

**Catchment Management in the Lake Baroon Catchment:**  
*The role of good working relationships and trust*  
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*A thesis submitted to The University of Melbourne for the degree of  
Bachelor of Environments (honours)  
November 2014*

**Declaration**

This thesis is submitted to the School of Geography, The University of Melbourne, as partial fulfilment of the requirements for completing the Bachelor of Environments with Honours. The work contained in this thesis is the result of original research, and has not been submitted in whole, or in part, for a higher degree to this or any other University or similar institution

## **Abstract**

Conducting on-ground catchment care activities requires the consent of private landholders to gain access to their property. Past research suggests that trust is essential to gaining community support for water quality management policies, yet little is known about the role of trust in achieving on-ground outcomes. The aim of this study was to explore the general factors that lead landholders to trust natural resource management (NRM) institutions to conduct grant-based, on-ground catchment care activities on their properties. Eighteen interviews were conducted, with twelve landholders and six agency staff members, as part of a qualitative case study in the Lake Baroon Catchment, Queensland. The results showed that there were eight ‘drivers’ that promoted trust (or distrust) between NRM institutions and landholders, these were: technical competency, moral competency, capacity to help, shared values, empathy and respect, familiarity, past experiences and reputation. In particular, shared values served as a lens through which the other drivers of trust were assessed, indicating that drivers of trust do not exist in isolation and act in a hierarchical manner. Furthermore, it was shown that the socio-economic circumstances of landholders impacted on their willingness to trust NRM institutions, and the broader institutional setting and funding models that NRM organisations operated within impacted on their ability to develop relationships of trust with landholders.

It is recommended that short term funding and on-going reliance on externally-provided, uncertain resources is avoided. In order to achieve sustainable on-ground outcomes, funding of NRM institutions should aim to provide stability over the long term and autonomy for decisions about priority setting and project selection as this enhances an institution’s ability to develop relationships of trust with landholders.

## **Acknowledgements**

Firstly, I would like to express sincere gratitude to my supervisor Sonia Graham. Thank-you for all the effort you put in, I could not have done it without your guidance, motivation, patience, understanding and gentle reminders to meet my own deadlines throughout the year.

Thank-you to all the landholders who gave their time to be interviewed. Thank-you to the staff members from LBCCG, Barung Landcare, and Seqwater for participating in the interviews and assistance in the field.

Thank-you Russell Drysdale for your commitment and advice as honours coordinator this year.

Finally, thank-you to all the other honours students for the many chats, advice, laughs and general support of each other throughout the year. I feel privileged to have shared this journey with such a wonderful group of people. I will miss working in our dingy little office together.

# Table of Contents

Abstract.....	iii
Acknowledgements.....	iv
Table of Contents.....	v
List of Figures.....	viii
List of Tables.....	viii
Chapter One – Introduction.....	1
1.1 Introduction.....	1
1.2 Conservation Practices in Australia.....	2
1.3 Strategic Catchment Management.....	3
1.4 Catchment Management in the Lake Baroon Catchment.....	4
1.5 Conclusion.....	10
Chapter Two - The Role of Trust.....	12
2.1 Introduction.....	12
2.2 Trust in Natural Resource Management.....	12
2.3 Towards an Understanding of Trust.....	13
2.3.1 Characteristics of a trustor.....	15
2.3.2 Characteristics of a trustee.....	17
2.3.3 Context.....	20
2.4 Conclusion.....	21
Chapter Three- Methodology.....	23
3.1 Introduction.....	23
3.2 Methodological Approach.....	23
3.3 Case Study.....	24
3.4 Semi-Structured Interviews.....	25
3.5 Participants & Sampling.....	26
3.6 Data Interpretation.....	28

3.7 Ethics.....	29
3.8 Conclusion.....	29
Chapter Four - Drivers of Trust (Or Distrust).....	30
4.1 Introduction .....	30
4.2 Characteristics of the Trustor .....	31
4.2.1 Land Use Values.....	31
4.2.2 Experience .....	33
4.3 Characteristics of the Trustee .....	33
4.3.1 Technical Competency .....	33
4.3.2 Moral Competency .....	35
4.5.1 Capacity to help (time and resources) .....	36
4.4 The Relationship .....	37
4.4.1 Shared Values .....	37
4.4.2 Empathy-Respect.....	38
4.4.3 Familiarity .....	39
4.5.2 Past Experiences (First Hand) .....	40
4.5.3 Reputation (Second-Hand) .....	41
4.5 Catchment Care Activities .....	42
4.6 Conclusion.....	44
Chapter 5 – Comparison of Institutions .....	46
5.1 Introduction .....	46
5.2 Barung Landcare .....	46
5.3 Lake Baroon Catchment Care Group .....	50
5.4 Seqwater .....	57
5.5 Conclusion.....	61
Chapter 6 – Discussion .....	62
6.1 Introduction .....	62

6.2 Drivers of Trust .....	63
6.3 The Importance of Context .....	69
6.3.1 Institutional Context .....	70
6.3.2 Landholder Context .....	74
6.4 Conclusion.....	76
Chapter 7 – Conclusions .....	77
7.1 Limitations .....	78
7.2 Potential for Future Research .....	79
7.3 Policy Recommendations .....	79
7.4 Final Conclusions.....	80
References.....	82
Appendices.....	89
Appendix A – Landholder Interview Questions .....	89
Appendix B – LBCCG Interview Questions.....	91
Appendix C – Barung Landcare Interview Questions .....	92
Appendix D – Seqwater Interview Questions .....	92
Appendix E – Plain Language Statement.....	94

## List of Figures

Figure 1- Lake Baroon Catchment Aerial Photography (McMahon et al., 2013) .....	5
Figure 2 - Location of Lake Baroon Catchment (Adapted Google Image) .....	5
Figure 3- Lake Baroon Catchment Land Use (McMahon et al., 2013) .....	6
Figure 4 - Sampling Frame .....	27
Figure 5 – Conceptual diagram of drivers affecting landholders’ trust in NRM institutions in the Lake Baroon Catchment, Queensland.....	64

## List of Tables

Table 1- Participant Characteristics .....	28
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# **Chapter One – Introduction**

## **1.1 Introduction**

It is generally agreed that trust is important in building and maintaining positive relationships between natural resource management (NRM) agencies and private landholders. This is because it is extremely difficult to plan and implement management activities with opposition or distrust. Conducting on-ground catchment care activities requires the trust and consent of private landholders to gain access to their property. In catchments where the majority of land is owned by private landholders, trust is a central issue and conceptual tool for addressing issues around water quality.

The rationale for this thesis comprises two key objectives. First, it presents an opportunity to contribute to existing theory and knowledge on the development and benefits of trust between landholders and NRM agencies. Second, it is applied research, seeking to provide social information that may allow for a better understanding of the processes that lead to landholder participation in catchment care programs, subsequently benefitting the water quality within the catchment as a whole. Indeed, a better understanding of the processes leading to landholder participation in conservation activities in general, may be applied to many fields of NRM.

The primary aim of this study is to explore general factors that lead landholders to trust NRM institutions implementing catchment care activities on their properties in the Lake Baroon Catchment, Queensland. The second aim is to explore how characteristics of the trustor, trustee and context determine whether landholders trust NRM institutions, and how trust relationships vary between institutions.

## **1.2 Conservation Practices in Australia**

The past two decades in Australia have seen substantial government policy and programs designed to enhance the adoption of soil, water and biodiversity conservation on rural private properties (Griner & Gregg, 2011). Overall, the outcomes of these programs were generally unsuccessful due to a lack of landholder participation. The 1990's were considered the 'Decade of Landcare' in which the National Landcare Program pursued agricultural extension and localised grassroots-based approaches as the key methods to promote land conservation. The principles of this intervention were to raise awareness and education, but were never sufficient to ensure a desirable level of conservation (Pannell, 1999). The 2000's moved towards a more regional model of NRM in Australia, supported by well-funded programs at the national level, namely the National Heritage Trust and the National Action Plan for Salinity and Water Quality, as well as an assortment of state-level programs (Paton, 2004). Increasingly, offering grant-based financial incentives to landholders became the primary activity to promote adoption of conservation practices on private properties (Greiner & Gregg, 2011). This approach was still unable to achieve on-ground outcomes with respect to their intended regional-scale environmental objectives (Hajowicz, 2009).

The reason for the lack of on-ground outcomes and success of these programs was that neither of the approaches considered the broader factors that may influence landholder participation in conservation programs, other than awareness raising, education and financial incentives. In working with rural landholders it is important to recognise their social, historical and financial contexts, and factors influencing their willingness and capacity to embrace conservation (Millar, 2001). The decision to participate in conservation programs is

a social one, and therefore it is important to examine the social relations that may impact on landholders' decision-making.

This thesis focuses on the idea that landholders' willingness to embrace conservation is influenced by their relationship with the NRM agencies responsible for the distribution of grant-based conservation projects. In particular, trust has been shown to be a major component of developing and maintaining positive landholder-agency relationships (Leahy & Anderson, 2008) and that it is extremely difficult to implement conservation practices with opposition or distrust (Davenport, et al., 2007). The role of trust will be further elaborated in Chapter 2.

### **1.3 Strategic Catchment Management**

Achieving and maintaining water quality is important from an ecological perspective, and for the provision of clean drinking water. In many rural areas, nonpoint source pollution such as sediments, nutrients, chemicals and pathogens, come from multiple and dispersed agricultural sources compromising the quality of drinking water and ecological health of riverine ecosystems. It is difficult to link farmers' behaviour to environmental outcomes as nonpoint source pollution is hard to monitor and interacts with aquatic ecosystems in complex ways (Lubell, 2007). Therefore, in catchments where land has not been acquisitioned by the state, improving water quality requires the combined efforts of most farmers in a watershed (Sabatier et al., 2005).

There are many things that can be done to tackle issues of nonpoint source pollution such as implementing best management practices for usage of fertilisers, herbicide, pesticides, and the release of dairy effluent. However, this thesis will focus on conducting grant-based on-ground catchment activities with private landholders such as riparian revegetation, fencing

off cattle from waterways, cattle crossings, off-stream watering and hardened laneways. Riparian revegetation has tended to be the major focus of catchment care and stream rehabilitation projects in Australia. The previous widespread removal of riparian vegetation in agricultural areas has been shown to cause bank erosion and negatively impact on a number of important ecological processes (Prosser et al., 2001). Revegetation efforts are primarily designed to stabilise the river banks and filter the particles and sediments of soil surface run-off which is transported laterally to streams (Osborne & Kovacic, 1993). In addition, riparian vegetation can reduce in-stream nutrient and sediment export. Indeed, vegetating in general can prevent erosion and land slippage on properties which have previously been cleared. Catchment care activities such as fencing, cattle crossings, and off-stream watering all work to keep livestock away from the riverbank. This is done for two reasons: first, to prevent livestock from eroding the riverbank; and second, to prevent livestock waste from entering the waterway directly, which can be a source of pathogens (Wohlsen et al., 2006). Laneway hardening (e.g. gravel or concrete) is conducted on tracks on properties where there is frequent livestock traffic. Creating a hardened surface prevents soil erosion and slippage during wet periods (Alt, Jenkins & Lines-Kelly, 2009).

#### **1.4 Catchment Management in the Lake Baroon Catchment**

The Lake Baroon Catchment is 75km<sup>2</sup> and located in the Sunshine Coast Hinterland, Queensland, approximately 100km from Brisbane (Figure 1 & 2). It encompasses the town of Maleny. Over half of the land in the catchment is used for cattle grazing and intensive dairying, while 22% is rural-residential land, 3% is plantations such as macadamia farming and 11% is used for services and infrastructure. The remaining 17% is native subtropical forests (Figure 3). The catchment comprises a myriad of waterways dissecting the landscape, with five major waterways flowing into the Baroon Pocket Dam.

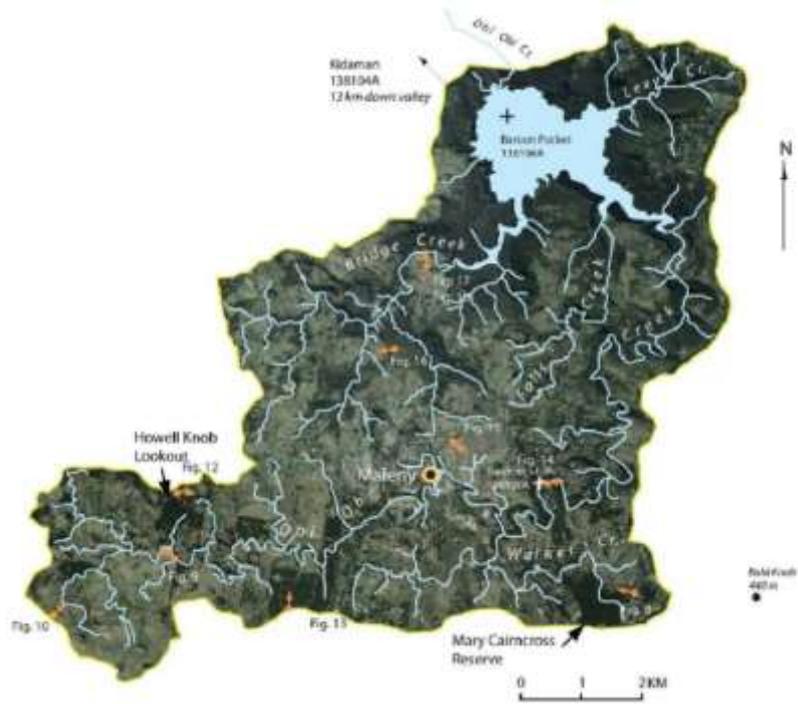


Figure 1- Lake Baroon Catchment Aerial Photography (McMahon et al., 2013)

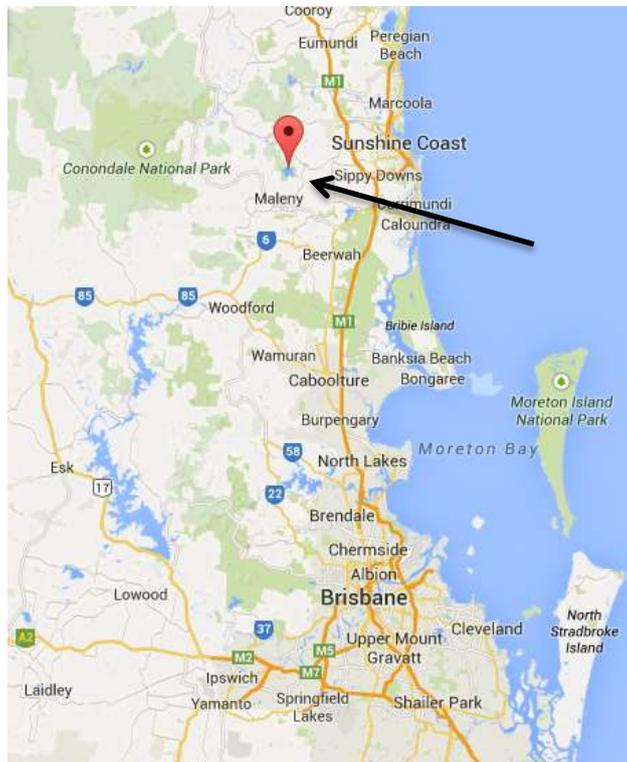
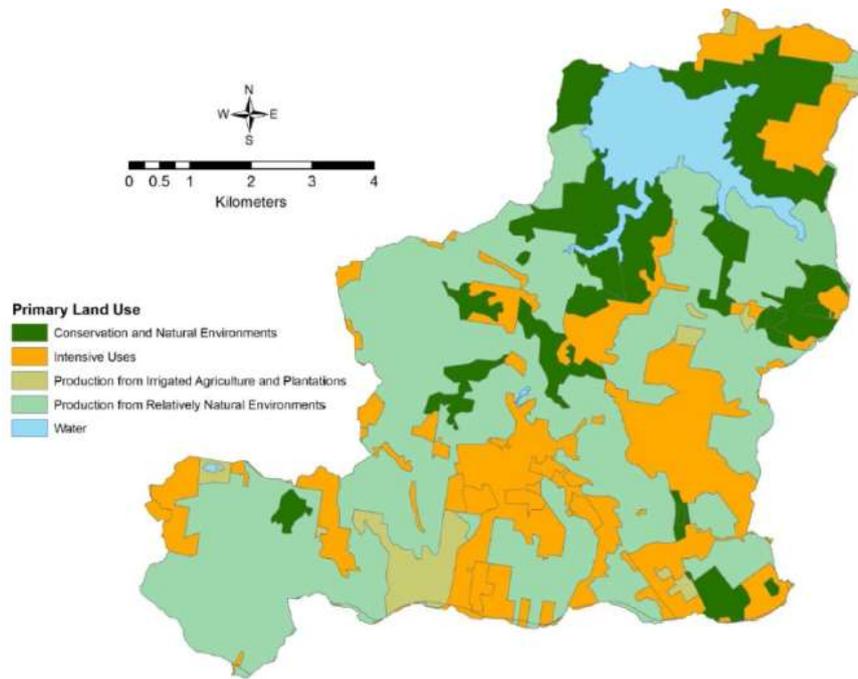


Figure 2 - Location of Lake Baroon Catchment (Adapted Google Image)



**Figure 3- Lake Baroon Catchment Land Use (McMahon et al., 2013)**

Built in 1989 the reservoir in the catchment is estimated to store approximately 61,000ML and supplies more than 20,000ML/yr to populations across the Sunshine Coast, Brisbane and South East Queensland (Skull, 2012). The area is characterised by modestly seasonal rainfall combined with relatively low annual variability and high annual precipitation which provides greater security of water to Lake Baroon than other larger dams in the region. Despite it being such a reliable and important water source in the region, there is a prevalence of water quality problems.

The catchment has been extensively cleared with only 17% of the original subtropical rainforest remaining (McMahon et al., 2013). Stream incision has generated a high proportion of catchment area (32%) with slopes exceeding angles of 25° (McMahon et al., 2013). The overall combined factors of sparse vegetation, steep elevations, and intensive agricultural land use has seen the prevalence of several water quality issues such as high nutrient loads causing regular algal blooms (LBCCG, 2011), high sediment loads of up to 4,300 tonnes a

year (McMahon et al., 2013), and pathogens such as *Cryptosporidium* and *Giardia* (Wohlsen et al., 2006). Indeed after a thorough analysis of the catchment, Dunstan (2007) concluded that the majority of the aquatic ecosystems in the catchment were highly degraded. Furthermore, it is predicted that in many areas of the catchment, if no restoration work is carried out, there is likely to be continued degradation (Dunstan, 2007).

There are three major NRM intuitions in the area seeking to address these water quality issues by conducting on-ground catchment care activities with landholders. These are Seqwater, the Lake Baroon Catchment Care Group (LBCCG) and Barung Landcare.

### *Seqwater*

Seqwater is a statutory authority (the Queensland Bulk Water Supply Authority) established under the *South East Queensland Water (Restructuring) Act 2007* to supply water for South East Queensland. Guided by its obligations under the Water Act 2000 and the Water Resource (Mary Basin) Plan 2006, Seqwater has several corporate goals, objectives and key performance indexes (KPIs) directed at a whole of catchment approach to sustaining the catchment and water quality within it.

There are a number of financial incentives for Seqwater to manage the catchment. First, preventing nonpoint source pollution within the catchment would reduce water treatment costs, which are forecast to increase in the coming years (Skull, 2012). Second, the Baroon Pocket Dam risks reduced storage capacity through processes of sedimentation; reducing erosion at its source may be the most effective way to prevent this from occurring.

Seqwater has undertaken a number of catchment care projects throughout the Lake Baroon Catchment; however, the majority of its objectives and KPIs have been met through its funding of the LBCCG, which conducts on-ground work with private landholders.

#### *Lake Baroon Catchment Care Group (LBCCG)*

Established in 1992 as a result of community concern for water quality in the Lake Baroon catchment, LBCCG is a small, not-for-profit community-based group seeking to deliver improved water quality outcomes throughout the catchment (LBCCG, 2014).

The three main services provided by the LBCCG include: 1) on-ground catchment care projects with private landholders; 2) education and engagement; and 3) the provision of support for other relevant community groups. The project-based on-ground activities of the LBCCG are guided by a long-term strategic plan (Dunstan, 2007), targeting properties that have the greatest impact on water quality. In most cases, these are large properties used for grazing or intensive dairying. For this reason, catchment care activities focus on conducting activities that have ecological outcomes, and are conducive to managing livestock. This includes:

- Riparian Revegetation
- Fencing off waterways from livestock
- Stock waterway crossing
- Off-stream watering
- Hardened laneways

The costs of LBCCG are funded by a variety of sources, the most significant of which is a 10-year funding agreement with Seqwater worth \$1.6 Million, set to expire in 2017. This has allowed the group to hire a full-time project officer and set out a long-term strategic plan with certainty (Skull, 2012).

### *Barung Landcare*

Established in 1989, Barung Landcare is a community-based organisation which aims to support local and regional community empowerment to conserve and enhance the rich diversity of natural resources in the Blackall Range (Barung Landcare, 2014). While this organisation tends to focus on the more traditional Landcare activities of awareness raising and education, it also conducts on-ground catchment care activities.

One of Barung's aims is to forge closer relationships with primary producers, and work together to apply Landcare principles while increasing profitability (Barung Landcare, 2014). Despite this, the types on-ground activities it offers tend to have an ecological focus, this includes revegetation and restoration of riverbanks and wildlife corridors.

The costs of Barung Landcare are funded by a variety of sources including membership fees (over 750 members) and a combination of local, state and federal government funding programs. Notably, government funding programs have tended to be inconsistent, operating over short time frames (1-3 years) and often have strict funding criteria (Skull, 2012). In many ways, the types of on-ground projects that Barung Landcare can offer to landholders, is dictated by the funding available at the time. In an attempt to provide an ongoing cash flow without relying on government programs, Barung Landcare established its own nursery and contracting service, making it a profit based organisation.

Overall, The Lake Baroon Catchment was chosen as the most appropriate place for this research because water quality is in need of improvement, the majority of the catchment is owned by private landholders making their participation imperative, and there are a variety of

NRM groups in the areas who conduct on-ground catchment care activities. This provides an ideal case study to understand issues surrounding landholder participation in catchment care activities.

## **1.5 Conclusion**

This chapter has situated the project within the broader scope of conservation practices in Australia. It has engaged with the idea that a landholder's willingness to embrace conservation may be influenced by their relationship with the NRM agencies responsible for the distribution of grant-based conservation projects. It has further situated this study to be a question of strategic catchment management, highlighting the empirical nature of the problem of non-point sources pollution, and therefore the need for the majority of landholders within a catchment to participate in conservation projects. It has outlined the types of on-ground catchment care projects that are undertaken with landholders. Furthermore, it introduced the case study of The Lake Baroon Catchment, its specific water quality problems, and the NRM agencies operating within the area that conduct on-ground catchment care projects with private landholders.

Chapter Two will introduce and outline the way in which trust will be used as a conceptual tool for this study.

Chapter Three outlines the methodology developed to understand the role of trust in determining whether landholders allow catchment care activities to be conducted on their properties. It will also discuss some limitations associated with the chosen approach.

Chapter Four outlines the results of this thesis relating to the emergence of common ‘drivers’ that promoted trust (or distrust) between landholders and NRM agencies.

Chapter Five outlines the results of this thesis relating to how landholders trust relationships varied between Seqwater, Barung and the LBCCG.

Chapter Six discusses the results in relation to the existing literature on trust, and goes beyond to explain the two key findings of this study.

Chapter Seven concludes this thesis, synthesising its aims and key findings. It outlines the contributions that have been made, implications for policy and recommendations for future research.

# Chapter Two - The Role of Trust

## 2.1 Introduction

Chapter One outlined the case for conducting on-ground catchment care activities with landholders, and argued that trust is a critical factor and conceptual tool for addressing issues around water quality in a catchment. The aim of this chapter is to build on the role of trust as a conceptual tool for understanding landholder engagement in catchment care activities.

Trust is a concept that has been studied in a wide range of disciplines from economics and political science to behavioural psychology, with each discipline focusing on different aspects of trust. The literature review will focus on aspects of trust that are consistent across disciplines, relate to trust from a NRM perspective, and those relating to catchment management specifically. The first part of this chapter will outline how trust has previously been studied in the NRM literature, and the second part will establish how trust will be understood and used as a concept for this study.

## 2.2 Trust in Natural Resource Management

It is generally agreed that trust is important in building and maintaining positive relationships between NRM agencies and communities impacted by management actions and plans (e.g. Davenport et al., 2007; Marshall, 2004; Graham, 2014). The need for trust arises because many environmental planning processes involve considerable complexity and controversy stemming from the need to balance the multiple values and competing interests of diverse stakeholders. As a result, the study of trust in the field of NRM almost exclusively focuses on the levels of trust required to enable the formation and implementation of policy and management decisions. To this end, trust has been conceptualised as a critical component for solving *collective action problems* (Hardin 2002; Lubell, 2004; Graham, 2011) and

facilitating environmental *public participation* processes (Davenport et al., 2007; Johnson and Scicchitano, 2009). Trust has also been identified as a key factor in influencing the social acceptability and legitimacy of *management strategies* for a variety of issues such as endangered species policy and watershed management (Trachtenberg & Focht, 2005; Stankey and Shindler, 2006; Leahy and Anderson, 2008). Furthermore, trust has been shown to mitigate opposition and scepticism between communities and NRM agencies (Wondolleck and Yaffee, 2000).

Some argue that trust is so coveted because the effects of distrust can be destructive. Public distrust, especially local community distrust, can have severe implications for the quality and durability of natural resource policy and management decisions (Davenport et al., 2007).

Distrust has long been recognised as one of the biggest obstacles to effective NRM (Leahy and Anderson, 2008). In particular, it has been noted that historical distrust in government, an agency, or in the management of a particular public resource can create an atmosphere of cynicism that is difficult to dispel (Lawrence et al., 1997).

The Lake Baroon Catchment requires a different outlook on trust and distrust, not as central to a collective action problem, nor in order to legitimise and increase acceptability of policy decisions; rather, to understand the joint undertaking of on-ground catchment management activities by landholders and NRM agencies on a singular landholding.

### **2.3 Towards an Understanding of Trust**

There are many types of trust identified in the literature. However, for the scope of this project, interpersonal and institutional trust are the most relevant. Interpersonal trust relates to the trust between two individuals. Institutional trust refers to the trust between an individual

and an institution such as a government agency or a non-government organisation. Although these are two distinct scales, and should be thought of as separate entities, they are often integrated in NRM studies. In this thesis they are clearly delineated, as Lewicki and Wiethoff (2000) argues, interpersonal and institutional trust and distrust can co-exist because it is possible to trust a particular person within an agency, but not the agency itself, and vice versa. Within previous NRM studies relating to trust, the interpersonal relationships examined have been those that exist among landholders (e.g. Graham, 2011) or between landholders and agency staff (E.g. Sharp & Curtis, 2014). Institutional trust has been studied between landholders and a variety of government organisations, at different scales (local, state and federal) (e.g. Lubell, 2007).

For the purpose of this thesis, interpersonal and institutional trust will be considered to involve a three-part relation influenced by the characteristics of a trustor, the characteristics of a trustee, and the context over which trust is conferred (Mayer, Davis & Schoorman, 1995; Kramer, 1999; Hardin, 2002). To put simply, actor 'A' trusts actor 'B' to do 'X'. In this three-part definition, trustor refers to the landholder and the trustee refers to the individual or institution seeking the trust of the landholder. The landholder assesses the trustworthiness of the trustee and chooses whether they are worthy or unworthy of trust. The context over which trust is conferred refers to conducting catchment management activities including:

- Revegetation (particularly riparian)
- Stock waterway crossing
- Off-stream watering
- Hardened laneways

Trust relationships are dynamic and may change over time; for example, in some scenarios, the roles of the trustor and trustee may reverse. Similarly, mutual trust is a case where each

partner is simultaneously a trustor and a trustee (Hardin, 1993; Giddens, 1991). However, given the space constraints of an honours thesis, this study only focuses on landholders trust in institutions and their staff.

Each of the three parts of trust will be outlined in more detail in the following three sections.

### **2.3.1 Characteristics of a trustor**

Characteristics of a trustor have been discussed in the literature in terms of their willingness to take a risk by trusting someone, is based on their relative level of vulnerability, previous experiences and personality. These are important factors to take into account when evaluating why a trustor decides that a trustee is worthy or unworthy of trust.

#### *Risk & Vulnerability – A prerequisite for Trust*

A core aspect of most definitions of trust is the intention to accept vulnerability based on the positive expectations of another (Rousseau et al., 1998). Included in this definition is the assumption that accepting vulnerability involves taking a risk, if there were no risk, there would not be any need for trust (Gambetta, 1998). Based on the work of Li (2012), it is clear that trust tends to matter the most when either the uncertainty of unmet expectations is high or when the stakes (e.g. financial loss) of unmet expectations are high. Therefore, understanding the relative risks and vulnerability of the landholders in this study is important for understanding why they may, or may not, choose to trust another.

#### *Dispositional Trust*

Previously, literature around trust has been dominated by Rotter's (1971) generalised trust theory (or dispositional trust), which discusses an individual's general tendency to trust or

distrust others, regardless of the context. The strength of an individual's dispositional trust is generally attributed to their early-life social interactions, which form a relatively stable personal characteristic. Previous research has demonstrated how individuals' dispositional trust can influence their trust in a NRM agency (e.g. Scheufele and Shah, 2000). Leahy and Anderson (2008) found that when individuals lacked information and experience with the management agency they defaulted to their disposition towards society as a whole; conversely, if individuals had specific knowledge or experience with the agency, their willingness to trust the agency was based on that information as opposed to their generalised beliefs. However, Smith et al. (2012) and others argue that there is little support for a consistent and significant relationship between individuals' general trust and their willingness to become involved in NRM efforts. Since the aim of this thesis is to understand how institutions can build trust with landholders, dispositional trust is less relevant because it is stable personality characteristic and cannot be influenced, therefore it will not be considered in this study.

### *Past Experiences*

Studies have shown individual's perceptions of other's trustworthiness and their willingness to engage in trusting behaviour when interacting with them is largely a history-dependent process (Boon & Holmes, 1991; Kramer, 1999). This links the trustor with their previous (context-specific) experiences; such as whether their previous trusting relationships were reciprocated or violated. Particularly within NRM, many studies have found that a historically deep-seated distrust of government directly influenced individuals' willingness to trust the agency in future management decisions (e.g. Davenport et al., 2007; Stern 2008).

Landholders in this study may have had past-experiences with Barung, LBCCG or Seqwater that impacts on their willingness to trust these agencies in the future. Notably, Seqwater is a government organisation and may be subject to a distrust of government as noted.

### **2.3.2 Characteristics of a trustee**

Characteristics of a trustee (individual or institution) are the things that the trustor considers when assessing trustworthiness. This often involves expectations about moral and technical competency, familiarity, and shared values. In all cases, it is argued that if the trustee demonstrates the necessary characteristics, trust will be warranted.

#### *Moral & Technical Competency*

As previously noted, a core aspect of most definitions of trust is the intention to accept vulnerability based on the positive expectations of another. Therefore, a trustor often makes an assessment of whether they believe that the trustee will meet their expectations before granting them trust. There are several characteristics, or trust-warranting properties, that previous literature has noted to be included in this assessment; the most prominent of which is the trustees' moral and technical competency. Included in moral competency is a focus on willingness (Levi, 2000), intentions (Rousseau, et al, 1998), goodwill (Burke & Stets, 1999) and promise keeping (Leach & Sabatier 2005). Technical competency often refers to specific abilities, capability and competency in general (Barber, 1983; Baier, 1986; Levi, 2000; Keele, 2007). Indeed, Nooteboom & Six (2003) argue there are two types of trust: goodwill and competence.

Smith et al. (2012) argues that in NRM, local community members describe their trust in a management agency as a product of whether or not that agency would make ethically-

grounded decisions (moral competency) guided by the best available scientific and technical knowledge (technical competence). Similarly, Leahy et al. (2004) argues that moral competency is demonstrated when local community members believe a resource manager puts the needs of others before their own needs and technical competency is when local community members believe a resource manager has the expertise to make decisions.

In this study it was anticipated that landholders would have varying expectations about moral and technical competency associated with conducting catchment care activities on their property, and that the institution themselves will have different skills and motivations for engaging landholders.

### *Familiarity*

Luhmann (1979) and Hardin (1993) emphasise the importance of close "thick relationships" in substantiating trust. Familiarity represents more than just a past-experience, it refers to the frequency and closeness of the interaction. Increased visibility of conduct under familiar and intimate conditions breeds trust, and by implication, anonymity and distance breeds distrust Levi (2000).

In terms of developing relationships with NRM institutions, the development of familiar relationships is argued to be restricted by institutional structures (Lubell, 2007). Landholders have been found to be less willing to trust institutionally 'distant' agencies that infrequently interact with local communities. Notably, LBCCG and Barung operate at a similar institutional distance as they are both community based organisation. It is therefore possible to examine if they have similar levels of trust based on their institutional distance.

Furthermore, Seqwater operates across the whole of South East Queensland and is an institutionally distant agency in comparison.

### *Shared Values*

Earle and Cvetkovich (1995), in their salient values similarity model of trust, introduce the idea that individuals have a set of salient values that determine an individual's sense of what the important goals and processes are that should be followed in a particular situation. It is argued that if the trustor and trustee have similar values, then it is more likely that the trustor will consider the trustee to be worthy of trust.

A belief in shared values is one of the most commonly identified factors affecting individuals' trust in NRM agencies (Smith et al., 2012). Cvetkovich & Winter (2003) found a positive correlation between feelings of similar values towards threatened and endangered species and trust in the U.S. Forest Service among residents living near national forests in northern California. Similarly, Vaske et al. (2007) found a significant and positive relationship between similar values toward wildfire management and trust in forest management agencies. Furthermore, Needham and Vaske (2008) found a correlation between perceived similarity in values and trust in state wildlife management agencies. Overall, the collective body of research on perceived shared values and trust indicates that it is a significant driver of trust or distrust in resource management agencies. However, some such as Lijebblad (2005) argue that one-dimensional measures of trust, such as shared values are overly simplistic as they do not account for other components of trust that are identified in the trust literature, such as past-experiences and familiarity.

In this study it was expected that landholders would have common values about the important goals and processes for land management in relation to catchment care. As previously mentioned, Barung is an ecologically focused organisation while the LBCCG also supports productive landholders. Therefore, the impact of diverse values on landholders' trust can be examined.

### **2.3.3 Context**

In previous studies that have applied principles of dispositional or generalised trust (see 2.3.1), there has been an assumption that people apply broad attitudes about the trustworthiness of others to every trust-based relationship. To clarify, in this model of trust actor A trusts (or distrusts) actor B, regardless of the specific characteristics of actor B. This is because it is assumed that A applies the same attitude to every trust relationship. Moving on from a generalised theory of trust has been literature that focuses on characteristics of the trustee, which may impact on assessments of trustworthiness (see 2.3.2). In this model, actor A trusts actor B based on a set of characteristics that are assessed by actor A, i.e. a two-part conceptualisation of trust.

However, in recent studies, there has been a focus on moving towards a context specific understanding of trust. For example, Burns, Kinder, and Rahn (2003) specified differences in generalised trust, workplace trust and neighbourhood trust. This suggests that it is appropriate, indeed necessary, to specify contextual variables that are unique to studying trust within a particular context. Furthermore, implicit within the context may be an activity in question. As noted by Cook, Hardin & Levi (2005), it is unlikely that actor A will trust actor B unanimously; rather, A will trust B with regards to a specific activity in question. Therefore, creating the three part definition of: actor A trusts actor B to do X.

Despite a move towards a more context-specific understanding of trust in NRM literature, studies such as Lubell (2007) have tended to focus on a specific context, such as agricultural water policy, but applied a generalised trust theory as part of the conceptual framework, and therefore failed to highlight the particular variables that made studying trust in this context unique. In this sense, this role of context in NRM studies on trust requires further investigation.

This project, like many NRM studies on trust, focuses on the relationship between landholders and NRM agencies. However, unlike most other studies on this topic, it does not concern the development and broad implementation of policy. Rather, it aims to examine the individual relationships that form over the undertaking of on-ground projects on a landholder's property. There are likely to be varying degrees of risk and expectations associated with all four catchment care activities used in this study, meaning that the role of trust will perhaps be varied according to the activity in question.

## **2.4 Conclusion**

In the first section of this chapter it was shown that trust has been a useful conceptual tool for many other NRM studies. However, so far these have been orientated toward policy development and participation; whereas this study focuses on the on-ground implementation of catchment management activities. The second part of this chapter has provided an understanding of trust as a three-part relation involving characteristics of a trustor, characteristics of a trustee, and the context over which trust is conferred: actor A trusts actor B to do X. While the literature on trust is moving towards a more context specific understanding of trust, the theories proposed about why actor A might choose to trust actor B

have been developed in isolation of the broader context and/or activity in question. This highlights a literature gap that will be addressed in this study.

The primary aim of this study is to explore general factors that lead landholders to allow NRM institutions to implement catchment care activities on their properties in the Lake Baroon Catchment, QLD. The following research questions have been developed to achieve this aim:

**1) What is the role of trust in determining whether landholders conduct catchment care activities on their properties?**

- i. What characteristics of the trustor, trustee and context determine whether landholders trust NRM institutions and their staff?**
- ii. How do trust relationships between landholders and NRM institutions vary?**

## **Chapter Three- Methodology**

### **3.1 Introduction**

This chapter outlines the approach and methodology used in this thesis to understand the role of trust in determining whether landholders agree to conduct catchment care activities on their properties. As the literature reviewed in chapter 2 indicates, there are few, if any, empirical studies in the discipline of NRM which have studied the role of trust outside of a policy context. The literature also suggests that few empirical studies have sought to explicate the context dependence of trust, simply focusing on the A-B relationship. A qualitative methodology was chosen for the study as it would allow for the collection of rich, in-depth responses required to answer the research questions. As noted by Marshall and Rossman (1998), qualitative research methodologies are especially appropriate when exploring complex, dynamic phenomena such as trust. This project included a singular case study, purposefully-selected participants and semi-structured interviews.

### **3.2 Methodological Approach**

Underlying this research design was an interpretive social science perspective (Neuman, 2006) which believes that social reality does not exist independently of humans. It is created through purposeful actions of social beings. This paradigm comes from an ontological standpoint of relativism, in which multiple, fluid interpretations of reality are possible (Guba & Lincoln, 1998). The aim of research is not to develop generalisations; but rather, it focuses on how everyday social experiences form an individual's understanding or meaning of the world. It attempts to describe and interpret these everyday experiences, and identify a 'consensus' of meaning.

The methodology for collecting empirical data for this project was largely shaped by the conceptual framework around trust developed in Chapter 2. In this sense the project seems fairly deductive. However, as advocated by Layder (1998); in addition to acknowledgement of existing theory, there was an ongoing dialogue between this theory, data, and theory that emerged from the data. Therefore, this research used both inductive and deductive techniques.

### **3.3 Case Study**

Using a singular case study for this study was considered most appropriate because it allowed for an in-depth examination of a real-world situation; case studies are particularly useful for providing a greater insight into the importance of context (Yin & Davis, 2007). As outlined in Chapter 1, The Lake Baroon Catchment was chosen as the most appropriate place for this research. This is because water quality is in need of improvement, the majority of the catchment is owned by private landholders making their participation imperative, and there are a variety of active NRM groups in the area who conduct on-ground catchment care activities. The Lake Baroon Catchment provides an ideal opportunity to understand issues surrounding landholder participation in catchment care activities, and where landholders' perceptions of a number of organisations can be obtained. The LBCCG operates on a 10-year funding program which provides a unique and rare opportunity to examine the effectiveness of long term funding commitments to community based NRM organisations. As Barung Landcare is a similarly localised community based organisation operating on a more traditional funding model, there was opportunity to provide a comparison between the two. Moreover, it was a practical choice because I was familiar with the area and had pre-existing contacts with landholder and NRM institutions which would aid the recruitment process.

### **3.4 Semi-Structured Interviews**

Semi-structured interviews were chosen because they complement the case study approach to understanding how characteristics of the trustor, trustee and context determine whether landholders trust Seqwater, Barung or the LBCCG, and how trust relationships vary between these institutions. They also allow in-depth responses and the flexibility to pursue relevant points arising in the course of the interview (Neuman, 2011). Interviews were conducted over a three week period during June/July 2013. Interviews ranged in length from 13 minutes to 120minutes. The average interview length was 45 minutes and these were conducted for the most part in people's homes and workplaces.

For landholders, questions were asked pertaining to: 1) their motivations and the values they place in land management; 2) perceptions, attitudes and behaviour towards the three institutions; 3) how this may vary according to the activity or situation in question; and 4) basic demographics (see Appendix A for full list of questions). In chapter 2, a number of drivers of trust such as familiarity and technical competency were outlined. These were not specifically mentioned in the interviews, as it was hoped that they were emerge out of the data thorough general questions about the trustworthiness of institutions.

For staff members, questions were asked pertaining to their relationships with landholders, the relative importance of trust in engaging landholders, broader contextual information about the catchment, and their own operations (see Appendix B,C & D). Interviews were digitally recorded and later transcribed. Throughout and directly after the interview, the researcher took notes detailing body-language and other non-verbal cues.

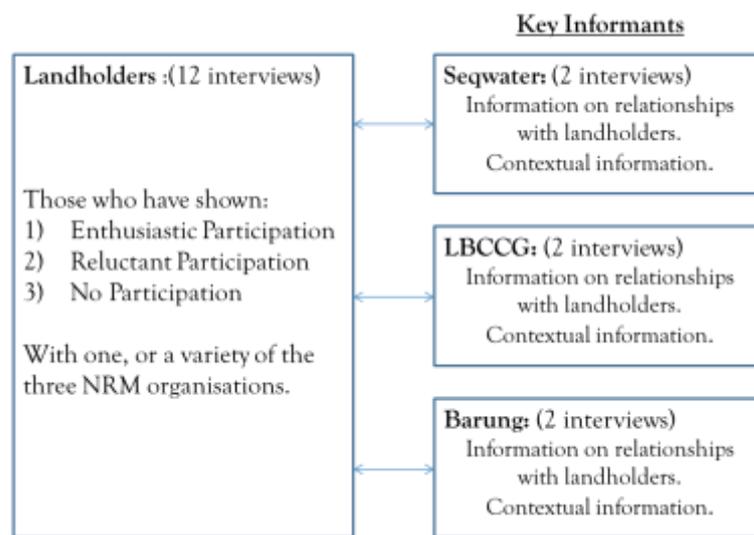
### **3.5 Participants & Sampling**

Participants were approached through the researcher's own networks and asked to recommend other landholders who met the selection criteria and who they believed may be willing to be interviewed, i.e. snowballing (Patton, 2002). The names and contact details of these individuals were taken down and considered for selection. Landholder participants were strategically selected (as described below) using purposeful sampling, as Patton (2002) discusses "what would be 'bias' in statistical sampling, and therefore a weakness, becomes an intended focus in qualitative sampling, and therefore a strength" (p.g. 230). A total of 18 participants were selected because this allowed for a range of in-depth perspectives to be obtained from landholders and members of the three key institutions interested in catchment management (Seqwater, LBCCG and Barung). At this point, interviews had reached data saturation whereby no new information or themes were being observed (Guest, Bounce & Johnson, 2006).

The landholder participants selected all owned a property sized over 50 acres and had a major waterway running through their land. This ensured that interview questions pertaining to catchment care activities, such as riparian revegetation, applied to all landholders interviewed. The purposiveness of landholder selection rested on their previous level of engagement with catchment care activities, aiming to select a sample with variation in their previous level of engagement. Landholders were asked to recommend others who they knew had not participated, reluctantly participated or enthusiastically participated in conducting catchment care activities with Seqwater, LBCCG or Barung. When selecting a small sample of diversity, the data collection and analysis are expected to yield two kinds of findings: (1) high-quality, detailed descriptions of each case, which are useful for documenting uniqueness, and (2) important shared patterns that cut across cases and derive their

significance from having emerged out of heterogeneity (Patton, 2002). Indeed, whether landholders had engaged in catchment care activities or not, the results would yield in-depth findings which documented landholders' rationale for choosing to trust or distrust the variety of NRM organisations operating within the area.

Figure 4 below clearly maps out the sampling frame of twelve landholders and key staff members from Seqwater, LBCCG and Barung.



**Figure 4 - Sampling Frame**

Table 1 below provides some key characteristics of the twelve landholders recruited for the study. Only two participants who had not participated in catchment care activities could be identified in the field, despite purposeful sampling attempting to gain a heterogeneous sample in this field. As can be seen, the sample is diverse in other areas such as land use, history, property size and gender.

Note that, participants with the gender description of both 'male and female' in Table 1 were cases in which both landholders in a couple were interviewed together. It was believed that this would not compromise the data as both male and female landholders in a couple make

decisions about whether or not to trust institutions and participate in catchment care activities. This meant that there were 16 individual participants and 12 formal interviews.

**Table 1- Participant Characteristics**

	Landuse	History	Property size	Age	Participation	Gender
Landholder 1	Revegetation	First generation	50	70	Enthusiastic	Female
Landholder 2	Hobby farm	First generation	162	55	Reluctant	Male and Female
Landholder 3	Primary production	Second generation or more	1000	67	Reluctant	Male
Landholder 4	Hobby farm	Second generation or more	150	59	Enthusiastic	Male and Female
Landholder 5	Primary production	Second generation or more	150	67	No Participation	Male and Female
Landholder 6	Revegetation	First generation	134	77	Enthusiastic	Male and Female
Landholder 7	Revegetation	First generation	72	72	Enthusiastic	Female
Landholder 8	Hobby farm	First generation	76	73	Enthusiastic	Male
Landholder 9	Primary production	Second generation or more	480	60	No Participation	Male
Landholder 10	Primary production	First generation	650	46	Reluctant	Male
Landholder 11	Primary production	Second generation or more	320	59	Reluctant	Male
Landholder 12	Hobby farm	First generation	120	72	Enthusiastic	Female

### 3.6 Data Interpretation

‘Interpretation’ is used in place of ‘analysis’ as this project embodies the philosophical stance denoting that we can only know the world through examining interpretations of it (Neuman, 2006). In order to find common shared patterns across the variety of participants, transcribed interviews were interpreted using the NVivo 10 software package and coded for themes and content. Coding refers to the process of reducing data by applying particular labels and names to classify sections of text (Layder, 1998). Furthermore, memos were written to generate discussion and self-dialogue about the codes, the meaning of particular codes, and how they are connected.

Responses were coded to identify various ‘drivers’ of trust, project characteristics, associated concepts, properties of trust, and distrust. Responses directed at a particular institution were coded to represent which institution that landholder was speaking of. This allowed for two types of results: 1) the emergence of common ‘drivers’ of trust, regardless of the institution in questions; and 2) a collaboration of dialogue directed at each of the three institutions in question. Overall a total of 40 nodes were used to represent various aspects of trust, project

characteristics and variances among institutions, with an average of 59 coding references made per interview.

### **3.7 Ethics**

Ethical considerations were addressed by adhering to the National Statement on Ethical Conduct of Research (2007). This involved submitting an ethics application to the MSLE Human Ethics Advisory Group. All participants were provided with a plain language statement (Appendix E) and asked to sign a consent form before being interviewed and recorded. Throughout this thesis, participants will be referred to by a pseudonym. In particular, as very few staff members were interviewed, quotes made by staff members will simply be referred to as ‘staff’ as opposed to defining which organisation that interviewee is from. In addition, quotes made by landholders that refer to a specific staff member directly will replace the name with an asterisk in order to ensure anonymity.

### **3.8 Conclusion**

This chapter has explained the methodological approach taken in this thesis. It has also outlined some characteristics of the participants and considered some limits in the sampling. These limitations were not considered to have impacted the research in any significant way; the methodology originally envisaged was effectively put into practice. The methodological approach generated rich qualitative data on how characteristics of the trustor, trustee and context determine whether landholders trust NRM institutions, and how trust relationships vary between institutions. This met the research objectives and allowed for significant findings to emerge, which will be discussed in the next two chapters.

## Chapter Four - Drivers of Trust (Or Distrust)

### 4.1 Introduction

This chapter will present the findings that will help answer the first research sub question: What characteristics of the trustor, trustee and context determine whether landholders trust NRM institutions and their staff? It will do so by exploring the emergence of common ‘drivers’<sup>1</sup> that promoted trust (or distrust) between landholders and various individuals/institutions. These were characterised by: (1) the characteristics of the trustor; (2) the characteristics of the trustee and; (3) the nature of the relationship. In particular, it outlines the common patterns in landholders’ reasoning regarding trust or distrust, regardless of the specific institution or activity they are referring to. Where relevant, it also provides the views of staff that confirms or provides additional evidence about the factors that drive landholders’ trust in them. By doing so, this chapter will provide a platform upon which a deeper understanding can be developed of the nuanced ways that these drivers emerged for each organisation and the different activities.

Notably, the way that the results are presented below does not directly align with the way the literature review was organised. It was believed that characterising drivers of trust into these three categories made more logical sense than how it has been previously pictured in the literature. For instance, within the literature, shared values was said to be a characteristic of the trustee. However, within the results, it has been classified as being a characteristic of the relationship, because values are shared between the trustor and the trustee, rather than simply being a characteristic of the trustee.

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<sup>1</sup> The term ‘driver’ is an antecedent used in this study as an umbrella term to describe a propelling factor of trust (or distrust).

Throughout this chapter landholders refer to the trustworthiness of both individuals and institutions. In some cases, landholders' trust in individual staff members impacted on the trust in the institution as a whole, and vice versa. Furthermore, some drivers were more specific to individuals while others were more specific to institutions. The final section of this chapter will outline the costs, benefits and risk associated with relevant catchment care activities, because the role of trust often differed depending on the activity in question. Understanding landholders' perceptions of costs, benefits and risk is an important step in establishing a deeper understanding of trust in the specific context of catchment care.

## **4.2 Characteristics of the Trustor**

Landholders had several defining characteristics that informed their decision-making and affected the way they assessed the trustworthiness of others. In this sense, characteristics of the trustor are not necessary drivers of trust, rather, a lens through which landholders assess the trustworthiness of others.

### **4.2.1 Land Use Values**

While shared values were discussed in the literature review as a characteristic of the trustee, it is necessary to first determine what the values of the trustor are, before it can be determined whether shared values exist. The results showed that there were two key values that determined landholders' sense of what the important goals and processes are with regards to land use. These can be described as ecological and productivity values.

*Ecological Values* - these participants believed in restoring the land to its 'original' state, aiming to revegetate the entire property and create habitats for wildlife. They had a strong sense of social altruism and/or believed in the intrinsic value of nature.

I'm revegetating. The cattle have been removed, quite reasonably recently, about nine months ago or a year ago and we're seeing the return of wildlife. It's just great, I mean all this was bare and there was erosion and all sorts of stuff and I've been vegetating all the gullies and creeks and springs and things. I find it very rewarding.  
(Landholder 1)

*Productivity Values* - these participants considered themselves to be stewards of the land and believed that a healthy environment encompassed green pastures, no weeds and revegetation only on river banks, slopes, bogs and other areas that were difficult to manage. These participants aimed to support a healthy environment, but not at the expense of their grazing pastures.

Really the only projects we are looking at, when you've got cattle on a property, you're only looking at like your slip areas, your creeks, you're not looking at planting trees all over your property because you've got no grass left in the interim but I suppose it's really only common sense projects that you're looking at basically.  
(Landholder 12)

I wouldn't sacrifice my beef operation for more trees unless it was to stabilise or make better, but just to have more trees, no. I wouldn't. If you're going to sacrifice something, you've got to gain on the other side. (Landholder 8)

Perceptions of the trustworthiness of others were characterised by a desire to interact with institutions that shared land use values, and offered projects that would assist them in meeting their goals (see section 4.4.1).

### **4.2.2 Experience**

The results showed that participants had varying degrees of experience in land management, but broadly, they could be categorised into lifestylers and established landholders.

*Lifestylers* - were those participants who had recently moved from the city for lifestyle reasons, and knew little in terms of land management. This included people who only lived on the land for enjoyment and some hobby farmers. Perceptions of the trustworthiness of others was characterised by their own lack of experience, and often not knowing what to expect of the process, outcomes and maintenance of a catchment care project.

*Established* – were those participants who were second generation or more, or had well developed skills in land management. This mostly included primary producers, and some hobby farmers. Perceptions of the trustworthiness of others were characterised by a pre-existing knowledge of land management and the costs, benefits and risks involved in catchment care activities.

## **4.3 Characteristics of the Trustee**

Landholders assessed particular characteristics of the trustee in order to determine whether they were worthy or unworthy of trust. Meeting expectations about these characteristics were seen as being a trust-warranting property. The characteristics that landholders assessed were the technical competency and moral competency of institutions and their staff, as well as their capacity to help (time and resources).

### **4.3.1 Technical Competency**

For landholders, technical competency meant that the trustee (individual or institution) was perceived to have the relevant skills and knowledge to design and carry out a desirable on-

ground project. Having experience with on-ground work, ability to assess costs and benefits, knowledge of land management practices (including stock handling), and avoidance of ‘textbook’ blanket decisions increased the chance that trust would be attributed.

I knew that those things [on-ground conservation projects] had to be done, and that people like the Catchment Group or Landcare groups probably could offer me some financial assistance, as well as knowledge and skills to assist me. (Landholder 2)

Well I think he [NRM institution staff member] understands the land. In saying this maybe some of the people perhaps within the group don’t understand maybe quite so much but I think he’s got perhaps more of an understanding. (Landholder 12)

Several landholders considered local knowledge of the area to be important:

I think they [LBCCG] do have a local perspective on the local knowledge, on what the issues are for this area and region. They more often than not know the right people to get in to do a specific job, and are familiar with pitfalls for certain projects, or certain types of projects in this area. (Landholder 2)

We mightn’t know best ourselves but we have more of an understanding than someone who isn’t here when these events [flooding] are taking place, just where the water flows come from because you have to see it to believe it. (Landholder 5)

While technical competency was commonly referred to, most landholders focused on the lack of technical competency as a cause for distrust: “I can give you several examples in the local area where what they’ve [Barung] done is a disaster and I mean a disaster” (*Landholder 9*). This was particularly applicable when they were discussing Landcare or voluntary community-based organisations. In these instances a lack of technical competence meant a lack of skills or knowledge of land management practices within an organisation:

The people that were attracted to it [Barung], had never been landholders, knew absolutely nothing about what they were talking about in terms of looking after land and yet they were becoming the voice of the organisation. (Landholder 9)

### **4.3.2 Moral Competency**

In general, moral competency referred to the individuals' or institution's motivation to undertake catchment care activities. Worthy candidates for trust demonstrated that their motivation did not merely rest in their own immediate interest, but that they were also concerned with the interest and well-being of the landholder. Important standards of behaviour included openness, honesty, fairness, concern and amenability.

\*\*\*\* is the only one I know and I relate quite well to him. Yeah. I think he – in fact, I think he's really keen to get opinions and get his feet on the ground where the problem is with people that have observed it... That's why he said, "Look, can I bring these other guys?" because he was really keen to have my opinion and the knowledge that I had of what had been planted and where it had all gone wrong. So I mean he's fine. (Landholder 8)

Largely, landholders who referred to moral competency did so in the context of distrusting Seqwater, and often moral competency was spoken of in conjunction with technical competency:

They [Seqwater] weren't honest, they weren't decent neighbours, they didn't tell us the truth, they lied, they tried to sue us and cause us a great deal of grief and money.... No way, I'd never trust any of them. I've just told you the tip of the iceberg... (Landholder 9)

And that's not to say there aren't people in there that can't do a good job, but they [Seqwater] have an officious nature to them. That's just the way that Government organisations are run I guess... And in fact, you know, just the common-sense approach says, that whenever you deal with Government they're untrustworthy (Landholder 2)

#### **4.5.1 Capacity to help (time and resources)**

Landholders and NRM staff members mentioned that individuals or institutions that had the capacity to help were considered worthy candidates for trust. In particular, this referred to: 1) institutions having adequate resources, particularly funding, to conduct catchment care activities and carry out maintenance; and 2) individuals having the time to help landholders with various activities such as grant applications, maintenance and advice on the policy and regulation regarding water quality and management.

\*\*\*\* will do all the homework for me and say, "Righteo, if you're prepared to do that much fencing and that crossing there and what have you, we will do this for the first three years." And I'll say, "Yeah, okay." So he does - he makes it easy for me. He does the work. (Landholder 4)

I mean \*\*\*\* comes out here and he checks the progress and offers assistance if I need it to apply for extra funding and he's very supportive I've found. (Landholder 1)

Not being able to help was a driver of distrust, particularly once a reputation had been established:

They [landholders] trust me that I can actually help them and if I turn around and say no, sorry, too hard, can't help you, you lose trust, you lose face. (Staff 3)

## **4.4 The Relationship**

Developing certain types of relationships was seen as being a trust warranting property. These were: having a relationship based on shared values; having a relationship based on empathy and respect; and, developing a familiar relationship. Furthermore, relationships were characterised by landholders' past experiences with the institution in question, and the landholders pre-existing judgements based on the reputation of the institution in question. Each of these aspects is described below.

### **4.4.1 Shared Values**

Most of the landholders and NRM staff members spoke about having a relationship based on shared values. In general, individuals/institutions that had similar land use values were considered to be trustworthy. For landholders with ecological values, warranting trust was often not an issue as all institutions in the catchment were prepared to conduct revegetation projects that were consistent with their land use values. However, for landholders with productivity values, warranting trust required the organisation to conduct catchment care projects that had a productivity incentive.

My whole modus operandi is like I'm a production-based system ...that's the argument I get into with a lot of Catchment Care and Landcare organisations is they just want me to plant out areas because to make them feel good, but to me it's got to...I've got to have a production incentive. (Landholder 11)

Some of them [landholders] probably will be difficult to engage, you know we probably never will engage with them. Some of them sort of - their beliefs, they don't believe in anywhere near what we're thinking. (Staff 2)

#### **4.4.2 Empathy-Respect**

Having a relationship based on empathy and respect was particularly relevant for dairy farmers in the area who were second generation farmers or more, and struggling since the deregulation of milk prices in 2000. In particular, a large component of this driver involved NRM institutions not telling a landholder what to do with their property because this was considered an insult and lead to distrust:

So if any grant or anything like that, we would be wanting to be fully engaged in what the plan was so that our knowledge and understanding of the land is part of that. Not just being told this is the regulation, you've got to do it this way because we know best. (Landholder 5)

Too often we have people come to the catchment and try and tell people what to do and the one rule in this job is you never tell anybody what to do, never, because that's when you lose trust immediately and you can't continue to build that relationship or engage. (Staff 3)

They [the landholders] might have been on that property for years and years and years. Have a sense of connection to it that I don't understand and don't know. So yeah it's not really my place to be coming in and dictating to people I suppose, and it does put people off (Staff 1).

Having empathy for the dairy farmer's circumstances, particularly in relation to their financial capacity to maintain the environmental health of their property since deregulation of the dairy industry, was also considered by some interviewees to be a trust-warranting property:

So I like to think I have an empathy for landholders, I know what they're facing, it's tough and often, especially up around here in Maleny, the farmers are often called environmental vandals and that's disgusting, I hate that and its attitude. (Staff 3)

#### **4.4.3 Familiarity**

Staff members in the NRM institutions emphasised the importance of having frequent interactions with landholders in order to build up a trusting relationship over time.

Landholders noted that it made them more comfortable and willing to trust an individual staff member who they had gotten to know and were familiar with:

These are individual relationships that have been developed over time, so I've learnt to trust those people... it's a known entity, and that's what makes me feel comfortable. (Landholder 2)

They [project officer] could spend a lot of their time in that project period just learning to engage and meeting land holders and gaining their trust and building up a rapport with them, and they might achieve some results. (Staff 1)

A lot of it hinges on the relationship that person develops with the land holders, and that takes time. It takes, you know, sitting around their kitchen having cups of tea, walking their land with them and slowly but surely building a relationship. (Staff 4)

Institutions that had one key individual who interacted with landholders were trusted more as it allowed for the development of familiar relationships. It was noted that in institutions such as Seqwater, landholders were dealing with a different person each time and this was a driver of distrust:

Well I would prefer to deal through the Catchment Group because they are local people, local employees, and those are people that I trust and have a long-term relationship with. I must say my experience of dealing with Seqwater is that people fly-in and fly-out so to speak... I think it's nice being able to deal with the same person a lot of the time... So you know that the person you deal with on day one is probably going to be the person you're dealing with in a few years' time as well.

(Landholder 2)

When landholders had built up a familiar relationship with an individual staff member, and that staff member left the institution and ceased to interact with the landholder, it reflected badly on the institution as a whole and was a cause for distrust of the institution generally.

From the landholders' point of view, all they really see is this bloke or this woman kept banging on the door every five minutes and I [they] started to think they were talking a bit of sense and might have been worthwhile; now they've disappeared and gone and there's nothing left again, and that really does destroy that trust. (Staff 1)

#### **4.5.2 Past Experiences (First Hand)**

Past experiences was discussed in the literature review as an attribute of the trustor. However, in these results, past experiences were specific to the institution that the landholder had interacted with, rather than a lens through which all institutions were assessed. In this sense, the relationship was based on landholders' first hand experiences of that particular institution.

Landholders recalled past experiences when discussing the trustworthiness of individuals and institutions in the catchment, and NRM staff members mentioned past experiences as a significant barrier to achieving trust. For landholders, all the references made were in relation

to past experiences leading to distrust. Often these past experiences involved failed catchment care projects or bad experience as a member of a community organisation.

I wouldn't trust them [LBCCG] as far as I could burn them. I don't know some of the people there now, I'm only talking about people I knew... Too many bad experiences. Not nice people. (Landholder 9)

So, I wasn't very impressed with them [Seqwater] either and then being intimately involved with the impoundment because they'd flogged a lot of the land off us, 16 hectares for peanuts and they'd very cunningly, tried to sue us because we refused to pay half of the fencing when they hadn't allowed for any fencing in the resumption. (Landholder 9)

There's still a bit of animosity [amongst landholders] about the construction of the dam, the compulsory acquisition of land around the dam and what was flooded with the dam. Seqwater hasn't had great publicity through the floods over the last few years; there was court action and so forth. (Staff 3)

#### **4.5.3 Reputation (Second-Hand)**

Reputation was not often spoken about directly, but many of the comments that landholders made about other drivers, such as technical competency or values, were based on second-hand information rather than their first-hand experiences. Reputations of institutions served to either: 1) perpetuate existing distrust of the institution; or 2) assist in the recruitment of new landholders into catchment care projects, depending on whether that organisation had a reputation of being untrustworthy or trustworthy, respectively.

Essentially they [various Landcare groups] have a bad reputation as either not making intelligent decisions, asking – having questionable financial practices, or questionable committee practices. (Staff 5)

He said, “Why don’t you go and talk to the catchment group because they might help you with the cost.” (Landholder 8)

In some cases reputation was not discussed in terms of the spoken word, but simply landholders observing the work done on other properties:

Often if I do a project on a property then my next aim will be to go next door because the next door guy will see what’s happened on the neighbours [property]. (Staff 3)

#### **4.5 Catchment Care Activities**

Four key catchment care activities were spoken about in the interviews. These were revegetation, stock waterway crossings, off-stream watering and hardened laneways. All of these catchment care activities contributed to property management in some way as well as contributing to water quality. The risks associated with each activity directly affects trust relationships, because the greater the risk, the more that trust tends to matter (see 2.3.1). Overall, revegetation was seen as an ecologically-focused activity and carried a greater degree of risk associated with its failure rate, timeframe and maintenance, while the other three were seen as simpler, short-term, less risky and with a greater production incentive.

Revegetation can be useful for property management when used to stabilise river banks and landslip zones. It can also be used as a wind break and provides shade and shelter for livestock. Many landholders commit parts of their property that are difficult to access and difficult to manage, such as bogs, to revegetation. The risks of failure associated with this

activity are high because there is considerable risk of drought, flooding and frost.

Revegetated zones are also often fenced off, and become a growth zone for weeds. This puts the rest of the property at risk and requires an ongoing commitment to weed management, particularly within the first three years of planting, in order to ensure the survival of newly planted vegetation.

One major barrier for me to do a revegetation plot as in blocking it, cleaning it out and then not having stock in there would be their weed management strategies, that would be a major issue. (Landholder 11)

Revegetation is probably the riskiest because of the ongoing maintenance, which has to be done, and it has to be done in a timely manner and strategically to enhance the success of a revegetation project. (Staff 2)

Stock waterway crossings and off-stream watering are implemented in addition to fencing waterways off from cattle. The stock waterway crossing provides a single crossing point, often concreted up so that the cattle do not actually walk through the water, and off-stream watering provides alternative water sources for cattle. These are simple, quick and effective activities that have a low risk of failure and little/no ongoing maintenance. In addition, they provide productivity benefits such as ease of cattle movement during floods, better stock rotation, preventing erosion, preventing navel infections, and clean udders (milk quality specific).

Hardening laneways was specific to the dairy industry, which involves moving large numbers of cattle in and out of a dairy each day. During the wet season these laneways become eroded and muddy. Laneway hardening provides benefits for the landholder such as preventing erosion, ease of cattle movement, prevention of navel infections, reduced water use, and

increases milk quality (clean udders). This is a simple, quick and effective activity that has a low risk of failure and little/no ongoing maintenance.

With activities like off-stream watering and crossings and those kind of activities, they're very straightforward and there's very little risk involved with those once they're put in place. Generally speaking they are maintenance-free or very little maintenance required, and so they're very low risk. So from a farmer's perspective those are the most appealing projects if you like, because they carry very little risk, whereas whenever you do planting or things like that, inherently there is a risk and that can't be avoided. (Landholder 2)

Overall, revegetation was seen as an ecologically-focused activity with a relatively higher risk, while off-stream watering, cattle crossings and laneway hardening were all seen as production activities with lower risk. Throughout the subsequent chapters catchment care activities will be referred to as being ecologically-focused, or production-focused. The implications for trust will be discussed in section 6.3.

## **4.6 Conclusion**

There are several factors that landholders take into account when attributing trust (distrust) to individuals and institutions, these involved characteristics of 1) the trustee, including land use values and experiences; 2) the trustor, including technical competency, moral competency and capacity to help; and 3) the nature of the relationship, including shared values, empathy-respect, familiarity, past experiences and reputation.

These emerged as common 'drivers' that promoted trust (or distrust), and were assessed through the lens of land use values and experiences. Furthermore, it was shown that catchment care activities vary in terms of their risk and contribution to production. This has

set a platform upon which a more nuanced understanding of how these drivers emerged for each organisation can be developed in Chapter Five.

## **Chapter 5 – Comparison of Institutions**

### **5.1 Introduction**

This chapter will provide findings relevant to the second sub research question: How do trust relationships between landholders and NRM institutions vary? It will do so by comparing landholders' perceptions and experiences in engaging with Barung Landcare, LBCCG and Seqwater. It will refer to the drivers of trust provided in Chapter Four to explain the extent to which each driver affected landholders' trust in each institution. Notably, perceptions and experiences of each institution varied according to the landholders' values, for this reason perceptions of each institution have been broken into two sections, one outlining the results obtained from landholders with ecological values, and the other outlining the results obtained from landholders with production values. It will also outline the types of catchment care activities carried out by each institution and how they contribute to the broader relations of trust.

### **5.2 Barung Landcare**

Barung Landcare's on-ground projects primarily include revegetation and restoration of riverbanks and wildlife corridors. They are delivered as a single package, normally covering all or some of the cost of the plants, and manual labour during the planting phase. Once planted, the landholder is responsible for maintaining the revegetated zone themselves. Notably, these are all ecologically-focused activities, and are offered to landholders as such. Therefore Barung's ability to gain the trust of landholders was filtered by landholders' land use values. Those with ecological land use values were generally more trusting of Barung due to shared values; however, there was still concern over Barung's capacity to help (particularly maintenance). Those with productivity values were generally less trusting due to divergent land use values, a perceived lack of technical competency, limited capacity to help and a bad

reputation. Overall, it was found that landholders, irrespective of their land use values, experienced a lack of familiar relationships with Barung's staff members.

### *Ecological Land Use Values*

For landholders with ecological land use values, the common factor that drove trust in Barung was having a **shared value** for revegetation and ecological outcomes. Barung's **capacity to help** affected some landholders and not others, depending on their relative level of experience.

In some cases where inexperienced lifestyleers had undertaken revegetation projects, the landholders were often overwhelmed by the amount of maintenance resulting in project failure:

If you are dealing with a new landholder... particularly with people on the smaller blocks or that don't have a rural background and are often quite keen and passionate to plant our huge swathes of country, you've just got to talk them back into something that you think they are going to be able to manage, and really talk them through what the requirements are, particularly with that maintenance and stuff; it's going to take this amount of time. (Staff 1)

The physical remains of these failed projects were often observed by others, and this gave Barung a bad **reputation** in the community as either having a lack of **technical competency**, **moral competency** or **capacity to help**.

I just looked at the [river]banks and Barung came along and planted a lot of stuff but I think one of their problems is, unless they had an agreement with the prior owners that they would maintain it, nobody did... So I don't know how many – how much was planted but it certainly is back to just rubbish. (Landholder 8)

For landholders who were already established and aware of the maintenance required for a revegetation project, Barung's lack of capacity to help with ongoing maintenance was not necessarily a driver of distrust, nor a disincentive to getting Barung's help with revegetation because the landholder's factored this into their expectations.

Most of our contribution's in labour...you have to evaluate your work hours and things, so that you're trying to match your working hours with some proximity to whatever the grant is going to be... It's us wanting to do it and seeking their help in providing funding... and I think we've got a track record of having done what we said we were going to do. (Landholder 6)

#### *Production Land Use Values*

For landholders with productivity values, revegetation projects were not always desired due to the risks and lack of productivity incentive. The ecological focus of Barung's projects was too narrowly focused resulting in a **misalignment of values** and often distrust:

Look for me a farmer they're just too green, they just have a urban cowboy orientation... we had a rural subcommittee of Barung and we were doing things, but we got tramped on by the people above who didn't like what we were saying. So that's probably why we haven't participated in it for a long time... It's all about ecology but that's the end of the story. If I...if I conceded to that program then I'd have nothing left to farm on (Landholder 11)

I think it's more a question of capability... being able to put together a meaningful package for me. And as I've mentioned, they're [Barung] not strictly aligned with the way I want to operate. (Landholder 2)

Even if landholders were interested in revegetating for various reasons, these landholders viewed Barung through a lens of scepticism due to **dissimilar values**. They were more likely to emphasise **bad experiences** related to Barung's knowledge of land management and stock (**technical competency**):

When Barung Landcare first started, I asked them to come and look at a steep hill area... we went and talked to them about revegetating that area and their replies were some of the most stupid things I've ever heard in my life. Which would have resulted in, I can be specific if you like? It would have resulted in the loss of the complete hillside area. (Landholder 9)

Barung was not always capable of providing assistance to landholders with on-ground projects when and how they want. This, coupled with their inability to provide assistance or maintenance after the initial planting phase, meant that landholders did not often perceive Barung as having a **capacity to help** (time and resources).

Their [LBCCG] projects, where they involve trees, generally run for three years. So you've got a three year window to get those kind of things established. Whereas if you went to Barung or government organisations, often you have to do that within one year, and that is a very bad predictor of success in a project, because normally anything involving revegetation is minimum three years... They've [Barung] never been able to offer me a project where they've been able to provide a reasonable level of funding, or at a time when I've required it. (Landholder 2)

Sometimes we're very busy and we haven't got time to do it, so you know, if these guys – if they want to do the plantings, as long as they come back and help us maintain it all that's fine. (Landholder 10)

### *Common Drivers*

Overall, it was noted by landholders with either ecological or productivity values that they had not been able to develop **familiar relationships** with particular staff members at Barung because nobody had been employed for a long enough duration to do so. Indeed the constant turnover of staff members often led to distrust in the organisation generally. Project officers spent much of the project period building up a relationship with landholders, but this relationship was lost once the staff member left.

I can't remember I got frustrated... it just sort of wasn't happening, they change team co-ordinators all the time, the Reveg[etation] team, and I just got frustrated.

(Landholder 1)

### **5.3 Lake Baroon Catchment Care Group**

LBCCG delivers on-ground projects with both ecological and productivity incentives; in addition to revegetation, the group offers off-stream watering, cattle crossings, and laneway hardening to landholders. Projects delivered by the LBCCG were able to be delivered over a long period, had an ongoing maintenance component, and the prospect of future projects. Staff members of LBCCG spoke about being responsive to the landholders they were dealing with, so that they could align themselves appropriately with the individual landholder's **values** and offer a project which best suited. This indicated that the LBCCG was aware of the importance of shared values in order to acquire the trust and cooperation of landholders.

I never treat two landholders or two project participants the same. You get to know them, and you need to do that first before you actually start talking about projects. But you get to know them and you find out what makes them tick (Staff 3)

We've sat down with these landholders over a longer period of time to understand what they really want and I guess to pitch the projects in quite a different way around things like laneway hardening and stream crossings and what that means for farm productivity... There's an environmental benefit and that can either be really important to them or not, but we still get to deliver projects because we haven't just focussed on going in and trying to tackle the traditional tree planting type approach. So, yeah, trust is everything. (Staff 4)

#### *Ecological Land Use Values*

For landholders with ecological land use values, revegetation activities were ideal and the perception of having **shared values** was the primary reason for granting trust to the LBCCG. Having a long-term project period (3+ years) and ongoing maintenance ensured that the project didn't fail, preventing **bad experiences**, assisting those incapable of doing their own maintenance, such as the elderly. This, coupled with the groups' capacity to do multiple projects or follow up work, meant that landholders attributed trustworthiness based on LBCCG's **capacity to help** (time and resources) and **familiarity**.

I mean \*\*\*\* comes out here and he checks the progress and offers assistance if I need it to apply for extra funding and he's very supportive I've found. (Landholder 1)

Age is catching up to us, that's the big problem really I suppose.... we've been able to get grants [from LBCCG] to do some follow-up maintenance too, which has been good. (Landholder 6)

### *Production Land Use Values*

For landholders with productivity values, the LBCCG differed from Barung because it offered catchment care activities with a production incentive, "I found that was really good, simply because the incentive was I was going to do it anyway" (Landholder 8). This, coupled with staff members' responsiveness, often lead landholders to believe that the relationship was based on **shared values**, or at the least, having respect for their productivity values.

I think the way it [LBCCG] approaches projects is aligned with my way of thinking in terms of balancing production and sustainability values if you like, including environment values. So I think it's very good at what it does. (Landholder 2)

They seem to be coming to the opinion that to get landholders onside you have to really try and help them...like we can plant slips up but we can't plant them up to the extent where it's done exclusively trees and no stock. (Landholder 11)

Many landholders discussed undertaking catchment care activities with a production incentive as a "win-win" arrangement. Indeed, in some cases landholders valued the projects not simply because of a financial incentive associated with production-based activities, but for the environmental sustainability of their property. This was particularly so for dairy farmers struggling financially since deregulation of the dairy industry, because there are a number of additional risks for the environment and water quality associated with the changes taking place in the industry.

We were doing it [catchment care activities] pre-dairy deregulation, but then when they deregulated there was no spare money to do regularly these things. So that's where we had a bit of a problem. (Landholder 11)

The environment's suffering because we've had to milk now up to 320 cows on the same area, and under the old system we had well fed cows, plenty of rest area, conservation areas. We did tree vegs [revegetation]. We planted out some steeper country to trees.... Now we can hardly make a living by doubling the cow numbers, so what's happening is they're muddying the walkways ... now we've had to gravel it all right through the whole farm. We've had some grant money to do that. We've put some big pipes in through the creeks here through the Catchment Care Group to keep the cows out of the creek and fenced off the creek. We're doing what we can, but if we didn't have Catchment Care money, there wouldn't be a bloody thing done. (Landholder 3)

In addition to being responsive to landholders' values, the LBCCG encouraged landholders to participate and contribute to the project design, incorporating the landholders' needs, and knowledge of the land. This not only mean that landholders felt as though they were getting the best outcome, but it developed a relationship based on **empathy and respect**:

That's something you [we'd] talk about, you work out... because that's really like troughs and putting in you know yourself better, I think the landowner knows better than someone else coming in saying what suits. (Landholder 12)

\*\*\*\* is the coordinator and he's approachable. We haggle about how we're going to do things.... like we'd challenge \*\*\*\* we do. We get good value out of \*\*\*. But he's

unique. You get another bloke come along and he'll just be a dickhead. You won't be able to deal with him. (Landholder 3)

I'll go and talk to them, find out what their issues are and what they see as good for their business as well as potentially water quality, and then we might come up with a bit of a plan or a list of things we can do on their property that the group can fund.

(Staff 3)

While landholders were given greater autonomy over decision-making, they still perceived LBCCG staff as having **technical competency**. This included knowledge of land management, stock and the local area.

I think they [LBCCG] do have a local perspective on the local knowledge, on what the issues are for this area and region. They more often than not know the right people to get in to do a specific job, and are familiar with pitfalls for certain projects, or certain types of projects in this area. (Landholder 2)

A technique used by LBCCG was to build trust with the landholder involved undertaking several smaller low-risk, production-based projects, and then moving onto more ambitious projects, such as revegetation, once trust was established. In this sense, smaller short-term projects such as cattle crossings were used as a stepping stone to build a **familiar relationship** before a larger, riskier project could be taken on.

I wanted to do off-stream watering. They helped me with some costing to water troughs, pumps, stuff like that. So that was the partnership. And we said, righteo, now we've done that let's tree it up. (Landholder 4)

Sometimes I'll do small projects with landholders that we perhaps don't have trust with, with the ultimate aim of actually building a bigger and better project down the track. So to gain their trust you give them a little bit of carrot, something that might not deliver great water quality outcomes but will build that trust. (Staff 3)

Historically it would have all been about tree planting on people's properties, which wasn't a good way necessarily to engage, particularly with some of the big property owners up which who are historically dairy farmers and didn't necessarily see green or environmental projects as a great way to go. So \*\*\*\* will sit down and talk to them about their property and what they want to achieve and then look at some of the things they might do. Some of the things we could enable might actually work for them in a farm productivity sense. Eventually, as part of the overall project plan, we might get to putting in trees, which is a great outcome for the environment but might not necessarily be where the farmer's at. (Staff 4)

LBCCG assisted landholders with additional grant applications, administration, and advice on farming policy and regulations. This kind of further assistance contributed to the groups' overall perceived **capacity to help** and provided opportunities for the development of **familiar relationships**.

I think that's where the Catchment Group does make it easier. It's a pretty good facilitator in putting together the paperwork and all the associated things, and bringing in the right contractors and all that kind of thing. So they make it easy for you in that sense. (Landholder 2)

It's mainly done by our coordinator for the Catchment Care Group. \*\*\*\* will do all the homework for me and say, "Righteo, if you're prepared to do that much fencing and that crossing there and what have you, we will do this for the first three years." And I'll say, "Yeah, okay." So he does - he makes it easy for me. He does the work. (Landholder 4)

I tell him now that I need more water troughs and he's got to write a letter to the minister saying that I've got to have a water license. I can't - the Labor Government put us onto permits so I've got no water security here. So \*\*\*\*'s going to help me write letters and say that I can't participate in more water troughs unless I get security that I can take the water from that water source. So that's where \*\*\*\*'s of value to me. So I use him for things like that. (Landholder 3)

The **reputation** and **past experiences** of the LBCCG were both bad and good. Some landholders spoke about previous experiences from a long time ago that posed a significant barrier to engagement and the development of trust.

There's still plenty out there that wouldn't trust us and that can come from – you know, there's been – there's landholders out there who have had bad experiences with our group in the past, or bad experiences with individuals within the group which then makes them very unlikely to want to work with us. (Staff 3)

While others were promoting the LBCCG to other landholders after having a good experience:

I was president of \*\*\*\* [Farmers Organisation] here for 20 years and probably still am, so I tell all the farmers get into them [LBCCG]... I tell them all the time....

(Landholder 3)

## 5.4 Seqwater

As the bulk water provider for the area, Seqwater has a responsibility to maintain the health of the Baroon Pocket Dam and the associated catchment. However, Seqwater does not offer direct funding for any on-ground projects with landholders in the catchment. In the interviews with its staff members and landholders, it was revealed that Seqwater would have to overcome multiple barriers in order to meet the drivers of trust and mitigate distrust if it wanted to begin engaging with landholders directly. Seqwater recognised that it did not have the trust necessary to carry out on-ground work with private properties owners. Rather, the funding agreement set up between itself and the LBCCG relied on the trust accumulated by the LBCCG to carry out on-ground catchment care activities. Seqwater considered the LBCCG to be a “trust service” and a “trust buffer” (Staff 5).

### *Ecological Land Use Value*

It can only be speculated about how successful Seqwater would be at building trust given the chance to engage directly with landholders. Nevertheless, landholders with ecological values expressed no concerns in the prospect of dealing with Seqwater, other than a lack of **familiarity**. Most were reserved in their judgements due to a lack of interaction. When asked whether they trusted Seqwater, most responses were as follows:

I don't know anything about them. Probably, depends what it is [activity]... We'd certainly consider it. (Landholder 6)

I'm not sure; I haven't had any real dealings with them. (Landholder 1)

### *Productive Land Use Values*

For landholders with primary production values, the interviews revealed an existing bias. The major driver for distrust in Seqwater was the **reputation** associated with bureaucratic organisations. Landholders revealed distrust for government or bureaucratic organisations generally. Some landholders had **bad experiences** with other government organisations and therefore distrusted government organisations in general. For some, Seqwater has a bad reputation for its perceived involvement in the compulsory acquisition of land during the construction of the Baroon Pocket Dam.

Deceitful, dishonest, it's the same routine. Bureaucrats. (Landholder 9)

And in fact, you know, just the common-sense approach says, that whenever you deal with Government they're untrustworthy, it's just par for the course. (Landholder 2)

But the history precedes us and often we're not well liked already by our neighbours.  
(Staff 5)

Landholders perceived Seqwater to have inadequate **technical competency** because their decision-making was often 'textbook' or involved blanket decisions. Staff experience was based on tertiary education and office work, which landholders' believed resulted in little pragmatic knowledge of land management.

It really gets up my goat that does and unfortunately, you get a bunch of bureaucrats, with no disrespect to the university education but because they've got a PhD in something, they think they know what they're talking about. A lot of the time, they've got no idea whatsoever, what they're talking about. (Landholder 9)

Their understanding of what it is to be a primary producer, or a large landowner is somewhat lacking. (Landholder 2)

What I find sometimes difficult with government decisions is – and I know it's how it has to be but sometimes those decisions are blanket decisions that don't necessarily – they don't necessarily come to grips with all the problems. (Landholder 8)

Staff members working for Seqwater were perceived to be **morally incompetent** because landholders felt their motivations were in their own interest and not in the interest of the landholder. Indeed, landholders even questioned the moral competency of the organisation as a whole due to its operations as a bulk water provider who sources water from private land.

They are much more focused on what their outcomes want to be, rather than considering my operations if you like. And that's not to say there aren't people in there that can't do a good job, but they have an officious nature to them. That's just the way that Government organisations are run I guess.... Seqwater and the State Government is deriving substantial revenue from water collection from a property that I own, and other properties in the catchment. And obviously you're always being lectured to by Government, and even society itself, as to how you should be more environmentally friendly, and water quality is so important, and all these things, but the people that really benefit from that is the Water Board. (Landholder 2)

The Water Board [Seqwater] collects so much water off our property, that to reduce the acidity, they're asking us to plant trees. So we're planting the trees, but they get

something like \$500,000 a year for the water that just comes off my land, and yet we get nothing. (Landholder 3)

A few landholders felt that Seqwater did not have **respect or empathy**:

Because they're not the sort of people who would humble themselves to get down and talk to farmers about things. They're educated and aloof. They sit in offices in air-conditioning. (Landholder 3)

While many landholders expressed strong opinions about Seqwater, very few had had direct interactions with staff members. Indeed, the only landholder with production values who had directly interacted with staff members spoke about having **shared production values**. This interaction occurred due to the landholder's proximity to the Baroon Pocket Dam, which is owned by Seqwater. Trust was forged over a shared commitment to reducing landslips into the dam.

I've probably got a land slip problem I wasn't really prepared to...to go too far into it because I'd lose so much production but now I think we're finally coming to a happy medium where they can concede that we still have to make a living and there's a...there's an environmental trade off there.... but they seem to be coming to the opinion that to get landholders onside you have to really try and help them... like we can plant slips up but we can't plant them up to the extent where it's done exclusively trees and no stock... I thought for people right up there they were very diverse and I thought they really had their head screwed on, so I was really heartened and that's a fact. I wouldn't say that if I didn't mean it... I don't want my land to slip, so if we can stop the slipping and keep it on my property and not in their dam it's win/win. (Landholder 11)

It can only be speculated about how Seqwater would be received by other landholders in the catchment, given their bad reputation and past-experiences dealing with other government departments. However, demonstrating their ability to align with production values was a strong enough driver for this particular landholder to trust them, which suggests that they have the potential to engage other productive landholders given the opportunity.

## **5.5 Conclusion**

It has been shown that landholders' evaluations of each institution were primarily influenced by the types of activities offered, and the landholders land use values. Overall, Barung was able to engage ecological landholders, but unable to achieve the trust of landholders with production values, because they did not offer production-based activities, and therefore could not satisfy all the necessary drivers of trust. In contrast, the LBCCG was able meet the requirements of trust for landholders with both ecological and production values. Although landholders were unsure or dismissive of Seqwater, this may have been driven by a lack of direct interaction. Where interaction had taken place Seqwater had achieved a successful outcome and a positive relationship. Successfully engaging with landholders in the future should not be insurmountable if they are able demonstrate shared values.

## **Chapter 6 – Discussion**

### **6.1 Introduction**

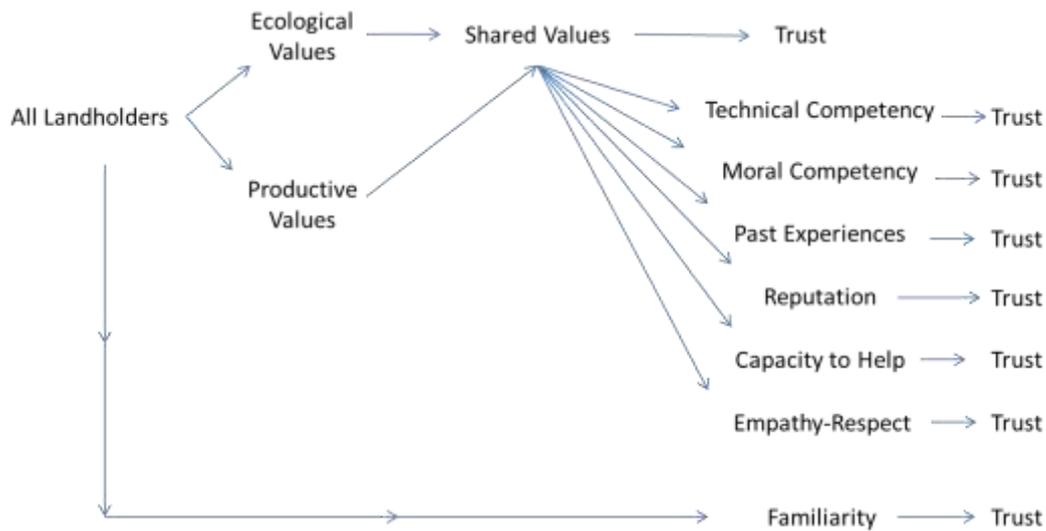
Conducting on-ground catchment care projects requires the trust and consent of private landholders to gain access to their property, and to encourage cooperation. This makes trust a central issue and useful conceptual tool for addressing catchment water quality issues. The aim of this thesis was to examine the role of trust in engaging private landholders to undertake catchment care activities on their properties. This was done by examining landholders' experiences and perceptions of three NRM institutions in the Lake Baroon Catchment: Barung Landcare, LBCCG and Seqwater. It focused on the factors that landholders consider when attributing trust to institutions (Chapter 4) and how trust compared between institutions (Chapter 5). Chapter 4 also outlined the perceived costs, benefits and risks associated with specific catchment care activities; how this impacted on trust was outlined in Chapter 5 during the comparison of institutions.

The first part (section 6.2) of this discussion will explain how the common drivers of trust (and distrust) identified in this study confirm and go beyond the existing literature. It will show how the results of this study broaden our current understanding of these drivers by demonstrating that drivers of trust do not exist in isolation of each other and act in a hierarchal manner. The second part (Section 6.3) will argue that while identifying common drivers of trust can be useful, it is important to consider the broader socio-economic and political situation as this helps to explain the different levels of trust between institutions. Both of these findings are significant because previous studies have tended to focus on only one or two drivers of trust in isolation of the broader situation.

## 6.2 Drivers of Trust

Initially, trust was understood as a three-part relation involving characteristics of a trustor, characteristics of a trustee, and the context over which trust is conferred. This was simplified to read: actor A trusts actor B to do X. Within this process there have been a number of theories proposed about why actor A might choose to trust (or distrust) actor B, with little emphasis on context, or the activity, in question. The results of Chapter 4 sought to do the same, by highlighting the emergence of common ‘drivers’ of trust; these were categorised into: (1) the characteristics of the trustor; (2) the characteristics of the trustee and; (3) the nature of the relationship.

Overall, there were several similarities between the existing literature and the findings of this study; specifically, the importance of evaluations of moral competency, technical competency, shared values, familiarity, past experiences and reputation. There were also several drivers that emerged as part of the current project that are infrequently discussed in NRM trust studies, these were: empathy and respect, and capacity to help. Significantly, when examining the ways in which trust emerged for each of the institutions (Chapter 5), the results were separated according to landholders’ land use values (ecological or productivity) because perceptions of the drivers of trust associated with each institution differed according to the landholders’ land use values. This indicated that drivers of trust do not exist in isolation of each other and can act in a hierarchical manner. In particular, land use values were used as a lens to assess all other drivers of trust (see Figure 5). The only driver of trust that was not assessed through a lens of values was familiarity.



**Figure 5 – Conceptual diagram of drivers affecting landholders’ trust in NRM institutions in the Lake Baroon Catchment, Queensland.**

### *Land Use Values*

Landholders tended to have an orientation towards either ecological or productive land use values, and attributed trustworthiness to institutions who they felt reflected those values. For landholders with ecological values, having shared values was the first and only driver needed to warrant trust. This confirmed existing theories, such as the salient value similarity model, that show a correlation between perceptions of shared values and trust, as well as perceptions of different values and distrust (Earle & Cvetkovich, 1995; Cvetkovich & Winter, 2003; Davenport et al., 2007; Needham and Vaske, 2008; Siegrist et al., 2000). It was further observed that an agency was capable of aligning itself with multiple values. This was demonstrated through the LBCCG’s capability to orientate itself with ecological or productive values as necessary.

Significantly, for those with production values, perceptions of other drivers, including technical competency, moral competency, capacity to help, reputation, empathy and respect, were all influenced by the landholders’ land use values. Since previous literature based on

values, such as the salient value similarity model (Earle and Cvetkovich, 1995), have only examined value orientations as a means to determine if shared values exist, this provides an exciting new insight into the role of value orientations in trust relationships. It also demonstrates that multiple drivers can be relevant within a single relationship, and that they can act in a hierarchal manner. In this case, values served as a filter for other drivers.

Since landholders with productive values tended to take other drivers of trust into account, while those with ecological values were satisfied with simply having shared values, the following sections discussing drivers mostly refer to productive landholders, unless otherwise noted.

### *Technical competency*

Within the literature, technical competency has been discussed as involving competency, technical capability and the expertise to make decisions (Levi, 2000; Bacharach & Gambetta, 2003; Barber, 1983; Leahy et al., 2004). Overall, the results appeared to be consistent with the literature in terms of perceptions of technical competency leading to trust (or distrust); however, it was contextualised in terms of land management and catchment care specifically. Furthermore, there was an emphasis on local knowledge and experience, rather than scientific or ‘textbook’ decision-making. This partly contradicts many NRM portrayals of technical competency (e.g. Smith et al., 2012), which focus on decision making based on scientific and technical knowledge. This may be because most NRM studies of trust focus on policy-making rather than on-ground activities.

Technical competency was assessed through a lens of land use values. Having shared productivity values was a prerequisite for positive evaluations of technical competency.

Landholders with productivity values did not believe that ecologically-focused organisations would have an adequate understanding of farm management, whilst productivity-focused organisations would.

#### *Moral competency*

Within the literature, moral competency has been cited as putting the needs of others first, making ethically-grounded decisions and showing evidence of good intentions, goodwill and promise keeping (Rousseau, et al, 1998; Burke & Stets, 1999; Leach & Sabatier 2005; Smith et al., 2012). Overall, the results were consistent with the literature in terms of perceptions of moral competency leading to trust (or distrust). In particular, landholders perceived Barung and LBCCG as having good intentions, regardless of their land use values. However, when it came to putting the needs of others first, those with productivity values questioned the moral competency of institutions with ecological values; often feeling as though they only wanted to revegetate in order to make themselves feel good, rather than considering landholders' needs to own a productive property.

#### *Past Experiences (first-hand) & Reputation (second-hand)*

Within the literature past experiences and reputation are considered to be similar because they both inform landholders' perceptions about the trust-warranting properties of the trustee. However, past experiences refer to first-hand experiences and reputation refers to second-hand knowledge. Overall, the results were consistent with the literature because landholders' perceptions of trustworthiness and their willingness to engage in trusting behaviour, was often shaped by their past experiences and by the reputation of the institution in question (e.g. Boon & Holtmes, 1991; Stzompka, 1999; Kramer, 1999).

As Stzompka (1999) argues, reputations of trustworthy conduct signify that an individual or an institution can be counted on; while reputations of untrustworthy conduct signify that an individual or institution should not be trusted. The results confirmed this because reputation either served to perpetuate existing distrust of particular institutions or assist in the recruitment of new landholders. Significantly, many landholders formed opinions about the trustworthiness of institutions not only through spoken accounts and testimonies of other landholders, but by observing successful projects on other properties.

The influence of values on reputation can be seen in the way productive landholders talked about Barung and the LBCCG. Barung had developed a reputation in the community as being ecologically-focused or “green”, which deterred productive landholders. Conversely, LBCCG had developed a reputation of being onside with productive landholders, assisting in the recruitment of new landholders.

#### *Capacity to Help (time and resources)*

Capacity to help has not been previously discussed in the NRM literature on trust. It is well established that trust involves assessments of whether the trustor believes that the trustee will meet their expectations before granting them trust. Clearly, in this case study, capacity to help was an expectation; however thus far the literature has tended to focus on elements of moral and technical competency. Indeed, it can be debated whether capacity to help should come under the broader rubric of technical competency; however, unlike technical competency, having a capacity to help was not necessarily linked to a specific skill set, rather it was determined by external factors such as funding and organisational structures (see section 6.3.1). In particular, capacity to assist with ongoing maintenance was commonly cited as an expectation that landholders expected to be upheld.

Having shared productivity values was a prerequisite to being perceived as having a capacity to help. Landholders with productive values did not perceive ecologically-focused organisations, such as Barung, as having a capacity to help because they did not offer activities with a production incentive, whereas the LBCCG did.

### *Empathy-Respect*

Having a relationship based on empathy and respect was another driver of trust that emerged from the data, and operated as an expectation. While there is documentation of empathy and respect being drivers of trust in other disciplines, such as medicine (e.g. Silvester, 2007), this driver has not previously been discussed in the NRM literature on trust. Within the results, being empathetic primarily involved not telling a landholder what to do with their property, because this was considered an insult and led to distrust. Empathy and respect was assessed through the lens of values because this driver was only relevant to landholders with production values. Productive landholders did not believe that ecologically-focused organisations respected their operations as a productive property.

### *Familiarity*

Regardless of land use values, landholders noted that it made them more comfortable and willing to trust an individual who they had gotten to know and were familiar with. This confirms the observations of both Luhmann (1979) and Hardin (1993) that emphasise the importance of close "thick relationships" in facilitating trust. For this reason, an institution's ability to attract and retain a particular project officer was a key determinant in its ability to accumulate trusting relationships within the community. Levi (2000) argues that trust is history-based, where trust thickens or thins over the history of the interaction informs the trustor about the trustee's trust-warranting properties. This was particularly obvious when the

LBCCG engaged landholders with productivity values to do revegetation; they used smaller less risky projects as a stepping stone to build familiarity and trust so that a larger more risky project could be undertaken. Another significant element that emerged from the interviews was the importance of not only having frequent interactions, but also the prospect of a long-term relationship.

With respect to familiarity, Lubell (2007) argued that the development of familiar relationships is restricted by institutional structures. It was therefore anticipated that landholders would be less willing to trust institutionally ‘distant’ agencies. While this was true for Seqwater, which suffered from a lack of familiarity, the LBCCG and Barung operate on the same institutional locality, but had very different capacities to develop familiar relationships due to their funding arrangement (see section 6.3.1). This suggests that studies that focus on a single determinant of trust, such as institutional distance, can fail to account for other contextual matters that may influence the establishment of trusting relationships.

### **6.3 The Importance of Context**

Previously, there has been an assumption that people apply broad attitudes about the trustworthiness of others to every trust-based relationship. However, recently there has been a departure from a generalised trust view, and an increasing focus on contexts in which trust occurs. At the outset of this project, trust was understood as a three-part relation involving properties of a trustor, characteristics of a trustee, and the context over which trust is conferred. However, this understanding of trust implies that the “the context over which trust is conferred” is both a situation, and a specific activity. This part of this discussion separates these two concepts, creating a new conceptualisation of trust. This is: actor A trusts actor B to do X in situation S.

Previous studies of trust have tended to focus on identifying common factors that may drive trust or distrust between actor A and actor B. However, little research has been conducted to explain the context-dependence of these relationships. Indeed, the broader socio-economic and policy circumstances of a particular situation may influence both the trustor's willingness to take a risk or accept vulnerability, and the trustee's ability to meet the necessary drivers of trust. This will be demonstrated below by outlining how Barung's and LBCCG's ability to deliver drivers of trust was influenced by the broader institutional setting and funding models that they operated within. It will also demonstrate how dairy farmers' willingness to accept vulnerability and risk was influenced by the deregulation of the dairy industry in Australia.

### **6.3.1 Institutional Context**

Over the past decade, in an effort to achieve sustainable NRM, Commonwealth and State governments have moved to a regional focus for their major funding programs (Payton, Curtis, McDonald & Woods, 2004). This process has been termed the 'regionalisation' or 'devolution' of NRM. Primarily, this approach arose because national priorities were not being effectively implemented on-ground. The result has been increased funding and responsibility of regional NRM organisations. The impetus for this shift, among other things, is that regional groups would provide the much needed link between private landholders and government priorities for strategic planning (Jennings & Moore, 2000). Prior to devolution, most of the investment in on-ground improvements occurred through grants from governments to groups or individuals for specific projects on private properties. The regional model gives much of the responsibility for decisions about priority setting, project selection and accountability for outcomes to regional groups (Payton et al., 2004).

The Lake Baroon Catchment is an ideal place to examine how the broader context around institutional structures and funding models may influence establishment of trust required to build sustainable relationships with private landholders. Within the catchment, Barung and the LBCCG are community-based NRM organisations that operate on an identical locality, but represent two different funding models. Barung operates on a project-specific funding model, which is likened to pre-devolution, while the LBCCG operates on a 10 year program provided by Seqwater, which allows autonomy over decision-making. Several studies have demonstrated why project-specific funding hinders landholders' adoption of conservation practices in the past (e.g. Gibson, O'Donnell & Rideout, 2007; Mendham et al., 2007; Januchowski-Hartley et al., 2012). The results of this study contribute to these findings by highlighting how project-specific funding impacts on an institutions' ability to create the conditions of trust.

For the LBCCG, the 10-year funding program provided by Seqwater covers basic administrative and organisational costs, and had a long term guarantee. In contrast, as Payton et al. (2004) describes, government financial commitment to project-specific funding programs (received by Barung) so far has been contentious and erratic, and there is little confidence that governments will commit to longer-term funding. The major difference between these two funding programs is that organisations that operate on long-term and secure funding can attract and retain staff over a long period, while organisations that receive erratic and project specific funding typically hire staff on short-term contracts (Gibson et al., 2007). Mendham et al. (2007) has argued that agencies must endeavour to create employment conditions that encourage well-trained and enthusiastic staff to remain in communities for longer periods of time to build rapport and encourage the adoption of conservation practices. Indeed, the results of this study have shown that attracting and retaining skilled staff

members is crucial for developing long-term **familiar relationships** and perceptions of **technical competency**. The longer a staff member remains employed, the more valuable they become in terms of the trust relationships they developed during that time. It was noted that the constant turnover of staff members in Barung was a cause for distrust, while the LBCCG was able to retain a single project officer who developed close trusting relationships with landholders over the long-term.

Gibson et al. (2007) describes how project-specific funding forces organisations such as Barung to deliver pre-defined projects within an allotted timeframe, and with measurable outcomes. In contrast, the LBCCG was responsible for decisions about priority setting, project selection and accountability for outcomes. Januchowski-Hartley et al. (2012) found that landholders are more willing to undertake activities that focus on meeting the needs of a particular property, rather than predetermined outcomes. Mendham et al. (2007) argues that there needs to be less emphasis on achieving targets and more flexibility in program delivery. Furthermore, studies such as Vanclay and Lawrence (1995), Cramb (2000) and Morris (2006) all demonstrate that landholders are more likely to participate in conservation practices that match their values and goals. Indeed, the results have shown that having the capacity to be responsive to landholders, and offer activities that support both ecological and productive land use values was crucial to developing a relationship based on **shared values**. Since the projects that Barung offered were mostly dictated by the types of funding available, it was often not able to offer projects that aligned with productive landholders land use values. In contrast, for the LBCCG, funding did not rest on meeting strict criteria and therefore projects were designed based on what a particular property needed, rather than having a predesigned project. This allowed LBCCG to develop landholder relationships based on shared values and **empathy and respect** by not dictating what the landholder must do.

Forcing organisations to deliver measured outcomes within an allotted time-frame provides no opportunity for the costs of ongoing site management (Mendham et al., 2007) and NRM agencies become more concerned with meeting outcomes than assisting landholders (Gibson et al., 2007). This was reflected within the results through the effects of **capacity to help (time and resources)** on trust. The uncertainty and fluctuations in funding meant that Barung could only offer short-term projects when funding was available and little to no ongoing maintenance; making it difficult to be perceived as having a capacity to help. In contrast, long-term autonomous funding programs gave the LBCCG greater capacity to help landholders when it was needed most, rather than when funding was available, with flow on effects on trust.

Overall, Jennings and Moore (2000) have argued that strategic planning, especially when linked to on-ground implementation, is a long-term venture. Robust institutions maintaining a presence and functions over time are essential for such activities to take place. Short-term funding and on-going reliance on externally-provided, uncertain resources are not conducive to longer-term approaches. Whatever the institutional structure, stability over the longer term is essential for achieving sustainable on-ground outcomes. The results of this study have further demonstrated this point by outlining how long-term and reliable funding programs, which allow for autonomy in decision-making, enable NRM organisations to meet the drivers of trust required to successfully implement on-ground catchment care activities.

This section has demonstrated the importance of observing contextual matters that may influence outcomes, as opposed to simply focusing on the drivers of trust, because these do

not exist in isolation of broader contextual matters. The drivers of trust used in this example were influenced by the context around institutional structures and funding of NRM.

### **6.3.2 Landholder Context**

In 2000 the Australian dairy industry underwent market deregulation, creating a highly competitive pricing environment and ultimately lowering farm gate prices for milk (Bethune & Armstrong, 2004). As a result, dairy farmers have been forced to either reduce costs or increase productivity to be financially viable, often resulting in the increase of herd numbers and decreasing expenditure on conservation practices (Bethune & Armstrong, 2004). This trend was commented on by dairy farmers participating in this study, who noted that environmental degradation was occurring at a greater pace due to increased herd numbers, but farm income was too low to be spent on ecological activities, such as revegetation.

As Millar (2001) argues, in working with rural landholders it is important to recognise their social, historical and financial contexts, and factors influencing their willingness and capacity to embrace conservation. Within this study it was noted that the broader context of deregulation of the dairy industry impacted on landholders' willingness to engage in on-ground projects with NRM organisations. For dairying landholders, who were already in a difficult financial position due to the changes taking place in their industry, the risk of conducting catchment care activities with an NRM institution was especially high. Studies such as Pannell et al. (2006) and Kabii and Horwitz (2006) have noted that if participation in conservation activities could come with a high personal cost, then participation is unlikely as landholders often have limited time and money to invest in conservation actions. Indeed, in many NRM studies, two major barriers to adoption of conservation practices in farming communities are a lack of financial resources (e.g. Mendham et al., 2007) and a limited

capacity to implement the practice ( e.g. Vanclay and Lawrence, 1995; Cramb, 2000; Morris, 2006).

These factors were found to be relevant in the formation of trust with NRM agencies because they directly influenced landholders' risk-taking behaviour. To reiterate, a core aspect of all trust relationships is a willingness to take a risk; to appropriately study trust there must be some meaningful incentives at stake and the trustor must be aware of the risk involved (Gambetta, 1988; Mayer, Davis & Schoorman, 1995). It is clear that trust matters the most when either the uncertainty of unmet expectations is high or when the stakes (e.g. financial loss) of unmet expectations are high (Li, 2012). Indeed, risk-taking behaviour presents a clear argument for the importance of context because this determines the stakes involved, the perception of the level of risk, and the alternatives available to the trustor. The particular socio-economic and political context for dairy farmers interviewed was driven by the deregulation of milk prices in Australia, resulting in a situation where vulnerability and risk was high.

The high risk and vulnerability of dairy farmers was observed in the results in two ways. Firstly, it meant that they were less willing to take a risk, and were therefore only willing to participate in low-risk conservation activities with a production incentive such as hardening laneways and off-stream watering. It also meant that trust mattered more, and so evaluations of trustworthiness were more rigorous to ensure that expectations were met. For trust to be granted, dairy farmers needed to have positive evaluations of all eight drivers of trust. Indeed, the LBCCG was the only institution who had managed to engage dairy farmers in catchment care, because it was that only organisation that offered low-risk activities with a productive incentive and was perceived to have shared values. Only once trust was established, the

LBCCG could begin to engage these landholders in higher risk activities such as revegetation.

This demonstrates that the development of trust needs to be situated within the broader socio-economic and political context of the trustor in question, as this may determine the stakes involved, the perception of the level of risk, and the alternatives available to the trustor; therefore affecting willingness to take a risk or accept vulnerability. While many studies have highlighted the role of risk and vulnerability in regards to trust, very few have highlighted the contextual factors which have impacted on these factors. Furthermore, it clearly demonstrated that a situation and an activity are separate concepts, exemplifying the need to conceptualise trust as a four-part relation.

## **6.4 Conclusion**

This first part of this chapter (section 6.2) situated the common drivers of trust within the existing literature, and went on to demonstrate that drivers of trust do not exist in isolation of each other and act in a hierarchal manner; values served as a lens through which other drivers of trust were assessed. Section 6.3.1 outlined how institutional structures and funding models impacted on an institution's ability to develop relations of trust with landholders. Section 6.3.2 used an example of dairy farmers' experience of deregulation of the dairy industry to demonstrate how vulnerability and willingness to accept risk can be influenced by landholders' socio-economic and political circumstances. Overall, sections 6.3.1 & 6.3.2 clearly exemplified the context-dependence of trust relationships; they provided clear examples where a situation and an activity are distinct but related concepts, thereby supporting the argument made in this thesis that it is useful to conceptualise trust as a four-part relation of: actor A trust actor B to do X in situation S.

## Chapter 7 – Conclusions

The primary aim of this study was to examine the role of trust in determining whether landholders conduct catchment care activities on their properties. It specifically sought to understand how characteristics of the trustor, trustee and context determine whether landholders trust NRM institutions, and how trust relationships vary between institutions. This study has shown that trust plays a key role in determining the types of landholders who can be recruited to participate in catchment care programs, the types of activities that can be conducted with landholders, and overall, the long-term sustainability of catchment care programs.

It was found that there were eight drivers of trust (or distrust) that existed between landholders and NRM institutions. Drivers of trust that were characteristics of the trustee were: technical competency, moral competency and capacity to help (time and resources). Drivers of trust that were characterised by the nature of the relationship were: shared values, empathy-respect, familiarity, past experiences and reputation. These were assessed through characteristics of the trustor, such as land use values.

The most important driver of trust was having a relationship based on shared values, as this served as a lens through which other drivers of trust were assessed. To have a relationship based on shared values an institution needed to offer catchment care projects that aligned with the landholders land use values and goals. In particular, landholders with productive values were the most difficult to recruit, a major reason for variances between the NRM institutions was whether they offered activities a production incentive or not. It was shown that landholders with productive values would only be willing to conduct ecological activities, such as revegetation, after trust had already been established by conducting

production-based activities first. For this reason, LBCCG was the only institution who had managed to conduct revegetation with productive landholders.

Context also played a large role in the formation of trusting relationships. It was shown that context impacted on an institution's ability to create the conditions of trust, and landholders' willingness to accept risk and vulnerability. Therefore, another major difference between institutions was the institutional structure and funding models that they operated within. In particular, Barung was constrained by the short-term, project-specific, uncertain and erratic funding it received and was making it very difficult to develop trust with productive landholders. In contrast, the LBCCG operated on a 10-year funding program that provided certainty and autonomy over decisions about priority setting and project selection, which allowed it to meet the necessary drivers of trust with productive landholders.

## **7.1 Limitations**

Two limitations that related to the content of this thesis were noted:

- 1) Within the scope of an honours thesis, it was only possible to examine landholders' trust in NRM institutions and their staff. During staff interviews, it was revealed that institutions' trust in landholders was also important for undertaking catchment care activities. This suggests that mutual trust, where each partner is simultaneously a trustor and a trustee, is likely to be important, but is under-represented in this thesis.
- 2) Given the time constraints of an honours thesis, the size of this study was limited to 18 participants within a single catchment. While this enabled valid conclusions to be made, future research is required to test the conclusions drawn from the results of this study (See 7.2 on future research recommendations for suggestions).

## **7.2 Potential for Future Research**

This thesis has been critical of the current status of trust research. Based on the theoretical contributions of this study, it highlights three avenues for future research.

- 1) Since this study demonstrated that drivers of trust do not exist in isolation, and act in a hierarchical manner, it is suggested that research is conducted to examine the ways that drivers of trust interact.
- 2) Since it was shown that previous conceptualisation of trust have failed to separate specific activities from the situation, future research should seek to determine the usefulness of a four-part conceptualisation of trust (A trust B to do X in situation S) in other settings.
- 3) Throughout this study it was noted that landholders' interpersonal trust of staff members differed from institutional trust of the organisation as a whole. Furthermore, landholders' interpersonal trust (or distrust) of staff members impacted on institutional trust of the organisation as a whole, and vice versa. It is suggested that future studies be conducted to examine the difference and relationship between interpersonal and institutional trust of NRM agencies and their staff.

## **7.3 Policy Recommendations**

Based on the results of this study, three recommendations for policy have been proposed:

- 1) It is recommended that NRM institutions wishing to undertake catchment care activities on private land start by establishing the values of the landholders they seek to work with, and attempt to accommodate these values in project planning.
- 2) It is recommended that NRM institutions consider the socio-economic and political status of landholders they seek to work with in order to determine their relative levels of risk and vulnerability. The best way to engage vulnerable landholders with high levels of risk may be

to conduct low-risk activities with a production incentive, before moving on to higher risk activities.

3) It is recommended that short term funding and on-going reliance on externally-provided, uncertain resources is avoided. In order to achieve sustainable on-ground outcomes, funding of NRM institutions should aim to provide stability over the long term and autonomy for decisions about priority setting and project selection as this enhances an institutions ability to develop trust relationships with landholders.

#### **7.4 Final Conclusions**

This study made three key contributions to theory on trust. Firstly, previous studies have only focused on one, two or three drivers of trust, with little consideration of how they may interact. This study demonstrated that some drivers of trust serve as a lens thorough which other drivers of trust are assessed. Therefore, **drivers of trust do not exist in isolation and can act in a hierarchal manner**. Secondly, previous studies have focused on the relationship between actor A and actor B. Little research has been conducted to explain the context-dependence of these relationships. While some studies have been conducted within a specific context, they have failed to highlight the particular variables that make studying trust in that context unique. This study demonstrated that context affected both the trustor's willingness to take a risk and accept vulnerability, and the trustee's ability to create the conditions of trust. Therefore, **drivers of trust do not exist in isolation of the broader context**. Furthermore, trust has previously been understood as a three-part relation involving properties of a trustor, characteristics of a trustee, and the context over which trust is conferred. However, this understanding of trust implies that "the context over which trust is conferred" is both a situation, and a specific activity in question. This thesis has argued that **conceptualisations**

**of trust could be usefully expanded to actor A trusts actor B to do X in situation S** in order to separate these two distinct components of trust.

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# Appendices

## Appendix A – Landholder Interview Questions

- 1) Approximately how long have you been living on this property?
  - a. Are you a first/second/third generation living on this property?
  - b. OR, what made you choose to move to this area?
- 2) What is the primary function of your property? (E.g. Beef, Dairy, Hobby)
- 3) What is the best part about being a... dairy farmer/beef farmer/hobby farmer etc.

### Pragmatic Questions

1) Have you conducted any of the following activities on your property? (If so, please provide details).

- Revegetating river banks
- Fencing off waterways from livestock
- Stock waterway crossing
- Off-stream watering
- Hardened laneways

2) [For each identified] What were your reasons for doing this activities?

- a. Did you work in conjunction with, or receive any funding from any environmental/government organisations? If so, which ones.

3) [If none identified] What were your reasons for not conducting any of these activities?

- a. Have you ever been approached by an environmental/government organisation to conduct such activities on your property?

### Barung

1) Are you aware of Barung Landcare/Have you done any projects with them?

*NOTE: If not, move on to next group*

2) What is your opinion of Barung Landcare?

[NO WORK DONE] If they approached you, would you agree to participate in any of the previously mentioned activities on your property? Please explain why/why not.

- a. All, or just some in particular? Please explain why/why not?

[If WORK DONE] Please tell me a bit about the work you did on your property with the Barung.

- a. are there any activities in the list I mentioned earlier that you would not allow Barung to conduct on your property?
- b. Can you please tell me a bit about the relationship which you have developed with Barung?

### LBCCG

1) Are you aware of the Lake Baroon Catchment Care Group (LBCCG)?

*NOTE: If not, move on to next group*

1) What is your opinion of the Lake Baroon Catchment Care Group?

[NO WORK DONE] If they approached you, would you agree to participate in any of the previously mentioned activities on your property? Please explain why/why not.

a. All, or just some in particular? Please explain why/why not?

[If WORK DONE] Please tell me a bit about the work you did on your property with the LBCCG.

a. are there any activities in the list I mentioned earlier that you would not allow LBCCG to conduct on your property?

b. Can you please tell me a bit about the relationship which you have developed with LBCCG?

### Seqwater

1) Are you aware of Seqwater

*NOTE: If not, move on to next group*

1) What is your opinion of Seqwater?

[NO WORK DONE] If they approached you, would you agree to participate in any of the previously mentioned activities on your property? Please explain why/why not.

a. All, or just some in particular? Please explain why/why not?

[If WORK DONE] Please tell me a bit about the work you did on your property with the Seqwater.

a. are there any activities in the list I mentioned earlier that you would not allow Seqwater to conduct on your property?

b. Can you please tell me a bit about the relationship which you have developed with Seqwater?

### General & Comparative

In general, to what extent would you say you trust:

- LBCCG
- Barung
- Seqwater

2) Are there particular people within each of these organisations that you trust? (Follow up for each organisation)

2) Are there certain activities which you would be more likely to trust an organisation to conduct on your property in comparison to others?

- Revegetating river banks
- Fencing off waterways from livestock
- Stock waterway crossing
- Off-stream watering
- Hardened laneways

3) Are there any other catchment management activities which are not on this list which you would be willing to do?

4) What are the major barriers for you personally to conducting on-ground projects with water management organisations?

5) What are the major incentives for conducting on-ground projects?

### General/Demographic Questions

1) Does this property provide your primary source of income?

4) How old are you? (18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+)

5) Do you have children?

6) If yes, are your children likely to continue farming your land once you retire?

7) How long has the farm been in your family?

8) What area of land does your farm cover?

9) Are there any other comments you would like to make?

Thank you for your time.

## **Appendix B – LBCCG Interview Questions**

1) Can you provide me with a general description of what your organisation does?

- a. Who is the organisation made up of?
- b. What is your role within the organisation?

2) Could you please tell me about the 10 year funding agreement with Seqwater.

- a. How this came about?

3) Could you tell me about the on-ground work that LBCCG does with landholders.

- a. What management activities do you do?
- b. How do you decide which properties to conduct projects on?
- c. How do you decide what kind of management activity you will do (e.g. revegetation, off-stream watering, fencing etc.)

4) Does trust plays a role in the LBCCG's engagement with landholders? If so, how? If not, why not?

5) Have there been any instances where you have not trusted a landholder enough to conduct on-ground projects on their property?

- a. Is this particularly true for certain types of projects?

6) Are there any other comments you would like to make?

Thank you for your time.

### **Appendix C – Barung Landcare Interview Questions**

- 1) Can you provide me with a general description of what your organisation does?
  - a. Who is the organisation made up of?
  - b. What is your role within the organisation?
- 2) What are the primary sources of income for Barung?
  - a. Have you received many government grants? How long did these last for?
  - b. Do you feel as though the organisation is limited by the amount of funding it receives?
- 3) Could you tell me about the on-ground work that Barung does with landholders.
  - a. What management activities do you do?
  - b. How do you decide which properties to conduct projects on?
  - c. How do you decide what kind of management activity you will do (e.g. revegetation, off-stream watering, fencing etc.)
- 4) Does trust plays a role in the Barung's engagement with landholders? If so, how? If not, why not?
- 5) Have there been any instances where you have not trusted a landholder enough to conduct on-ground projects on their property?
  - a. Is this particularly true for certain types of projects?
- 6) Are there any other comments you would like to make?

Thank you for your time.

### **Appendix D – Seqwater Interview Questions**

- 1) Can you give me a general description about what you do as an organisation?
  - a. What is your role within the organisation?
- 2) What is Seqwater's interest in the Lake Baroon Catchment?
- 3) What activities does Seqwater do to maintain the health and reduce sedimentation in the Baroon Pocket Dam?
- 4) Does Seqwater consider nonpoint source pollution to be an issue in the Lake Baroon Catchment?
  - a. are there any other environmental management issues in the catchment?
- 5) Could you please tell me a little bit about the funding agreement Seqwater has with the Lake Baroon Catchment Care Group?

a. Does Seqwater consider this funding agreement to be beneficial? If so, why? If not, why not?

6) Has Seqwater attempted to conduct any on-ground catchment management activities on private properties in the Lake Baroon Catchment?

a. If so, was this successful? Explain why/ why not.

b. Was Seqwater well received by landholders?

7) How does Seqwater determine what kind of on-ground work needs to be conducted in the catchment?

*The following questions may depend on whether Seqwater has attempted to conduct any on-ground activities with landholders:*

8) Do you believe that trust plays a big part in successful engagement with landholders? If so, how? If not, why not?

9) Have there been any instances where you have not trusted a landholder enough to conduct on-ground projects on their property?

a. Is this particularly true for certain types of projects?

6) Are there any other comments you would like to make?

Thank you for your time.

## Appendix E – Plain Language Statement

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### Plain Language Statement

You are invited to participate in a project titled "Catchment management in The Lake Baroon Catchment: The role of good working relationships and trust" being conducted by the Melbourne School of Land and Environment at The University of Melbourne. The project will form part of Lillian Stevens' Honours thesis, and has been approved by the Human Research Ethics Committee. The study aims to understand how relationships between landholders and water management organisations affect catchment management in QLD.

Should you agree to participate, you will be asked to participate in an interview about catchment management activities you undertake on your property and your relationship with various water management institutions in the Lake Baroon Catchment. With your permission, the interview will be audio-recorded so that we can ensure that we make an accurate record of what you say. We estimate that the time commitment required of you will not exceed one hour.

We intend to protect your anonymity and the confidentiality of your responses to the fullest possible extent, within the limits of the law. Your name and contact details will be kept in a separate, password-protected computer file from any data that you supply. This will only be able to be linked to your responses by the researchers. In the thesis, you will be referred to by a pseudonym. We will remove any references to personal information that might allow someone to guess your identity; however, you should note that as the number of people we seek to interview is small, it is possible that someone may still be able to identify you.

Once the thesis arising from this research has been completed, a brief summary of the findings will be made available by researchers upon application. It is also possible that the results will be presented at academic conferences. The data will be kept securely in the Melbourne School of Land and Environment for five years from the date of publication, before being destroyed.

Your participation in this study is completely voluntary. Should you wish to withdraw at any stage you are free to do so without prejudice. The researchers are not involved in the ethics application process. Your decision to participate or not, or to withdraw, will be completely independent of your dealings with the ethics committee, and we would like to assure you that it will have no effect on any applications for approval that you may submit.

If you would like to participate, please indicate that you have read and understood this information by signing the accompanying consent form.

Should you require any further information, or have any concerns, please do not hesitate to contact either of the researchers by email or phone. Should you have any concerns about the conduct of the project, you are welcome to contact the Executive Officer, Human Research Ethics, The University of Melbourne, on ph: 8344 2073, or fax: 9347 6739.

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HREC: 1442260.1; Date: 6/06/14; Version: 1.1