. As this research demonstrates, there are mixed opinions as to the effectiveness of the CMA programs and their attempts of engagement and achieving sustainable agricultural and environmental change. The research also demonstrates that often the blame has been directed towards farmers for not changing their practices. This view has also been supported by research conducted by Cocklin et al. (2007), where it was reported that there is a perception by farmers of negative public attitudes towards farming practices.

In addition, Cocklin et al. (2007) note that "effective and efficient implementation of policy and management strategies by government relies, in part, on an understanding of what farmers regard as the key issues that influence their production and resource use decisions, how they are responding to these issues, their disposition towards various policy and management tools and their past experience in working with government agencies" (p. 989). This research component has led to an in-depth understanding of landholder and CMA staff perceptions about the communities in which they live and about how sustainable land management practice fits into this. This research demonstrates that, not only do landholders play an important role, but so do CMA staff, government, scientists and all agriculturally related people. It suggests the need for a collective approach to address NRM issues as opposed to the more traditional method of farmer intervention.

In the last decade there has been growing interest in what constitutes a 'stakeholder' (Friedman & Miles, 2002). Awareness of the relative ambiguity of the term has prompted effort to consider stakeholder theory (Friedman & Miles, 2002) and methods for stakeholder analysis (Reed, 2008; Reed et al., 2009). In a bid to attend to such uncertainties, Reed (2009) flags the importance in ensuring "a clear understanding of the research question, so that the boundaries of the social and ecological system can be established" (p.2423).

Here we propose extending the definition of participant/participation from more traditional conceptualisations of community stakeholders (e.g. farmers) to include CMAs, researchers, and the broader community. Usually, stakeholders are identified by researchers or the governing body. Doing so immediately creates a differentiation between facilitator and participant, and similarly raises implications regarding power and role. It is important to ensure that a particular type of knowledge or stakeholder group is not favoured and that any power relations that may be affecting processes and outcomes are recognised (Keen & Mahanty, 2006). Therefore, the aim of reconceptualising 'the stakeholder' to include CMAs is to improve the NRM engagement process and to empower both groups involved. It recognises that both 'authority' and 'community' have interests, capacities, restraints and stakes. It additionally recognises that agricultural issues are embedded in broader rural community issues and social contexts. The need for integration is supported by Parker et al. (2002), where it is noted that in order to address environmental issues, there needs to be an

integration of science, knowledge and understandings of the future and that “we must invest time and ability to create a shared pool of knowledge and understanding” (p.216).

### **5.2.3. Future focus on support and engagement process**

It was noted during the CMA workshops that “people might realise that they need to change but they also need ongoing support to maintain change. They may be progressive but they still need someone to go to with questions”. This statement identifies a support role that the CMAs could fulfil, but currently this role is not widely known. If such a role is to be actively promoted by the CMA, it needs to be confidently communicated to the community in which the CMAs operate. Therefore, what *can* change are the relationships between farmers and CMA, through a participatory process, which is based on bringing together the collective values and needs, such as support. In an effective ongoing participation process, it will be possible to identify collective aims, aspirations, and catchment targets. This sees the CMA and researchers becoming participants on par with landholders, so worldviews can be shared to create a sound process whereby change strategies can occur. As noted by Buchy & Race (2001) “participation is essentially about building partnerships and implies that all the partners take their share of the responsibility” (p.297). As part of this participation partnership, it is essential that the CMAs be cautious so as not to choose processes that will exclude groups in any way (Buchy & Race, 2001). This means that relationship building needs to be with all types of landholders (young, old, male, female, hobby farms, large scale, multiple properties etc) and needs to encourage all these groups to mix so that there are opportunities to learn and share information. In addition, CMAs will need to recognise that change does not have to occur quickly and absolutely.

If the CMA approach becomes equally process driven, as opposed to outcome driven, relationships will be improved, roles will become more clearly defined and some of the existing power differences will be dissolved. Our thoughts on the current NRM governance model in Australia align with those stated by Wallington & Lawrence (2008), in that the effectiveness of the current NRM structure has been “defined in terms of upward accountability to Federal and State governments on the achievement of short term results, an approach which is undermining the responsiveness of regional bodies to wider community concerns” (p.278). With this in mind, and an understanding that changes to the federal funding regime and NRM governance structure may take many years, we propose that CMAs, researchers, landholders and local communities can begin to become responsive to community concerns as a collective. This is supported by Thomsen (2008), where it is noted that “the complexity of sustainability issues demands that we improve our understanding of ourselves, each other and the science that underpins the stewardship of socio-ecological systems so that we might conduct ourselves appropriately as individuals and collectively” (p.222). It appears that the current model has been focussing on the individual and now may benefit from shifting the focus out to incorporate collective aims and aspirations.

## 6. REFLECTIONS ON THE RESEARCH PROCESS

As a result of this component of research, there have been some interesting findings and discussion surrounding how landholders and CMA staff/scientists conceptualise change, the issues in their communities and some possibilities for overcoming existing barriers. These findings support the original aims, which set out to examine issues (including those that may not be openly discussed), to investigate underlying causes and to identify social meanings associated with sustainable practices. However, we believe that the benefits from the research are not just in the findings and discussion, but also from the process that was used to elicit the information. Originally it was anticipated that the research outcomes would enhance researcher and participant understanding, identify potential areas for change and identify messages that could be used to overcome stated barriers. As discussed, potential areas for change and ways to overcome barriers have been identified. This section addresses the first anticipated research outcome, by discussing the importance of this research process in enhancing understanding and how such a process can be adopted as a way to overcome current barriers to achieving sustainable change.

A common issue that occurs when conducting any kind of research is the lack of mutual understanding between scientists and community (Carr & Wilkinson, 2005). Often there is some negativity surrounding the idea of research, as in the past there has been a legacy of scientists entering a community and dominating the agenda. The CLA workshops took a different approach and from the start it was made clear that the discussion was to be about the participants. Initially some groups were surprised by this approach, for example during one workshop it was noted “you were sneaky in not letting us know what was really going on today”. When queried about the confusion, participants noted that when attending previous government/science workshops, it had been about government representatives/scientists telling landholders what they should be doing. Therefore, once the participants understood the aims, the workshops allowed for positive interactions between the research team and the participants. This history of scientists dominating workshop discussions may have exacerbated feelings of landholder inadequacy that surfaced during some of the workshops. However, it was noted that this was beginning to change and there had been recent evidence from participants of landholder knowledge being recognised and utilised.

Using the CLA to guide the workshop questioning and analysis meant that the project team were able to gain further insight into the issues facing rural communities. As it has been discussed, many of the issues that surfaced appeared to be out of individual landholder control, such as short term funding cycles, poor commodity prices and rain (or lack thereof). Therefore, it was hoped during the workshops that the questioning may be able to move on so participants could begin to think about local solutions for issues they do have control over. As mentioned earlier, often this was not the right time to be thinking about solutions, as individuals may have been in mixed phases of pre-contemplation and contemplation for change, therefore the discussion would not focus on discovering solutions for change. Some participants may even require time to reflect on the discussions in their own time, which emphasises that engagement and change takes time.

As a result, we feel it is important that CMAs and landholders have ongoing discussions so that the initial issue focused “vent” can take place, then issues can be worked through after all perspectives have been shared. As suggested in the above recommendations, a participatory process where both landholders and CMAs identify issues and goals together will lead to more ownership and control over solutions. One instance where this could be achieved is for CMAs to hold workshops such as these, or encourage informal engagement opportunities, particularly in areas where they feel they have had little traction and community engagement.

An enhanced CMA and community engagement structure, perhaps through workshops, will provide informal engagement opportunities that will also help improve communication of the CMA role to landholder, build trust and establish what it is that the CMA and landholders want to achieve. Recommendations from previous PUTTI research (Bates et al., 2008) have suggested that CMAs need to improve their communication with landholders about incentive funding and to tailor programs to suit a range of landholder intentions and skills. By spending time with a range of landholders (from different catchment areas and at different stages of change) the CMA staff will be able to identify a broader range of landholder motivations and skills, which will help to ensure that information and opportunities are made available to suit all stages of farm development and lifestyle. Landholders appreciate one on one time with all CMA staff and by having some younger, less experienced CMA staff involved may help to strengthen ties and build necessary relationships.

A final reflection is the social benefits the process provides, particularly to the landholders. Rural decline and the changing social fabric of rural communities are frequently raised issues. When observing farmer interactions during the workshops, it is obvious that they are enjoying the 'catch up' time and are often still talking to each other long after the workshop has finished. If nothing more, workshops and informal engagement opportunities may provide an excuse for a group of landholders to get together (with CMA staff and other community members), swap stories and have a slice of the social interaction which is reportedly disappearing. This could be where social learning opportunities emerge and the CMAs build confidence to further define themselves as a support body that is just as involved in the NRM problems, solutions and actions as landholders.

## 7. CONCLUSIONS

In light of the workshop findings, it is apparent that NRM in Australia consists of a complex arrangement of stakeholders attempting to address multifaceted issues. These research findings highlight a number of issues that have been discussed by landholders and CMA staff. Apparent from these discussions has been the similarities and differences in the conceptualisation of these issues for both these groups. In addition, it is hoped that these findings will aid in the understanding of how some of the issues impact on rural communities and why sectors of the community may appear to be reluctant to change. Whilst we recognise that a number of higher level issues are impacting on the ultimate success of current NRM arrangements, the research highlights certain areas where issues can begin to be addressed at the local and catchment scale. Perhaps one of the major findings to result from this investigation is the need for mutual understanding between those involved, such as landholders and CMAs, to help identify collective aims for catchment and community change.

One suggestion to begin fostering mutual understanding is to create a new participatory process to bring together CMAs, landholders and other 'stakeholders'. Increased dialogue between landholders and CMAs will firstly allow for understanding of different worldviews and perceptions of issues, and then secondly to begin contemplating achievable shared and individual outcomes. Often in the research it has appeared that both Landholders and CMAs share similar goals yet have not been able to effectively communicate or work to create desirable change. It is also apparent that landholder visions for the future are inherently tied up with the local communities in which they live, therefore including other community members in these dialogues will allow for shared ideas and collective aims.

It is possible from this research to develop a set of specific recommendations to help guide the CMAs through future participatory processes. However, given that this research is one component of the broader PUTTI project it is important that the other research components are included in the development of such recommendations. Therefore the final summary report (as detailed in the executive summary) will develop these by drawing on all project components. Ways to pursue future participatory processes are already evident from the workshop discussions, such as suggestions for community get togethers over "beers and bbqs" or at local sporting events. A continuation of these discussions could lead to further suggestions as to how NRM goals can be aligned with community values and goals. It would be helpful for CMAs to prioritise the discussion of what these findings mean for current and future activities, what avenues they could pursue and how to go about it. These discussions may help CMAs to feel more in control over the task they have been given and to begin seeing themselves as part of the problem and solution. In saying this, it is also recognised that CMAs are bounded by a set of external circumstances and therefore it is important to ensure that the local communities and landholders are aware of the constraints and what can be achieved. Overall, this research has demonstrated that it is important to share knowledge and experience as a way to achieve desired change, particularly when the future of NRM in Australia is uncertain.

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## 9. APPENDIX A

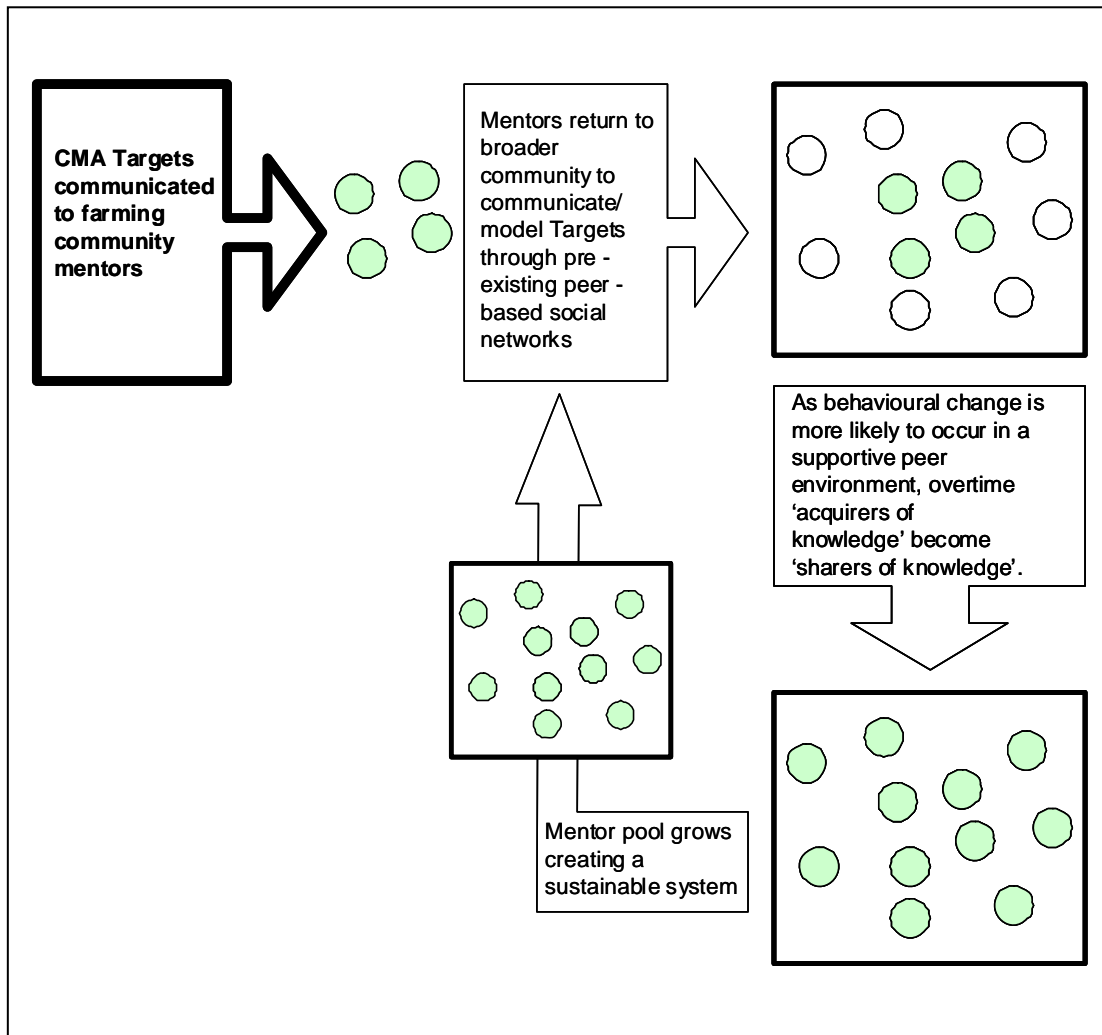


Figure 2: Cooperative Learning Model

## 10. APPENDIX B

### PUTTI: Landscapes & Livelihoods Workshop Feedback Summaries

#### Central West CMA Staff Workshop Summary (Central West)

##### *Summary*

The workshop was well attended by CMA staff and associates, some of whom also worked or owned farming properties. The discussions were vibrant and enthusiastic, and while realistic in acknowledging the challenges of the region, were positive about the future of the community and local farming. The following is a discussion of some of the main themes that arose during the workshop.

##### *Perceptions of farming*

Participants believed that perceptions of farming and farmers were changing. Farming is seen to be viewed as either a business or a lifestyle. For those who view farming as a lifestyle, there are factors and motivators that keep people on the farm, in spite of financial ups and downs. Participants believed that city perceptions have changed from seeing farmers as battlers and producers of essential commodities, to now looking at farmers as vandals.

Farmers are seen as much less powerful than in previous times. Participants noted that farmers need a better forum or process to engage in economic and political discussions. Globalisation has contributed to this, and global economics fail to acknowledge motivations and non-financial factors which might influence farmers and farming.

Participants identified a loss of personal control by farmers, noting that they are not price setters, but price takers and their lives are affected by factors well outside their control. Decision making was also seen as removed from the farmers, with many decisions not locally made, but in Sydney, Canberra or overseas.

##### *Issues in the community and changing community structure*

Along with the loss in personal power and political voice, participants noted a decrease in population and the labour market. Some towns were seen as dying, although other major towns like Orange and Mudgee were noted as growing, partly due to an influx of city people buying hobby farms or investment properties.

The issue of employment difficulty was raised, and linked to decreases in commodity prices. People were seen to be leaving towns to look for jobs in mining or in the cities. Young people are leaving to go to school and university and are not coming back. Where there is work available, there are fewer people to fill positions, and the nature of work has changed, for example the increasing sophistication of machinery, so that in some cases people are unqualified to perform the available tasks.

Labour shortages were also seen as impacting on sectors relying on volunteers, a vital part of country life. There is a lack of human resources to maintain community activities.

Overall, the nature of rural communities was identified as changing. Uncertainty within communities is increasing in light of environmental and economic impacts, and this is all in the absence of the 'knock on' effects of the drought, which are yet to be felt. It was thought that continued emotional impacts were likely to be a result of the prolonged drought.

Participants noted that gender had a real impact on communication in the communities, with some farmers for example being less inclined to discuss business with a young female bank manager, this was seen in part as an effect of an older generation. Conversely, it was noted that being a woman can sometimes help, with networks between female farmers and wives noted.

### ***Sustainability***

Sustainability is viewed as a concept surrounded by confusion. Participants believed that there is a substantial gap between agricultural research and the community. This gap was seen as exacerbated by a lack of translators or mediators to connect the two groups. Agricultural technology (i.e. machinery) is seen as evolving quicker than on ground knowledge can adapt. Changes in machinery have led to a lack of available support and advice, with machinery salesmen, agronomists and other farmers having insufficient knowledge of these new, conceptually different machines.

CMAAs and farmers have different concepts of sustainability. CMAAs are seen to believe that economic sustainability is related to environmental sustainability while farmers often see one as a trade off for the other.

Changes in what is considered best management practice were also raised. Particularly, practices previously viewed as good are no longer seen as such. Questions as to whether current practices will be looked upon poorly in the future were raised. "It's a problem because all those practices in the past were 'best practice'. Are we doing the same thing now and calling it 'land stewardship' Half the problems of today were caused by practices of the past. We were paid to knock trees down."

Participants believed sustainability to be often misunderstood, and that many farmers seem to adopt practices without understanding why. This can lead to ineffective practice and also more widely to the idea that practices don't work.

Money was seen as both a facilitator and a barrier to change.

There was recognition that there needs to be a change in the way sustainability is viewed. "We have to stop dominating nature; we have to be part of it."

"... one farmer... said something insightful 'Traditional farmers went to war every day, to kill weeds and pests, to manipulate the environment with things that shouldn't be there. We need to step back and see what nature does (wants from us) and then run with it' more sustainable for a longer period of time."

### ***Innovation, changing practices and stigma***

Participants noted a stigma associated with changing practices and adoption of new methods. New practices are looked upon negatively, with the language of sustainability poorly received. For example terms such as stewardship and biodiversity are viewed as "greenie" terms. Participants noted that there are real social pressures around not being seen to be different, or to even use language that is considered "green". There was also indication of a "tall poppy" type process operating in communities, with those seen as successful, or making a difference in the community ostracised.

Social pressures not to adopt new practices were identified as operating in the community. Where new techniques or strategies are adopted they tend to be heavily scrutinised. Farmers were seen as necessarily conservative and expecting others to be likewise.

Participants noted that often the changing of current practices was seen as an admission that there was something wrong with the way things had been done previously. This increases the pressure to not change practices, and change is implicitly associated with failure.

Conversely, it was also noted that successful farmers are viewed as optimistic, allowing them adoption of new practices.

Processes used to inform and promote change were questioned by some in the group, with a need for more one on one processes advocated. The CMA was seen as being in favour of group processes, but it was acknowledged that these were not always the best method.

Incorrect, or half adoption of techniques was seen as a challenge to changing practices. The use of disc machinery was given as an example, with some farmers adopting disc machinery, without fully understanding how it works, or the need to prepare the soil before use. It was noted that if a technique is misapplied and is seen to fail, then others are less likely to adopt that practice.

Different ways of approaching farming and change were acknowledged, with some discussion, for example around the formation of farming co-operatives. Coops identified in the community were seen as beneficial in increasing productivity and available time, however issues such as reliance on group dynamics were noted. For example, one coop failed when one of the group was married.

### ***Land Stewardship***

Farmers were perceived to have an interest in land stewardship in some cases because to admit otherwise would be to acknowledge defeat. It was suggested that current ideas about good land stewardship simply reflected that land condition was better relative to what it had been in the past when practices were more damaging. The challenges of promoting today's best practice given that many of the practices advocated in the past have since been found to be problematic was discussed. The tension between the adoption of conservation practices and the perception that this would be viewed as "too left, too green" and "smack of government schemes that pay people to do nothing" was acknowledged as a further barrier to change in farming practice. While some outstanding examples of running a viable business while adopting an ecological approach were given, this was far from the norm.

## ***Footprints Workshop Summary (Central West - Cudgegong sub-catchment)***

### ***Summary***

The Footprints Landscapes and Livelihoods' Workshop was positive and vibrant. The joys associated with farming were recognised and valued while there was also reflection on some of the challenges associated with living and working in an agricultural community. Despite recognising these challenges, workshop participants appeared to meet these with a collective optimism, for instance, challenging the notion of sustainability and offering an alternative which emphasises a process and lifestyle as opposed to a sustainable endpoint which was seen as limiting. The following is a discussion of some of the main themes that arose during discussion.

### ***Background on participants and the local community***

Participants were involved in a mixture of farming enterprises including: sheep, cattle, fat lamb production, dryland grazing and dryland cropping, which varied in size from large scale to hobby farms. The area surrounding Goolma (the town where the workshop was held) was regarded as being relatively wealthy and despite ups and downs it was appearing to be "doing ok". Several factors were raised that contribute to a resilient and socially secure community, such as:

- The presence of youth was seen as important for bringing diversity to the communities. Young people appeared to be returning to the community.
- A strong sense of community was valued and compared to larger centres which were seen at times as being less welcoming.
- Active local sporting associations, e.g. the tennis and cricket clubs although the Goolma pub was no longer recognised as a social hub.
- A favourable location to other towns and cities (e.g. Mudgee, Wellington and Dubbo).
- Favourable climate, undulating landscape and location for rainfall (when it came) were characteristics appreciated by the workshop participants.
- Localised social services (despite rural centres taking away from the smaller towns).
- Funding and financial support to aid in changes to agricultural practices.

Workshop participants also noted that a growing awareness of environmental issues was shaping farm decision making. Farmers in general were less production driven and more inclined to cut input costs. When asked about some of the changes that had been implemented on their properties, many noted that they appeared to be working.

### ***Connection with the Rural Landscape***

When discussing what farming means to farmers, a strong connection to the land was evident through a love of farming, the land and the whole lifestyle, even if the financial rewards were few and far between. The notion of family history was apparent and exemplified by comments such as "it's (farming) is in our blood". The rural life in general was regarded as the good life but many noted that they discouraged their children from returning to the land.

Numerous comments were made about the undervaluing of rural Australia. However, the ongoing need for farmers was evident as there will always be a need for food. It was felt that urban perceptions of rural communities were skewed or non-existent and that agricultural communities were valued more in other countries than in Australia. It was felt that most politicians and the popular elite were city-centric.

### ***Some of the issues facing farming communities***

While participants enjoyed living and working in the communities, some challenges related to issues that were fundamentally out of the control of farmers were also raised. These included:

- Financial pressures such as increased costs of fertiliser, fencing, wages, fuel, food, interest rates
- Global market pressures such as price variation particularly for wool
- Supermarkets setting prices for produce
- Access to localised medical facilities
- Poor condition of roads linking to the major towns
- Funding and financial support as a mechanism for providing the initial step towards agricultural change. It was noted that many farmers now wanted to do the right thing, but required financial assistance to begin the change process.

### ***Thoughts on the CMA and government***

The CMA was commended for its hard work and provision of opportunities to improve land management. It was also noted and appreciated by workshop participants, that the CMA were starting to take more notice of farmers' opinions and local knowledge. Some suggestions were made as to how CMA and government programs could better fit farmer needs, for instance;

- Considerations regarding time constraints: Short time frames to spend funding on ground did not always fit farmers' specific situations. Examples were given of people taking their time to try and find the best project or the best piece of machinery for their land, only to be told that the funding had gone before they could decide. It was felt that the pressure was political and tended not to fit with long term goals on the farm.
- Considerations regarding farm labour: CMA projects were noted to be especially difficult to work on and complete when only one member of the house was actively engaged with farm activities as the other was earning off farm income.
- Greater flexibility in projects
- Awareness that projects that focus on environmental issues may not be beneficial to the farmer due to finances, time restraints and the specific type of funding available.

### ***Planning and information***

The group also expressed strong opposition to the idea of traditional planning being applied to an agricultural setting. The concepts of planning and budgeting were deemed unsuitable for farmers by the participants, given the fluctuation of income from year to year, yet this was something that they were required to spend their time doing. It was noted that farmers can plan but if it does not rain then the plans often do not come to fruition. Comments were also made about farmers making the most out of the good years and accepting the bad which also confirmed that planning had little place.

Farmers present at the workshop also expressed that they were being overloaded with often conflicting information. There were also feelings of distrust with information sources as many felt that people were trying to push their own agendas when giving farmers information. Confusion was also widespread over the "get big or get out" debate as small operations were reported to be doing well in some cases it was the larger businesses having to downsize and lay off staff.

### ***Sustainability?***

The need to address land management issues was apparent within the group, particularly as they were all already involved in projects aimed at improving the landscape however the word sustainability was not one that the group connected with. In one instance the word sustainability was associated with the idea of being on a life support system. The word regenerative was preferred. Collective notions were common as it was felt that it was time to work together with the bigger picture in sight. It was noted that the sense of responsibility had heightened when individuals had realised that what they were doing on their individual properties had downstream impacts. In addition it was thought that having neighbours whose ideals did not fit with yours could be an issue.

### ***The future...***

Opportunities for the future were expressed mainly in terms of what would be achievable in the agricultural setting. It was thought that farmers needed to keep on going with what they were currently doing but needed to do it better. This also prompted discussion about what the landscape would look like in the future and it was noted that it would not be possible to lock the land away and expect it to go back to its natural state. There was realisation that some of the ways of the past were wrong and that now was the time to act and improve the land. There were also empathetic comments concerning the soldier settlements of the past and that the clearing of the land was not their fault either – that it was just something they had to do. Concern over changing societal preferences were also raised as many felt that the youth of today did not appreciate high quality products and that was leading to more of a throw away society.

## **Gumble Creek Workshop Summary (Lachlan)**

### ***Summary***

Participants spoke often about the issues that were impacting upon them as farmers and the wider rural community. Change appeared to be occurring in many facets of their life and much of this was stated to be out of participants control such as the weather, commodity prices and government trading schemes. The CMA was praised for its work in the Gumble area and it was hoped that this would continue into the future. The discussion also focussed on what it meant to be a farmer and the importance of learning from other farmers, for example during organised farm visits or by “looking over the fence”.

### ***Farming practices and farm management***

Participants had a mixture of agricultural experiences and backgrounds. The group included generational farmers, past members of agricultural societies, some ready for retirement and others with family members working as agronomists. Despite this wealth of experience it was noted that there are still a lot of unknowns associated with everyday land management, for example “we don’t know how much seed is banked in the soil”.

Many issues associated with agricultural practices were noted and included:

- enterprise changes, such as moving from wool to cattle
- intensive work required for Merino wool
- high input costs, particularly with lambs
- weeds
- erosion
- unknown long term impacts of using chemicals
- high taxes
- corporations increasing costs, particularly fertiliser companies
- litigation.

Changes to farming practices were also discussed and it was thought that many farmers were changing because they had to, for example adopting stubble retention instead of original burning routines. There was mention of the need to adopt practices that were prevalent 100km away due to the changing conditions. The discussion also demonstrated an understanding of hydrological systems, for example “chemicals also impact on groundwater supplies”. The intricacies of the landscape such as the need to harvest and sow in different directions depending on the topography were also discussed. Participants noted the external pressures on farmers to change certain practices such as mulesing but stated they would not stop despite it being “the worst job on the farm” as it was necessary for good quality merino sheep and fat lambs. Interestingly it was noted that “most farmers look after their sheep better than some people look after their kids”.

The success of the farm was determined by many things, including having regular off farm income and access to a good agronomist. Increased costs were thought to be the main barrier to success. Other areas outside the catchment were noted to be doing well due to good quality soil, moisture retention and having access to the latest machinery. The years of little reward meant that many farmers were actively discouraging their children to return to the farm, for example “I can’t see our sons putting up with such hard work for little reward, they will sell it”. The issue of farm succession and superannuation being tied up in the farm presented a difficult situation. It was also noted that many farmers needed to “work more for less money in the bank” and age was impacting upon their enthusiasm. Therefore the future of farming was regarded as another unknown.

### ***Farmer identity***

Much of the discussion circulated around what it meant to be a farmer. It was noted that farmer identity was shaped by a love of the land, being your own boss and having a specialised skill set. This skill set also led to feelings of inadequacy as farmers felt they were not qualified to do or be anything else as they were “locked into farming”. Successful farmers were thought to be those with an additional skill or those who had learnt from others in addition to their fathers. It was thought that farmers were widely regarded as whingers and this was an image they wanted to break away from, e.g. “I don’t want to sound like we are complaining all the time. Farmers are renowned for being whingers”.

### ***Thoughts on the local rural community***

The local rural community was thought to be changing in many ways. These changes included:

- declining population, particularly at the local schools
- fewer sporting teams
- limited employment in smaller towns (e.g. “Cudal only has the shire and cops as employment”)
- impact of declining agricultural sector on local towns (e.g. “When we have money we spend it. We employ workers and spend in town and this impacts the whole community – schools, grocery store”)
- fewer sheep loading facilities
- increased fees for the rural lands protection board.

Positive changes were also recognised such as the return of people to rural service centres and the increase in land prices.

### ***The role of government and the CMA on agriculture***

The CMA was highly regarded for helping out the Gumble area. The CMA was seen as a place to go to for advice and was thought to be appealing to both good and not so good land managers. It was thought that the “money was where the mouth is” and that certain CMA staff had greatly influenced farmers in the area in a positive way. Practice changes such as stubble retention, seeding programs and soil field days had been made easier by CMA help and change was “not to feel good but because we have to do it”. Attending field days was important for gaining information but in the end farmers had to draw their own conclusions as to what would work for them. Farm visits run by the CMA were thought to be highly effective, for example:

“To sit around the table talking is good but going out to see it is better and we don’t do nowhere near enough of it.”

Therefore farm tours and hands on learning were seen as an important part of the solution to achieving positive agricultural change.

Politics were also thought to play a large role in agriculture. In the past it was thought that the government had spoilt farmers but there was recognition that this had since changed. Current government was thought to have no consideration for farmers when making new policies, such as the carbon trading scheme which would present another tax for farmers. The lack of recognition of rural areas evoked quite strong feelings, for example: “we should be subsidised. Instead we get told lies and get cheated”. Participants discussed the need for a political party to truly represent farmers and people living on the “other side of the sandstone curtain”. The lack of understanding about rural areas by city folk was also thought to extend beyond politics.

### ***Information and learning***

The plethora of information available to farmers was also discussed during the workshop. Field days were noted as one such source, for example:

“There are a lot of things and it can be like a child in a sweet shop. Go to the field day and think it would be nice to try and it is all financial constraints stopping us”.

Interestingly it was noted that the information presented at field days often included things that had been around in previous generations but had since been forgotten. Participants also expressed feelings of scepticism towards some trial results demonstrated at field days, but agreed that improved technologies would help farming.

During the discussion there was recognition that despite generational knowledge there is still the desire to change and recognition that there needs to be change by middle aged and younger farmers. It was noted that the knowledge and learning that had been shaped over a long time meant that change, whilst recognised as necessary, would be difficult.

The ways in which farmers learn was an important focus of the discussion and it was recognised as important to understand for change to occur. Learning from other farmers was seen as very important. It was thought that it was “easier to manage the farm next door than your own” and that some neighbours were a source of inspiration.

### ***Control over lifestyle and issues***

Throughout the discussion it was noted that a lot of issues facing farmers were things they had no control over. Commodity prices were one such issue where participants felt disadvantaged and it was commonly noted that farmers are “price takers, not price makers”. It was hoped that in the future farmers would be able to forward sell on the markets with safeguards. However, it was also noted that in the past farmers had been given advice on how to stop price wars but they had not acted on the advice, therefore limiting the rate of change. It was thought that farmers around Australia would never be unified as some would always be forced to sell at a low price out of desperation.

It was also noted that farmers lacked control over many things needed to make farming successful, such as the weather, for example: “you get rain, a start, then we don’t know when it will happen again”. Participants also expressed frustration towards having no control over changes taking place, particularly in regard to litigation and not being able to do the things they used to do.

### ***The future...***

When discussing the future it was at times difficult for participants to be positive as the past was viewed as better due to low interest rates and reliable rainfall. The future was full of many unknowns which farmers felt they had little control over, therefore making it difficult to be optimistic. It was hoped that the money earned in regional Australia, from farming and mining, would remain in the area and be spent locally. It was hoped that the Gumble area would continue to all work together to achieve positive agricultural change and perhaps some of the farmers could “all chip in and buy a cutter”. Learning from other farmers was thought to be the best solution to achieving change, whether from looking over the fence or through more formal farm visits. It was decided that a variety of programs would be most beneficial needed to achieve change and to appeal to all.

## **Humbug Workshop Summary (Lachlan – Humbug sub-catchment)**

### ***Summary***

The Humbug Workshop was highly informative and gave great insight into the experiences and opportunities for farming in the region. While the workshop considered some of the pressures associated with current farming practices in the region, there was also emphasis on dispelling some of the misconceptions regarding farming practices and also regarding the reality of rural communities more generally. Particular reference concerned possible misperceptions of people who live in the city who were thought by participants to have a poor understanding of the realities of living and working in rural areas. Workshop discussion also considered changes to the local community over the years and how external pressures had contributed to this change, and the future of farming and the region with emphasis on the value that people place in their community.

### ***Farming Practices***

General farming practices typical to the region were discussed during the workshop. Some of the practices were seen to be particularly important given drought conditions. There was recognition that challenges such as a lack of feed for stock, sometimes make it difficult to adopt better farming practice, for instance;

- Stubble retention
- Direct drilling
- Mulching
- Spraying fallow
- Use of knife points to help water to soak into soil
- Retaining ground cover
- Preventing erosion.

It was recognised that farming needs to be flexible and responsive to the conditions at hand and the variability of soil types in different paddocks. Furthermore, adaptation was seen as a skill.

The source of information used by farmers to inform their practices was discussed. These included;

- older more experienced farmers for instance their fathers
- trusted agronomists
- talking directly with neighbours and also through observing their activities
- friends
- the internet.

Being a farmer was considered a continual learning process, which drew on multiple sources and experiences daily.

### ***Experience of being a farmer***

The experience of being a farmer was also discussed during the workshop. A theme throughout the discussion related to changing some of the misperceptions regarding farming. While it was recognised as being hard work, a central aspect of the farming experience was that it was also a lifestyle choice and something that you are born into. It was acknowledged that for farmers farming is,

“in their blood, its home, a lot of us are born farmers”.

The farm, while generating an income was also recognised as the family home and therefore different from other ways of considering a business enterprise. It was also accepted that being your own boss was favourable and that lifestyle was the first priority. Farming was

seen as having a different and additional skill set to other occupations, relying on responsiveness to weather, climate and conditions which are not necessarily recognised in other industries but critical to farming.

There was also discussion regarding a growing divide between city people and country people and it was raised that farmers are poorly represented by the media. Some of the messages that have been communicated through newspapers to city people poorly reflect the reality of farmers' circumstances, and have the capacity to be damaging to farming communities livelihoods. Several misconceptions about food production were given as examples, (e.g. "kids in the city think that milk comes from a carton and meat from the butcher") and concern was expressed about whether city people understood food security issues. It was felt that fewer city people these days had relatives in the country and that this might contribute to misconceptions.

### ***External Pressures***

The complexity of agricultural issues was acknowledged by participants and several pressures were raised during discussion which included;

- Ongoing drought
- Employment shortages
- Cost of diesel, fertiliser
- Local services closing
- Frequency of youth leaving the area.

There was optimism that the drought would break and that in the meantime current farmers were happy to persist with farming practices best they could. During the more difficult times, it was felt that the 'less-good' farmers would be pushed out of agriculture. Furthermore, when conditions improved it was anticipated that young people would return to the area as more opportunities presented themselves.

During drought times, there was a sense that there was pressure to participate in particular farming practices that were thought to be environmentally sustainable, for instance,

"lead to believe that changes in farming methods etc are the way forward not convinced even through practicing this, that this is the best way forward...only changing because told to believe"

There was also a sense that farmers are being told what to do on their properties, including from people outside of farming. This was perceived as highly unfavourable for example,

"people outside the game talk about sustainable agriculture but to me it is those people who want it to be sustainable for them not for us",

And,

"people just sit back and say this is what you should do".

The pressure to be sustainable was considered and there was the sense that there were different perceptions as to what it meant to be sustainable. Further, that the expectation to be sustainable cannot be generalised, rather sustainable farming is highly dependent on the conditions (e.g. soil types, presence of stock). Given the trying climatic and market conditions, it was felt,

"that we are still here means that it is sustainable".

The discussion captured local farming expertise, and that perhaps there is a need to consider the context of farming conditions more, particularly as the current focus was on dealing with the additional impacts and pressures associated with drought. Participants felt that as current farming conditions are abnormal their farming efforts should be considered in light of these additional pressures.

### ***Community Change***

Community change was also a topic of discussion during the workshop, with the drivers of change associated with the impacts of drought and economic issues. Most notable was the discussion regarding the aging of the farming community. The aging of farmers and the apparent absence of the next generation of farmers was seen to be due in part to the harsh drought and market conditions and the recognition by younger people in the community that perhaps there are other employment and social opportunities outside of regional communities. The desire for young people to have options was noted even if it meant that they had to leave the region while there was ongoing concern for those younger farmers who remained,

“life is becoming lonely for young people, we all had support which is not there anymore”,

And,

“without young people there is not the same social structure... there were twice as many farmers when we grew up. All had mates in the area farming, but it’s not the case anymore”.

Furthermore, it was recognised that younger farmers, unlike the previous generation currently farming, may not have experienced the joys of farming associated with good seasons outside of drought years. It was also acknowledged that in the future, young people that develop an alternate trade were would miss the opportunity to learn the technical and experiential skills learnt on the farm. This lack of experience would be of concern if they subsequently decided to return to the farm. The rise of broader community issues such as pressure on local businesses and service closures were evident as young people left the region and farmers sold up.

Despite such concerns, generally there was a degree of optimism that young people would return to the region once the drought breaks, conditions improve and opportunities for them return. The emphasis of the conversation was hoping for the best opportunity for young people accompanied with the belief that they would return to the land, for instance,

“want kids to have every option which is why happy for them to leave, confident that they would come back when the drought breaks”.

### ***The Future***

Discussion regarding the future tended to be framed in terms of what the physical landscape and the community would be like when the drought breaks. This is significant, highlighting optimism in the community, while also acknowledging that there is an understanding of the natural environment, including the climate, as undergoing natural cycles. There were several topics raised which included;

- The focus on food production was questioned with growing presence of plantations or non-food producing industries
- The climate was also discussed, in particular, there was scepticism as to whether the drought is part of a cycle of climate variability or representative of longer term change, with reflection on similar climatic cycles having occurred decades earlier

- Recognition that the get big or get out trend that had occurred in the region has meant that there are fewer people in the community which has placed pressure on local businesses and services
- That there is increasing need for an off-farm income
- Potential emergence of corporate farming.

Discussion also highlighted the importance of the local community, irrespective of the range of potential futures for the region. The discussion captured the strong sense of community, particularly those who are actively involved in sporting clubs such as football and cricket and the importance of the pub as a valued social meeting point.

## **Lachlan CMA Staff Workshop Summary (Lachlan Catchment)**

### ***Summary***

Participants discussed many of the issues that were pertinent to farmers and also those that were of importance to the CMA. Participants were from varied backgrounds, for example some worked for the CMA in addition to farming, which added to the diversity of opinion evident throughout the discussion. Definitions of sustainability generated healthy debate amongst participants and there was recognition of both the barriers and drivers of agricultural change in the community. It was thought that an important role for the CMA would be to identify and work with the strengths in the community in order to overcome differences of opinion and barriers to change.

### ***Farming practices and issues***

Many issues related to land management practice were discussed amongst participants. Overall farming was thought to be risky. The drought was noted as a big issue and if prolonged it would continue to make things difficult for farmers. The family farm was noted as a “dying entity” and this was recognised as difficult for farmers to deal with, particularly as many were 3<sup>rd</sup>/4<sup>th</sup> generation farmers and did not want to be seen as the ones that failed. Succession issues were said to be apparent with superannuation locked into the farm and many landholders now encouraging children to get an off farm education. On one hand “it (succession) is recognised as one form of child abuse, getting your kids to manage the farm” but in addition it was also noted that the farm is a great place to bring up children, even if they are not going to return to it.

Farming was seen as challenging and requiring a specialised skill set that is often regarded as non-transferable and therefore reducing farmer confidence in looking for work elsewhere. The importance of off farm income was recognised, for example “you need off farm income to subsidise your farm habit”. It was noted that “cockies like having control over their destiny” but currently many things were impacting on this, including continuation of the drought, changing commodity prices, increasing input costs, lack of time and increasing corporatisation of farms. Despite the difficulties, the love of the land was recognised as a reason for farmers to stay.

### ***Rural community change***

The rural communities and towns throughout the catchment area were all said to be experiencing some type of change. Some of the changes mentioned included:

- declining rural population
- ageing population
- increased distance to travel for community facilities
- difficulty in getting labour/contractors for work.

There was recognition that farmers now had less money to spend in town and this was having flow on effects causing local businesses to fail. This was noted as a particularly difficult change as farmers had traditionally played such a large role in the rural social structure. Recognising the past was seen as important and it was noted that listening to old farmer stories or looking at past photos remained an important link to the “good old days”.

Despite some of the changes that were occurring, many positive attributes of the community were highlighted during the discussion. It was noted that there were various people within the local communities that were respected and would “lead the way”. Having a broad knowledge base, being able to recognise the “big picture” and being an open communicator were recognised as good qualities for community leaders. Generous and hard working community members were recognised and it was thought that rural NSW continued to provide a healthy environment in which to raise a family.

### ***City/Country divide***

A divide between city and rural areas was noted, particularly in regard to knowledge of agricultural practices. For example, “people know that cockies grow grain but they are not aware of the day to day intricacies”. There was recognition that this had not always been the way, that in the past city folk had visited their relatives living on farms but it was thought that this had changed due to an increase in imported food coming to Australia. The media was also held responsible for contributing to the lack of understanding as their portrayal of farmers as “environmental terrorists” and headlining stories about the drought were the main information sources about rural areas for people in Sydney.

### ***Definitions of sustainability***

When discussing the term ‘sustainability’ many different opinions were raised by CMA staff, as were different interpretations as to how farmers might define it. It was thought that a lot of what farmers recognise as sustainable may be different from what the CMA staff define as sustainable. Landholders were thought to consider being sustainable as maintaining status quo or if still operating in 10-30 years time (depending on their enterprise). For example,

“some think that if they don’t degrade they are sustainable. But if they started with degraded soil then it is not sustainable to stay at the same level. Soil health is important to improve first”.

It was noted that these definitions of sustainability were mainly in the economic sense of the term. Environmentally sustainability was said to also be considered important by a few farmers and by CMA staff. There was also recognition that there needed to be social sustainability as farmers were seen as integral to the social community. Due to differences between farms and between paddocks, the word sustainable was thought to becoming less relevant and terms such as improving/enhancing/better and best land management practice were preferred. It was recognised that for farmers it is “hard to be green if you don’t have the money”.

### ***Barriers to agricultural change***

Many barriers to agricultural change were discussed during the workshop. These barriers included:

- continuation and increased severity of the drought/climate variability
- low economic returns from farming
- varying landscapes on properties
- difficulties in keeping up with technology
- difficulties with funding (e.g. short term, completing applications)

Farmers were thought to be not only agents of change but also acting as barriers. Ageing farmers were thought to be more conservative and therefore less open to change. Farmer knowledge was noted as a barrier but it was counter argued that there are now many courses with a degree of flexibility to allow more farmers to become involved. It was noted that many farmers currently had too many enterprises operating on their properties which was reducing their ability to focus on one and improve it. In addition, previous bad experiences and conflicting opinions with neighbours were also thought to influence farmers’ ability and openness to change.

### ***Drivers of agricultural change***

Whilst discussing the barriers to change, a number of drivers of change were also highlighted. These included:

- new innovations
- early adopters
- stewardship programs
- social diversity/ social networks e.g. young farmers network

- positive success stories and sharing of them
- availability of information from trusted advisors, particularly about trials
- support from the CMA and other local groups.

Community strengths, such as generosity and willingness to volunteer to achieve change, were also highlighted as important drivers, for example: “going out and seeing the guys in the community that are doing a good job - that’s what drives me”. Those who are unsatisfied with what they are currently doing, willing to take a risk and have a desire to change are more likely to drive a change.

### ***CMA operations***

When discussing natural resource management in the catchment, the conversation was focussed around CMA operations. CMA strengths, weaknesses and opportunities for the future were discussed.

Some of the strengths of the CMA included:

- “locals” working as staff
- having offices spread over many locations
- partnerships with local agronomists
- having an established service network in which to discuss issues
- initiating programs (such as the LSAP program) in areas with no prior CMA contact

CMA weaknesses included:

- difficulty with remote areas (eg continuation of projects, keeping contact)
- focus in the past has been predominately on the upper catchment
- lack of time
- increase in areas to be managed with less resources

It was recognised that the CMA had started out with a lot of funding from federal government and this may have led to many in the community viewing them as just a funding body or financial institution, rather than a group promoting healthy catchments and communities. In addition it was recognised that CMA staff needed to feel confident about promoting the NRM message. This was thought to be possible by developing long term networks of advisors in NRM, having consistent managers and improving relationships with the community (particularly in regard to building trust). It was also hoped that the CMA would be well known in the future and that in order to achieve this they needed to become proactive in making the community aware. It was suggested that the CMA think “outside the box” in order to make it easier for people to come to them, for example via informal BBQs and being present at sporting events. It was also hoped that the CMA could continue to build capacity in the community to encourage change where needed and continue to provide necessary support.

## **Lachlan Research Forum Workshop Summary (Lachlan Catchment)**

### ***Summary***

A diversity of views relating to farming practices and agricultural change were shared during the workshop. Participants recognised the bigger picture issues that appeared to be manifesting locally and suggested ways these issues could be overcome in the future. The changes occurring locally both for agriculture and local communities were discussed in detail, including some of the more sensitive issues regarding mental health and the role of women in the community. There was a collective hope for the future that farmers would be better understood by city folk and that they would have more power in the decision making affecting them.

### ***Change in the local area***

When asked about their first thoughts on the area, researchers and CMA staff noted that change in agricultural practices appeared to be taking place but at different times for different areas within the catchment. It was also recognised that some farmers were faster to adopt certain practices than others but mixed farming was not necessarily the solution for sustainable land management. The drought was noted as a possible cause of change (e.g. forcing farmers to destock) but it was recognised that this change was also occurring out of pressure, particularly financial pressure. Positive change was associated with the “Land” publication; training and extension programs; and by showcasing successful innovators. The average age of the farming community was seen to be impacting negatively upon change and innovation as retirement age farmers were seen as not willing to change and youth moving away from rural areas were thought to be creating a knowledge gap.

When discussing the local community it was noted that labour shortages (particularly due to the drought); farmers inability to hire labour due to financial pressures; and youth moving away were the biggest changes taking place. This highlights how dependent local communities are on the farming community to keep them going. It was mentioned that people were no longer shopping locally, in order to get a better price, which was also having a negative impact upon communities.

It was highlighted during the discussion that some mental health issues were present in the community and catchment managers were feeling like social workers as a result. On the other hand, it was noted that some were feeling optimistic as current prices and crops seemed to be going well, but that “people are cautious about being optimistic until they have the dollars in the bank”.

### ***Barriers and drivers for the adoption of sustainable practices***

When discussing the practices that should be adopted it was noted that no till farming, maintaining ground cover and having a rotational system were the most important. It was thought that overall there was still a fair way to go to get broad scale uptake of sustainable practices. Creating awareness about biodiversity was regarded as difficult due to limited scientific evidence. Participants stated that farmers preferred conclusive evidence and ‘facts and figures’ which often science could not provide due to conflicting research and perspectives. Conflicting views were thought to be present not only between scientists, but also between governments departments, research organisations and local agronomists. When discussing how farmers should deal with information, it was noted that everything should be considered in light of their own properties, as change is dependent on location and the diversity of views need not be such a bad thing.

Some participants thought that farmers should try to take a long term view as those that were most successful tended to do so. An opposing view was that often financial pressures inhibited long term planning and the notion of survival versus innovation was raised. A lack of

succession farming was also thought to negatively affect land management as there is no incentive to leave the land in good condition. Corporate farms were noted to be increasing in the local area and they were highly regarded for their innovation, early adoption, highly trained managers and NRM work. It was recognised that the corporate farm system operates differently to the traditional family farm.

### ***Farmer identity and the value of farming***

When asked about the value of farming, workshop participants noted that it had traditionally been about the lifestyle but recently this had changed as farming was becoming more like a business. Profitability and sustainability were becoming the most important things. There was recognition that a lot of farmers are very passionate about what they do and that many farmers wanted to succeed and leave the land in better condition. It was thought that farmers identified themselves as hard working, independent, honest “jack of all trades”. Farmers were thought to not often talk about themselves but were happy to talk about their farm successes. Farmers were seen to not want subsidies from the government as they preferred to be independent. The impact of the media on farmer identity was also discussed and it was noted that farmers were mostly portrayed as whingers and environmental terrorists, not as business men concerned about sustainability. It was also noted that some in the community complained about farmers sending their kids to boarding school but failed to recognise that this was a tradition amongst farmers.

### ***Outside views of farming***

Workshop participants were asked to reflect on how different communities view farmers. It was noted that local rural communities tend to have a shared identity with farmers and that it was the city folk that undervalued them. It was also noted that city folk failed to recognise farmers as innovative and that the media especially failed to give innovative farmers the positive attention they deserved. It was thought that city folk did not understand that increases in food costs were related to the impacts of the drought on farming. Nor was their widespread recognition that farmers dealt constantly with increased costs. When discussing international perceptions of Australian farmers there were mixed views. Some thought that the international media focused on live transport, mulesing, contamination of grains and the Australian Wheat Board. Others believed that Australian farmers were perceived as efficient, unsubsidised and able to operate in difficult conditions.

### ***Outside influences on agriculture***

The role of outside forces, or players, in the agriculture arena and how they influenced perceptions of farmers was also discussed during the workshop. Supermarkets were mentioned as being very influential and that many farmers were still feeling “quite bitter” about how they had been treated by large corporations. Lobbyists such as PETA and WWF were also thought to be portraying a negative perception of farmers. On the other hand, it was noted that while NSW Farmers Federation & Agforce were advocacy groups that encouraged positive farming stories, overall they weren’t able to compete with the stories from PETA and the media as “bad news always sells”.

When discussing groups or individuals that were able to influence change, government was noted as having a lot of control particularly through policy. The emergence of NGOs, farming groups and Greening Australia were seen as influential. DPI was also recognised but was thought to have changed from serving farming to now serving government. Concern was raised about the increasing complexity of government and the changes to NRM funding arrangements, particularly the increasing centralisation of resources and policies. It was thought that farmers were less likely to be involved in Landcare groups particularly as there was a perception that their role in devolving funds had diminished and preferred to be a part of more professional NGO and farmer groups.

### ***Helpless/ disempowered groups***

Workshop participants were also asked to discuss who they thought the helpless and disempowered groups were in NRM. Women were thought to be largely invisible and were only just beginning to receive the recognition they deserve. It was thought that women were often the ones driving the innovation in agricultural settings. It was noted that the NRM model often assumes farmers are men and therefore activities are set up that often unintentionally exclude women. Farmers with degraded natural resources were also thought to be helpless and disempowered and in need of services and support, particularly mental health services. On the other hand it was noted that many farmers were not comfortable accepting exceptional circumstance funding as there was a stigma attached that only unsuccessful farmers needed it.

### ***Visions of the future***

When discussing what the future would be for farming, participants had quite positive ideas. It was thought that farmers would be doing more with less and they would be operating with very little water but overall this was seen to be both challenging and exciting as “prices will be so good”. The future was described as “warmer, dryer and doing well”. One hope was for there to be more possibilities so that those who needed to change could and those that wanted or needed to stay the same could. It was also hoped that farmers would be more engaged and would have more power in decision making processes.

It was hoped that the rural communities could continue to survive and that the value and opportunity in rural areas would become recognised. The increasing importance of the food miles concept in Europe was mentioned and it was hoped that Australians would be concerned about this in the future. It was suggested that the population may be redistributed, despite some rural folk not liking city folks moving to rural areas. Smaller villages closer to the city were one example of how population redistribution could occur. Holistic management was noted to be more than just farming and city folk needed to recognise that land still needed to be managed – that it could not be left.

When thinking about the broader paradigms that could be operating in the future, a diversity of views were shared. One suggestion was that the future could go in two directions – either the eco agricultural path or the synthetic agricultural path. This was stated to be akin to the book “Food Wars” by Tim Lang and Michael Heasman where three possible paradigms for the future included 1. the current productionist, 2. the life sciences (e.g. gene technology) and 3. ecological agriculture. Another mixed model as seen in the “Land” was noted as a future possibility. It was thought that although the future could mean many different things to many different people, it was very important to ensure that a consensual definition of ecological agriculture is developed.

## **Little River Workshop Summary (Central West)**

### ***Summary***

A common theme through out the discussion related to change within the community, for instance, changes to farming practices, the nature and dynamic of the farming community and also changes in terms of how people think about and act 'sustainably'. Much of the discussion considered change factors that were out of the immediate control of the farming community. Despite this, there was optimism, and it was generally considered as being a part of the nature of farming. The following is a summary of some of the key topics that were raised by participants during the workshop discussion.

### ***External Pressures***

Some of the workshop discussion was on external pressures that impact on farmers' capacity to run their enterprise. External pressures included:

- Market forces
- Economic stressors such as commodity prices
- Impacts of drought
- Legislation
- Single desk system
- International relationships
- Unfavourable weather

These sorts of pressures were seen to impact on the farming communities capacity to go about their business, particularly given their relatively uncontrollable nature. Legislative changes to drink driving laws were seen to have changed the community's attendance at the local pub. There was disappointment associated with the impact of this law which has resulted in a decrease in farmers' social interaction with others in their community.

### ***Farming Practices***

There was recognition that there have been changes over time in the way that people farm which in part has come about as a result of drought conditions, and economic pressures. Some of these changes include:

- Considering alternative fuels due to diesel prices
- Departure from burning stubble
- Departure from ploughing
- Some weeds (not all) are being considered differently as ground cover
- Trend towards minimum till
- Emergence of niche industries and new markets
- Bigger farms through amalgamation or smaller hobby allotments

It was also discussed that there is a lot of information out there to inform farming practices from sources such as television programs, newspapers, the Catchment Management Authority and conservation groups. The mass of information meant that with,

“all this mash of info [need to] sort out hay from chaff.”

The complexity in deciding what is the best practice for your property was raised, as were mechanisms for aiding the decision making process, such as talking to other farmers about their experiences, seeing what works in the area, and trial and error. Some of the factors that were seen to impact on farmers' likelihood to change was their willingness to take risks and the structure of their personal finances. Significantly, farmers' adaptability to these pressures was seen as being responsive to situations and generally there was a sense that farming has changed across generations.

As traditional farming methods were observed to be changing, so too were the scale in which farms operated. This was seen to have been influenced by the number of city people, particularly professionals and contractors, beginning to reside in the area introducing new ways of thinking and acting.

### ***Sustainability***

The issue of sustainability was discussed during the workshop. It was noted that there have been changes in how people conceptualise sustainability, and the values associated with the term. Historically in the context of farming the term 'sustainability' has been associated with a desire to leave the land in better condition than when they first started farming the land and about sustaining an income. Discussion during the workshop focussed on how the word 'sustain' was perceived to be limiting on peoples potential and that the broader aspirations of the farming communities. Being 'sustainable' is beginning to not be enough, with a high level of enthusiasm to contribute more through farming, for instance, "Back in those days, sustainable meant sustaining an income. Outside intervention – fertilisers etc. Now people becoming aware".

Sustainability is now seen as only performing to the status quo and there is eagerness to act above and beyond the traditional notions of sustainability and farming.

### ***Rural community change***

With the associated changes occurring relating to the nature of farming in the region, changes to community demographics have also been observed. For instance, there was discussion on the perceived increase in the number of people, particularly contractors and professionals from the city. This was seen to coincide with the increasing presence of hobby scale operations. Accordingly there were observed changes in people's social interactions.

The importance of the local community was discussed, particularly in terms of how it is valued. Over time there have been changes in how people interact. For instance;

- The regularity of interaction was seen to be diminishing
- People are more inclined to travel to Dubbo, which is seen as more convenient and cheaper for goods and services
- Organised sporting activities occurring less
- Organised social events such as the Picnic Races are less frequent
- Fewer Church services
- A move away from employing people to work on the farm resulting in owners working harder on their property and with the aid of machinery. This has come about in part due to increased costs associated with Occupational Health and Safety regulations and limited funds for wages
- Household farm income is being supplemented by off farm income
- Local pub culture had been impacted by drink driving laws where it was perceived too costly to take a taxi home.

Generally there was a sense of there being less of a 'local' emphasis which has come about by economic pressures. Increased costs of living and running a farm have resulted in family farms making difficult decisions about where to purchase goods and services. In part this also seemed to be related to a perceived difference between rural communities and the city, whereby

"most city people I've come across believe that they don't require anyone out of the city. Any of the bigger towns – they'll believe that the town will prosper without the rural community"

Adding to this, there was also a sense during the workshop that the value of farming and their status had been changing over time. This was seen to have a detrimental impact,

“A generation ago a lot of city people had relatives that were farmers and that’s no longer the case. A lot of people - it’s common not to go past the Blue Mountains. They don’t see agriculture...farmers were traditionally peasants. Industrial revolution and farmers grew in status. Hit a peak on the 50s and its heading back towards peasantry”.

### ***The Future***

There was extensive discussion about perceptions of the future by participants in recognition of changes in farming practices, attitudes towards sustainability and to their rural community. Among the issues discussed were:

- Climate change
- Changes to the scale of farming, from hobby scale farming, niche farming enterprises (e.g. wine or olive production) to large scale contract farming
- Farming as part of a global economy

Discussion of climate change was focussed on people’s belief in the concept. There were mixed perceptions with some seeing climate variability over time as being a part of a larger cycle. Perceptions were also varied regarding the potential impacts of climate change/variability with varying levels of optimism regarding how farming in the area will be able to manage future climate pressures, particularly in relation to drier seasons. The discussion also considered global impacts, for instance other markets around the world that have been impacted and the relationship that Australia has with other food producing countries around the world, particularly with Asia.

The observed trends towards hobby scale farming operations in the area reflected on the change from more traditional notions of farming – large properties with a production focus with an appreciation of the lifestyle of farming as opposed to seeking a lifestyle change on a small holding with minimal production.

Workshop discussion about the future considered a broad gamut of possibilities, ranging from local changes and possibilities to how Australian farming may operate internationally. There was growing recognition of the interrelationships and interdependencies between Australia and other nations, “everyone now has to have a global outlook. We are now “Asia Pacific”. You never heard that in the 50s and 60s. It used to be primary and secondary. But now it is global. You can’t isolate yourself. All these factors influence you”.

It was also recognised that despite these dependencies, there is also a need to ensure self sufficiency and maintain the farming skill set. The message was clear, there is a great passion and value of farming within the community which is seen in the desire to continue farming in response to changing social, environmental and economic conditions.

## **Walli Creek Workshop Summary (Lachlan)**

### ***Summary***

The Walli Creek Workshop was vibrant and reflective, where workshop participants shared stories, experiences and expertise. Major themes that emerged from the discussion tended to revolve around issues of change. Change was seen to have been occurring in all aspects of community life, for instance, in how people go about operating their farm, to changes in the adoption of technology, through to changes regarding the demographic of the community, most notably the decreasing numbers of young people in the region. The local farming community was highly prized and valued, and this also was witnessed in the manner that participants at the workshop respected each others opinions. The following is a discussion of some of the key topics that were raised by participants in the workshop.

### ***Farming practices***

Throughout the workshop there was extensive discussion on farming practices, where workshop attendees reflected on the types of activities that they engage in. Some of the practical challenges associated with running a farm were also raised, particularly in respect to difficulties in modifying machinery to suit new methods, animal pests such as foxes and the number of kangaroos and licensing issues associated with occupational health and safety, and chemical use. There was also reflection on the impacts of structural changes such as the closure of railways and silos, practical issues associated with marketing of produce and the impacts associated with changes in policy. Farming was perceived as being a process of learning from multiple sources, including The Land Newspaper, ABC Country Hour, neighbours, other farmers including those outside of the district, and attending courses. While such sources were seen as having the potential to influence peoples farming practices,

“It’s not gospel but we can use the information to explore some ideas...It’s all food for thought to develop something for the future”.

Collectively, the message was that there are a multitude of considerations and external factors that influence a farming enterprise, and perhaps people outside of farming are not aware of these factors.

### ***Rural Identity***

The role of the media was seen as particularly influential in contributing the identity of farmers and rural communities more generally. The media was conceptualised as the primary means of linking rural communities with urban cities and there was a level of frustration associated with poorly communicated headlines and news articles which fail to appropriately convey real rural experience, challenges and strengths. In part this was seen as a result of the influence of the Greens in the media, for instance, there was frustration regarding poorly communicated statements regarding kangaroo culling. There was the perception that, “Greenies want nature everywhere but we need to survive.”

There was also a sense that the connection between city and rural was weakening as fewer city people had relatives that worked as farmers, for instance,

“someone used to have an uncle or whoever living out there. No connection now. My relatives are amazed when they come out there. They asked me who mowed my property – I had to tell them the sheep mow down here.”

While there was recognition of a disconnection between rural and urban communities, there was also awareness of some changes in the city, for instance particular reference was given to drought fund raising efforts.

During discussion there were several conversations regarding what it is to be a farmer, for instance, farming was distanced from other land based or natural resource based industries such as mining, and there was greater value placed on larger scale farming operations as opposed to smaller hobby scale holdings. Discrepancies were raised between more traditional farming practices that may have occurred in previous generations compared to more recent agricultural practices which were perceived as being more beneficial to the environment, but still geared towards production. There was recognition that while,

“young people are getting scarce in the bush. A few are coming back but there are not the numbers there were 50 years ago. [There is the need to] encourage young ones to learn elsewhere instead of being stuck with dad’s ideas”

There remains the sense that farming tends to be valued as a family operation, whereby previous generations’ skills and understanding of the land and the enterprise inform current generations’ practices, while also appreciating and encouraging the use of new innovations.

### ***Community change***

Change was a particularly prominent issue during the discussion. The key issues relating to change included;

- Changes to farming practices (e.g. prevalence of direct drill and minimum till, aspirations to maintain water in the soil profile, fewer if any people employed on farm, increasing prevalence of contract staff, machinery adaptation, technologies such as GPS, increased responsibilities associated with Occupational Health and Safety, policy regarding chemical use)
- Demographic changes in the community
- Social changes in the community
- Expectations from consumers (e.g. fat content in meat, canola and wheat varieties for baking)

As with any occupation there was recognition that deciding whether or not to farm is a major decision and the expectation does not necessarily exist (as it may have previously) that farming need be continued across generations in the family. There were mixed feelings regarding whether sons or daughters should farm, particularly given the effort, there are other occupations that may be more financially rewarding. Hence, at times there was a sense that it is fair to discourage youth from farming and to seek employment and a lifestyle outside of country towns. Simultaneously though, there was also discussion regarding what was thought regarding youths contribution to farming and the community. For instance, that youth can bring a great deal to the family farming enterprise, such as computing and technical skills that can be learnt at tertiary institutions. Hence perceptions were mixed, there was recognition that there are opportunities for young people outside of the farming communities, while also a longing for youth to continue a legacy and contribute new skills. Similarly, there were changes seen in holdings getting larger, and the tendency to invest in capital as opposed to labour as wages were seen as too expensive.

The process of change was also discussed during the workshops. Motivation for change was seen to stem from necessity and there was recognition drought conditions perhaps made inevitable changes occur at a faster rate. Change was also seen to occur through a number of steps, one of the first being observation of other farmers. While uncertainty was discussed, there was also discussion on what is controllable which was seen as what you decide to grow and the management regime you choose to adopt. The farming community network was perceived as an asset, serving a vital social function. In particular, there was reference

made to the way in which farmers are exposed to new practices and contemplate adoption which is based on the community network.

### ***Changes in agency support for farming***

There was reflection on changes to the types of services that groups provide, from the days of The Department of Agriculture who were seen as production driven to Landcare and CMA's which were perceived as being conservation oriented, for instance,

“the Department of Agriculture extension officers don't have what they had a few years ago. Landcare and now the CMA have taken over – they are a bit greenie but not lifting production”

And

“the CMA do not have agronomists like they had in the Department of Ag. CMA staff will tell you stuff about grasses and trees but not about crops and about beef. Department of Ag would help us with production and work alongside the research stations and would tell us about the papers they were putting out”

The CMA was seen as an institution that facilitated change with the farming community, but did so in a manner that was contrary to the production oriented approach that was typical to the Department of Agriculture that prior to the CMA had been particularly significant as an information source within the community. It was felt that the CMA are geared more towards conservation which may not necessarily be appealing to all farmers in the region particularly given current farming pressures associated with the uncertainty associated with markets and weather. Throughout the discussion there was reference to the need to have money to enable any changes on farm, with changes in machinery given as a particularly expensive example. There was also a sense that the types of funding opportunities that were provided through the CMA enabled farmers to engage in activities that they would not have had the opportunity to do otherwise,

“I wouldn't do half the things without the funding as hasn't been a profit on the farm for it. Hand outs they helped a lot, can now fence off the salt areas. They are good at giving us advice and money to improve”

There was also a degree of scepticism regarding the advice provided by agronomists as they were seen as having an interest in selling a product. Comparatively the agronomists at the Department of Agriculture were thought to present unbiased opinions.

### ***Values***

Related to the issue of change, was the recognition of the importance of the family unit and family values. Discussion during the workshop at times touched on differences between how city people and country people think, feel and act. A different culture for city and rural people regarding work, lifestyle, and family according to generation was also recognised. Generational differences were also raised regarding the memories that the groups have regarding farming practice, the culture and lifestyle.

### ***The future***

There was a sense that despite the growing options in farming (e.g. organic farming, ethanol production) there is always going to be a need for food production. The future also appeared to be geared towards increasing your own marketing of produce and it was hoped that necessary skills could be brought home to the farm by the next generation. A key aim was to keep young people in the communities, or, be able to draw them back through creating new opportunities for them. Ultimately, this process was seen to occur through encouraging the

growth and development of the towns. Despite apparent challenges, the dominant attitude throughout the workshop was positive, where, “we always have optimism - next year will be better”.

## **Watershed Workshop Summary (Central West - Cudgegong sub-catchment)**

### ***Summary***

Overall the group discussion was insightful and many issues pertaining to farming and the local community were discussed and personal experiences shared. Many of the participants stated at the beginning of the workshop that they were unsure about the purpose of the day and there appeared to be a shared desire to be able to come prepared. The conversation at times tended to be dominated by 3-4 speakers and it was difficult to tell how much the group agreed with their sentiments. Despite this, a variety of opinion was shared on particular topics and many different outlooks on an issue were discussed. The discussion tended to focus on the negative aspects of farming life at times but the vibrancy of the group meant that others were happy, at times, to offer an optimistic view. The group also discussed some of the possible solutions to the challenges they face.

### ***Background on participants and the local community***

Those that attended the workshop were engaged in a variety of different farming enterprises including:

- hobby farms,
- family/ generational farms,
- 100% primary producers,
- a mix of farming and off farm income.

Participants agreed that the rural community was in decline, which had repercussions for farming as labour was limited. Mining was also thought to be changing the structure of the community and contributing to farm labour shortages as many workers were opting for the mines, and more money, over the farm. Yet it was also recognised that the difficulties facing farmers, thought by many to be induced by the drought, was also contributing to rural decline as farmers had less money to spend in town. Local services, such as hospitals, were being relocated or removed and concern was raised for elderly residents and farmers as they would eventually have to move to be close to the services. The area's close proximity to Sydney was met with mixed feelings as some found this to be positive and others felt that it attracted more hobby farmers and was changing the landscape of the area.

### ***The meaning of sustainability?***

When discussing the term sustainability, the group felt it was largely a negative term and preferred it to be replaced with something else. The term "sustainability" was thought to be:

- directionless
- overused
- difficult to define
- about creating a balance
- adding to the complexity of farming.

It was noted that farmers needed to be "financially stable first before you can become environmentally sustainable" and that there was too much emphasis on sustainability falling on the shoulders of farmers or individuals. It was noted that sustainability brought with it an increasing amount of things to worry about, such as carbon issues, tree credits and methane tax. Sustainability was seen as another idea pushed onto farmers by the government who it was thought, would not be accountable in the long term, whereas farmers would continue to preserve their farms for the future

### ***Issues specific to farming***

Participants stated that some of the broad issues currently facing farmers included:

- increasing costs of chemicals
- increasing costs of machinery
- shortage of labour

- changing structure of the typical family farm (succession not seen as a viable option for the next generation).

Further thoughts regarding farm succession were shared, including the idea that sons being actively encouraged *not* to return to the farm. It was felt that there was no future on the land as farmers were getting older and many would sell their farms for superannuation as the price of land was quite high. It was noted that the price of the farming land was worth more than what a farmer makes and therefore farmers were having to “get leaner and leaner if we are going to survive”.

The negative feelings noted by participants about the current rural situation appeared to be emphasised by the apparent positives associated with the past and with rural areas overseas. It was noted that farming had become more complex and increasingly uncertain, where as in the past it had been easier. It was also thought that farmers overseas were valued more and that city folk in England and Europe had more connection with where their food came from than Australians. Occasionally a positive comparison was made, such as recognition that other businesses were going through tough times of low profit/yields, and a call to the group to look for the positives out there.

### ***Farmer identity***

Mostly it was felt that the lifestyle was what kept farmers on the land and that despite being thought of as fools for staying on the farm during times of uncertainty and drought, there was a love for what they do. Many felt that they had a particularly strong emotional and physical connection to the land although it wasn't enough to get by on and many farmers noted their reliance on off farm income to survive. These connections to the land were also being challenged as some were beginning to think of themselves as “real estate people” willing to take advantage of high local land prices. It was suggested that owning a farm was like having some rental real estate, as demonstrated by the following quote: “it is just an asset.... It is the family farm, but it is really just the family house and the farm just happens to be around it”.

### ***Information & media***

The abundance of information for farmers about farming and NRM was a major issue discussed by the group. It was noted that farmers were being overloaded with information as it was being pushed on to them in all forms such as emails, letters, phone calls, invitations etc. The real difficulty was said to be in finding the time to try and sort through it all (e.g. “we wouldn't have time to be farmers if we read through it all”) and to make sense of the conflicting ideas. There was recognition that “things evolve, we've got more info than ever before” which demonstrates that some participants were eager to look on the bright side.

When discussing the media, it was felt that only negative stories about farmers appeared, but that was how the media wanted it. Utilising the media for farmers own advantage was noted as being difficult, again due to the conflicting information and difficulty in sourcing the right information on prices and markets. Some suggestions for change included:

- Using television (rather than the newspaper) as a better way to communicate rural issues (it was felt that less people were reading the paper these days).
- Landline having 2 programs a week, with one on during prime viewing time.
- Landline to get “back in touch with farmers” and renew its relevance to farmers.
- The creation of an agricultural channel.

### ***Who is in control?***

When discussing many of the issues, participants noted feelings of helplessness and a lack of control. Participants were frustrated at having attended meetings in the past and being told what will happen, rather than their ideas being used. Feelings of confusion and lack of control were also cited, particularly in regard to market prices and taxes. Farmers felt that they were “price takers, not price makers” and that the markets controlled them. An example

was given of farmers not being able to tell the wheat board what price they want for their wheat.

### ***City/ rural divide***

Participants felt that there was a real divide between city and rural folk. It was thought that city ideas were often developed and then applied to rural areas by people with no connection to rural life. It was mentioned that city people are increasingly becoming out of touch with rural areas as they don't know how food is grown. This divide also related back to participants' discussion regarding the different definitions of sustainability held by farmers (rural) and government (city). It was noted that farmers preferred to listen and learn from one of their own and would not be too interested in taking advice from someone "without any dirt under their fingernails".

### ***The role of government***

During the discussion it was commonly noted that the current government structure in place was not suitable for farmers and rural areas. For example, taxes that would affect farmers, such as the methane tax, were thought to have been created by politicians who are out of touch with the rural areas. Despite this, participants felt that farmers still had to adhere to the policies. It was felt that government did not care about farmers, for example "they (the government) won't be accountable. They'll be gone. We'll still be preserving our farms for future generations". Confusion about not knowing who to believe was apparent, as were thoughts about government inability to "make up its mind". It was suggested that the government should be investing in farms now to avoid bail out costs later.

There was recognition of positive work by the local Lithgow council, such as the brochures on feral animals and weeds that are given to all newcomers. It was suggested that other councils in the area could do the same to help combat some important NRM issues.

### ***NRM & CMA structure***

Issues pertaining to the structure of the CMAs and changing structure of NRM support systems were discussed by the group. NRM changes, such as the disappearance of the old research stations and local agronomists, were noted to be a common occurrence. The CMAs were seen as unstable and difficult to build relationships with, due to frequent staff changes and inconsistent messages regarding funding. It was agreed that farmers needed CMA assistance the most during the drought as they were physically and financially unable to do anything. Many had heard there was no funding left or that they couldn't apply for funding as their properties were outside the CMA boundaries. It was also thought that CMA money was not going where it should be due to CMA links within the community. One suggestion was for the CWCMA to split funding money differently – not equally but on the basis on the project merit. It was also suggested that the CWCMA include more landholders in their annual conference.

In terms of environmental issues, weeds were regarded as one of the biggest problems and were thought to be underrated in the public eye. It was noted that subdivision exacerbated the weed problem as many of the people buying smaller blocks were from Sydney and did not live on their property where they could manage the problem and take care of their block. The weather and the drought were noted as issues but were seen as "something we have to live with".



### Contact Us

Phone: 1300 363 400

+61 3 9545 2176

Email: [enquiries@csiro.au](mailto:enquiries@csiro.au)

Web: [www.csiro.au](http://www.csiro.au)

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