

CHAPTER 1: INTRODUCTION

1.1. Overview

Despite large financial investments by governments and farmers, as well as significant inputs of time, effort and goodwill, the ecological, social and productive capacity of the Australian rural environment is under threat. According to the last *State of the Environment Report*:

Pressures of past human activities and recent droughts are affecting our inland water systems ... Australia's land environment are threatened by widespread pressures. Threats to our soil, including acidification, erosion and the loss of soil carbon, will increasingly affect Australia's agriculture unless carefully managed ... Our unique biodiversity is in decline, and new approaches will be needed to prevent accelerating decline in many species.²

This state of affairs is not a just a matter of *farm management*; that is, the combination of techniques, behaviours, actions and omissions of land manager that affect the condition of natural resources and the environment on- and off-farm. It is a question for *governance*: how we steer, persuade, cajole, compel, and incentivise land managers to undertake the behaviours that conserve natural resources and maintain ecological functions.

The tasks of managing environmental problems and of steering behaviours towards those that remediate those problems are entwined. That which makes management difficult makes governance difficult. When management is easy and where incentives naturally align to foster environmentally attuned behaviours, governance is easy. Section 1.2 of this chapter explores some of the contexts in rural Australia that make management and governance singularly difficult, including the scale, complexity and dynamism of environmental problems, rural demography, the uneven distribution of national wealth, and the extent to which governments are willing or able to involve themselves in remediation.

² State of the Environment 2011 Committee, *Australia State of the Environment 2011 - In Brief* (DSEWPaC, 2011) 9.

The 2011 *State of Environment Report* shows that management and governance to date have not coped with this convergence of difficult circumstances, and the report's call for 'new approaches' echoes the search for alternative governance measures. One such approach – 'collaborative governance' – is explored in depth in section 1.3 of this chapter, but for now it is enough to say that collaborative governance involves a shift away from governing in the traditional 'command-and-control' mode where the dominant actor is government and the dominant instruments are laws and regulations. In collaborative modes of governance, non-government actors are involved in the implementation of public interest goals. As such, collaborative governance constitutes a disruption to the old notion of governance partitioned into public and private spheres.

Applied to natural resource management and farmers, collaborative governance aims to co-opt non-government players – including farmers themselves, farmers' associations, civil society groups, such as environmental groups, and supply-chain actors in markets – in systems to regulate farm practice. Collaborative environmental governance is being practiced in rural Australia, most notably in regional natural resource management. There are many ways non-government actors and instruments can be brought into collaborative governance arrangements and one of them is to incorporate voluntary, non-government environmental programs – in this study called 'voluntary stewardship programs' (VSPs) – into co-regulatory regimes. Such arrangements are being trialled in environmental governance in rural Australia, and are explored in section 1.4 of this chapter.

When implemented in isolation as stand-alone measures of governance, both traditional command-and-control and purely voluntary, self-regulatory measures such as VSPs have been criticized for failing to satisfactorily address environmental problems. Part of the rationale of collaborative governance is that it will reduce the inherent shortcomings of both through a strategic combination of the two. This is a bold claim that, if realized, would make a significant contribution to environmental conditions in rural Australia. But there is a dearth of empirical evidence to support the claim.

Several arguments for the need for greater empirical evaluation of collaborative environmental governance in rural Australia are advanced in section 1.5 of this chapter. Collaborative governance is being trialled in rural Australia on ambitious

scales at considerable public and private expense, but these trials may be progressing ahead of our understanding of the implications of collaborative modes. While collaborative governance shows promise in dealing with the inadequacies of traditional regulation and voluntarism, much of this promise has not been empirically validated in rural Australia. Many of the prerequisites and conditions identified in the literature for favouring collaborative governance are absent in rural Australia. And much of the literature on the pros and cons of collaborative and voluntary governance, both theoretical and empirical, is directed to sectors and corporate structures that are not entirely relevant in rural Australia.

Having made an argument for empirical evaluation in Chapter 1, the remainder of the thesis outlines an attempt to empirically evaluate the potential contribution of VSPs in co-regulatory arrangements. This study was conducted between 2012 and 2016 as a part of a research initiative of the Australian Centre for Agriculture and Law (School of Law, University of New England) called *The Next Generation Rural Landscape Governance: the Australian Dimension*, which was substantially funded by the Australian Research Council (ARC),³ with the generous support and material assistance of the other organizations listed in the Acknowledgments of this thesis. The structure of the thesis is shown in Figure 1.1.

Chapter 2 describes a conceptual framework for the study, which focuses on how VSPs ‘fit’ in collaborative governance arrangements by allowing a mutual exchange of benefits between farmers, and non-farmers who have an interest in natural resource management on farms (in this study, called ‘external stakeholders’).

Chapter 3 describes the conversion of the conceptual framework into an evaluation methodology. It uses a case study approach by investigating three working examples of VSPs: Certified Land Management (CLM), and two organic schemes, Australian Certified Organic (ACO) and the Floodplain Organic Grains Group (FOGG). Each VSP was interrogated against criteria arising out of the conceptual framework, using desktop review of key documents, and interviews and surveys with participant farmers. In the CLM case study, the investigation was augmented with interviews of non-participant farmers and a CLM trainer.

³ A major source of Australian government funding for university research.

To help evaluate whether VSPs assist farmers come to grips with the expectations of non-farmers, the methodology included interviews with several external stakeholders. Chapter 4 outlines the results of these interviews and proposes a set of features stakeholders would wish to see in VSPs forming collaborative governance arrangements. These were used as part of the evaluation criteria for reviewing the three selected VSPs.

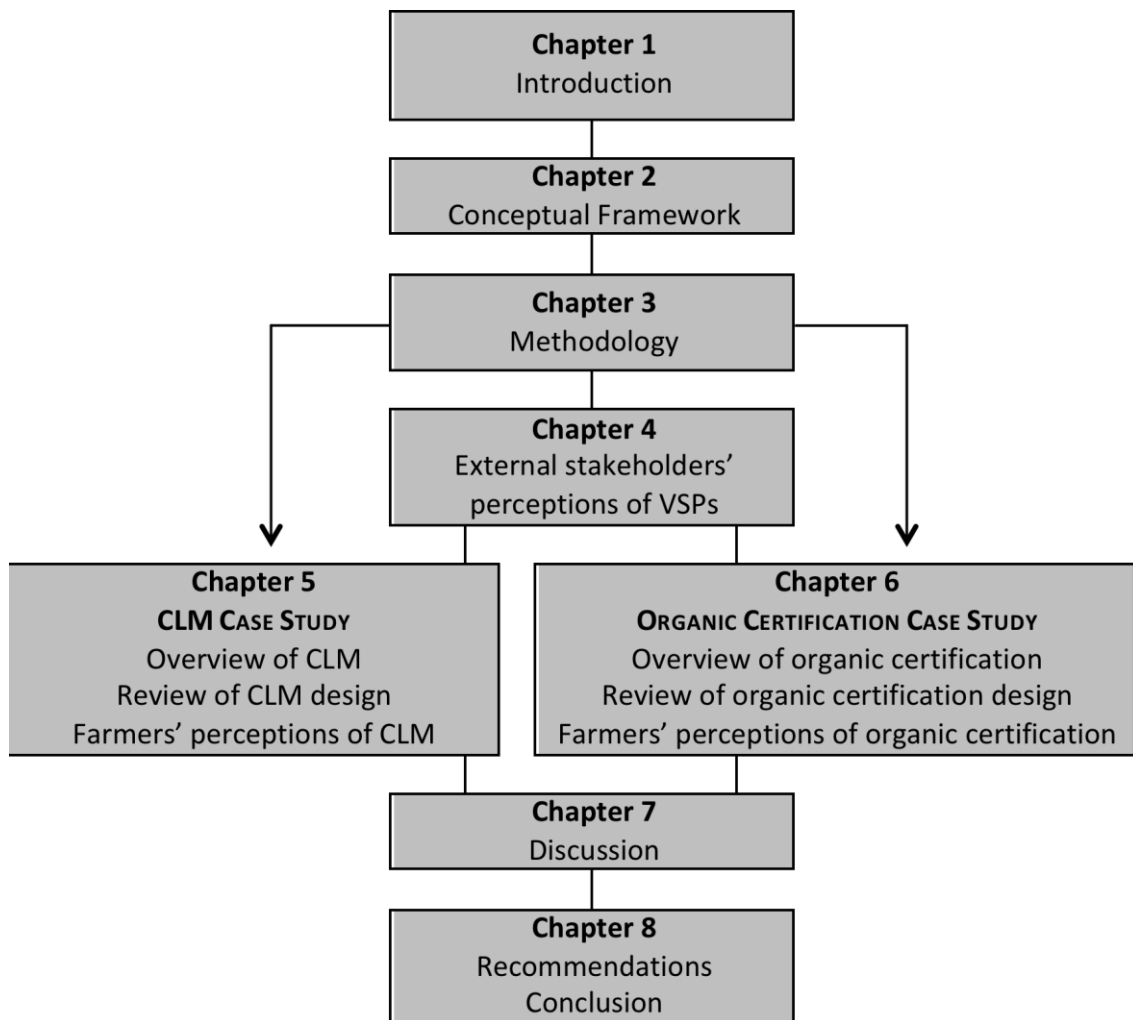


Figure 1.1: Structure of thesis

Chapters 5 and 6 describe, respectively, the results of the CLM case study, and a case study combining the two organic certification schemes. The results show the three selected VSPs perform well on many of the criteria in the evaluation framework.

Chapter 7 discusses the implications of the results, which suggests that the selected VSPs do make important contributions to rural natural resource management and that they – and their farmer participants – would likely be useful partners in a co-regulatory or other collaborative governance arrangements.

Chapter 8 makes recommendations for policy and future research in order to capitalize on the public interest value of farmers' participation in VSPs.

1.2. Natural Resource Context

The *governance* of farmers' impacts on natural resources is so intrinsically connected with the *management* of those resources that whatever makes management difficult also makes governance difficult. A number of complex social and biophysical circumstances converge to make rural natural resource problems especially challenging.

1.2.1. Wicked Environmental Problems

Dealing with the chronic and self-perpetuating character of environmental problems in rural areas, such as the infiltration of invasive species and decline of soil health, requires a sustained supply of resources and effort over a long period. Problems such as biodiversity loss are 'wicked'⁴ because they result from systemic interactions amongst biophysical, social and other factors. Dealing with this type of problem requires a focus on managing systems, and collective action. Then there are 'super-wicked' problems,⁵ where cause and effect transcend institutional structures, as in the case of trans-boundary groundwater management. Dealing with this type of problem requires co-ordinating collective action across a complex array of governance institutions and sustained investment by all actors.⁶

1.2.2. Climate Change

Australia is a bellwether for climate change: impacts are already observable and are expected to damage Australian agriculture. In broad terms, the temperate zone of

⁴ H Rittel and M Webber, 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155.

⁵ Kelly Levin et al, 'Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change' (2012) 45 *Policy Sciences* 123.

⁶ Paul Martin and Jacqueline Williams, 'Next Generation Rural Landscape Governance for Australia' in V Mauerhofer (ed), *Legal Aspects of Sustainable Development: Horizontal and Sectorial Policy Issue* (Springer International Publishing, 2015) 607.

southern Australia is anticipated to become drier (in an already dry landscape) and the northern tropics, wetter. Rainfall everywhere is anticipated to become more variable and unpredictable (in an already variable and unpredictable landscape).⁷ Australia has a sensitive environment to manage due to the interaction of topography, rainfall, temperature, and soils. Climate change effects may happen sooner, more intensely, and more detrimentally in Australia than in other parts of the world, and so our need for the new approaches foreshadowed in the *State of Environment Report* may appear earlier.

1.2.3. Low Public Support

Australia is a low-subsidy economy for agriculture. At less than 3 per cent of gross farm receipts, it has the lowest incidence of taxpayer support in the OECD except for New Zealand.⁸ There is little political appetite for providing subsidies to farmers in Australia, which contrasts with Europe and North America. Supporting the human presence in the countryside is not as deeply embedded in Australian culture as it is in Europe. Direct support akin to the European Union (EU) single payment and ‘good agricultural and environmental condition’ processes, as a way of bridging the gap between what farmers are actually paid and what they need to internalize social, environmental, and animal welfare costs, is not available.

Australian governments are said to have retreated in recent years from a prominent role in rural environmental governance and extension.⁹ The long term budgetary position of the government predicted in the five-yearly ‘Intergenerational Reports’ commissioned by successive Commonwealth Governments suggests it is unlikely Australian governments will be in a position to promise a sustained, widespread program of stable financial payments for good stewardship.¹⁰ Equally, it is doubtful that private landholders in rural Australia have the overall capacity to fund the scale of effective environmental maintenance and amelioration.¹¹ Alternative avenues for

⁷ CSIRO and Bureau of Meteorology, 'Climate Change in Australia - Information for Australia's Natural Resource Management Regions' (Technical Report, 2015).

⁸ OECD, 'Agricultural Policy Monitoring and Evaluation 2015 - Highlights' (2015) 19.

⁹ Brian W Head, 'From Government to Governance: Explaining and Assessing New Approaches to NRM' in Marcus B Lane, Cathy Robinson and Bruce Taylor (eds), *Contested Country: Local and Regional Natural Resources Management in Australia* (CSIRO Publishing, 2009) 15.

¹⁰ Australian Government, 'Intergenerational Report - Australia in 2055' (2015).

¹¹ Martin and Williams, above n 6.

generating resources – including funds from the market and other non-government sources – potentially become more compelling.

1.2.4. Demographics

Australia is highly urbanized and metropolitan. About 89 per cent of the 22 million people counted in the last census live in urban areas, and about 65 per cent in a handful of the biggest coastal state capital cities.¹² Such a concentration of population in a small number of urban centres heightens the risk of disconnection from food production, and of unrealistic and sentimental expectations about farming. The population of rural people in Australia is small – about 11 per cent (roughly 2½ million people)¹³ – and dispersed: farmers and graziers manage an area roughly the size of the entire EU, or about 60 per cent of the Australian continent.¹⁴

1.2.5. Distribution of Wealth

A number of economic factors curtail the ability of rural communities to invest in stewardship activities, which Martin and Williams have summarized as follows. It is estimated that environmental protection and restoration will require about 2 per cent of GDP, and much of that investment will be needed in non-urban areas. Rural areas face higher levels of disadvantage associated with poverty and reduced access to education, health and welfare services. Farmers are receiving a declining share of the price for farm produce, and this share is highly variable from commodity to commodity.¹⁵ Most of the wealth produced from agricultural produce accrues off-farm. The average weekly disposable income of farmers is much lower than other occupations. Though total wealth may be higher (taking assets into account), low disposable income limits farmers' ability to invest in stewardship activities. There is an absence of market incentives for good land management or disincentives for bad management. Consumers do not pay the full cost of the natural resources embodied in farm produce and exported from the farm. Many farmers operate in low-margin

¹² Australian Bureau of Statistics, *Australian Historical Population Statistics, 2014 (Release No. 3105.0.65.001) - Population distribution tables*.

¹³ Ibid.

¹⁴ ABARE-BRS, 'National Land Use 2005-06 (Version 4) Summary Statistics', Codes 2-4, 5.1, and 5.2 from.

¹⁵ About 8% for poultry producers to about 40-50% for vegetable producers.

commodity markets, with limited capacity to invest in environmental values not recouped in the price.¹⁶

In Australia, wealth and population are concentrated in urban areas. The capacity of rural communities to staff and fund environmental protection and remediation does not match the scale of the task. There are expectations from Australian urban-dwellers that a small number of highly dispersed rural landholders with limited time, funds and other capacities should manage this huge area for its environmental public good values as well as its private production values.

1.2.6. Governance Oversight

From the government's perspective, governing the behaviour of 135,000 discrete farming enterprises¹⁷ across the entire continent presents a formidable task of supervision. Traditional modes of governance, such as law and regulation, depend on oversight to detect breaches and activate enforcement. If governments cannot monitor performance, the governance framework is weakened. This is further complicated by jurisdictional fragmentation, mismatch of costs and benefits, antithetical political norms, and incapacity of the public purse to support adequate long-term investment.

1.2.7. Changing Expectations

Another challenge for the farming community is to understand and adapt to changing societal expectations about their management of natural resources. Modern farming is a multi-purpose enterprise,¹⁸ in which farmers produce many types of products, including some which are non-agricultural, intangible, conceptual, values-based, or public interest in character.¹⁹ These include biodiversity and nature conservation, aesthetic and spiritual sustenance, amenity, ecosystems services, and animal welfare. A farmer is now 'a maintainer of the rural landscape, a conservator of nature and a

¹⁶ Martin and Williams, above n 6.

¹⁷ Australian Bureau of Statistics, *4102.0 - Australian Social Trends, Dec 2012 - Australian Farming and Farmers*.

¹⁸ Sara J Scherr and Jeffrey A McNeely, 'Biodiversity Conservation and Agricultural Sustainability: Towards a New Paradigm of "Ecoagriculture" Landscapes' (2008) 363 *Philosophical Transactions of the Royal Society B* 477.

¹⁹ Tamsin Cooper, Kaley Hart and David Baldock, 'Provision of Public Goods Through Agriculture in the European Union' (Report prepared for the DG Agriculture and Rural Development, Institute for European Environmental Policy, 2009).

provider of services'.²⁰ However, the expectation to retain a viable business in the capitalist model is unrelenting, even where this conflicts with the delivery of the additional products and services. Globalization, climate change, commodity cycles, farm margins, and declining government support for Australian farmers add to the volatility and dynamism of the situation.²¹

1.2.8. Heterogeneous Landscape

Environmental management and governance require a landscape-scale approach,²² and farmers 'manage a large collection of landscape elements (fields, margins, hedgerows, ponds, etc.) of varying bio-geochemical properties, plant and animal species presence and resulting habitat quality'.²³ Landscape-level processes vary spatially from 'micro-level to far exceeding farm boundaries' and temporally across fast and slow biological processes. The interactions amongst these variables 'make management complex and can result in sudden shifts in agro-ecosystems'.²⁴ Landscape conservation needs to accommodate the abilities of landholders, foster competence building and motivation, and facilitate co-operative adaptive management, with low bureaucratic costs.²⁵

1.2.9. Multi-Tenure

To maintain a holistic or landscape perspective that avoids a narrow focus on individual components,²⁶ natural resource governance must look across tenures and property boundaries. This is important in the agricultural context, where governance must cope with many farmers with varying degrees of personal and legal attachment to their land, including those who hold strong tenures (restricting the extent to which

²⁰ Hannu T Vesala and Kari Mikko Vesala, 'Entrepreneurs and Producers: Identities of Finnish Farmers in 2001 and 2006' (2010) 26 *Journal of Rural Studies* 21, 22.

²¹ John Hicks et al, 'Succession Planning in Australian Farming' (2012) 6(4) *Australasian Accounting, Business and Finance Journal* 94.

²² Euan G Ritchie et al, 'Continental-Scale Governance Failure will Hasten Loss of Australia's Biodiversity' (2013) 27(6) *Conservation Biology* 1133.

²³ Derk Jan Stobbelaar et al, 'Internalization of Agri-Environmental Policies and the Role of Institutions' (2009) 90 *Journal of Environmental Management* S175, S176.

²⁴ Ibid, S176.

²⁵ Ibid, S175, S176.

²⁶ Carl Folke et al, 'Adaptive Governance of Social-Ecological Systems' (2005) 30 *Annual Review Environment and Resources* 441; M Soule et al, 'The Role of Connectivity in Australian Conservation' (2006) 10(4) *Pacific Conservation Biology* 266.

outsiders can intervene) and strong personal repugnance of perceived outsider interference.

1.2.10. Government Policy

Statements of the aims of public policy habitually seek to combine environmental integrity with viable commercial businesses, as seen in the planned outcomes for farming of the Australian Department of Agriculture:²⁷

Outcome 1: More sustainable, productive, internationally competitive and profitable Australian agricultural, food and fibre industries through policies and initiatives that promote better resource management practices, innovation, self-reliance and improved access to international markets.

The nonchalance with which these two are coupled in the same statement obscures the awkwardness of achieving both simultaneously. Noticeably absent from the planned outcomes are farmer wellbeing and viable farming communities as policy goals. The consequences of isolation, climate variability, globalization, price instability, and competing societal expectations can fall hard on farming families and communities. Research pointing to the higher rate of suicide amongst Australian farmers than for the community in general is distressing.²⁸ Farmer wellbeing is arguably an important agri-environmental policy goal, if not as an end in itself then for its utilitarian value. Farmers in a state of wellbeing – mentally, physically, emotionally, spiritually – are better equipped for the difficult but important task of operating farms that are both environmentally sensitive and financially viable, than farmers who are unwell, feeling hopeless and disconnected from nurturing relationships and supportive communities.

1.2.11. Trans-Disciplinary

The discussion above suggests farm-related environmental management and governance of natural resources is a trans-disciplinary endeavour involving a synthesis of learning from the natural, agricultural and environmental sciences, climatology, politics, economics, sociology, psychology, geography, demography, and law. No single discipline can adequately answer the big questions of human interactions with

²⁷ Department of Agriculture (Cth), *What We Do - Planned Outcomes for 2013-14* <<http://www.agriculture.gov.au/about/what-we-do>> accessed 1 Mar 2015.

²⁸ K Andersen et al, 'Suicide in Selected Occupations in Queensland: Evidence from the State Suicide Register' (2010) 44(3) *Australian and New Zealand Journal of Psychiatry* 243.

the environment, and natural resource governance needs to be informed by a plurality of knowledge, as well as an understanding of the limits of knowledge. Commentators have criticized the narrow, technical, expert-oriented characterization of agri-environmental issues by policy-makers.²⁹ Knowledge about ecosystems and environmental processes is far from complete and often contested. Many uncertainties abound about the consequences of human interventions, requiring a risk approach to management. Many farmers have unique experiential knowledge about their farms – ‘local knowledge’ or ‘vernacular knowledge’ – which augments or competes with other expert forms of knowledge.³⁰

1.3. Defining Collaborative Natural Resource Governance

1.3.1. Governance

A dictionary definition of governance denotes *a way of governing*, that is, a way of conducting the policy, actions and affairs of a state, organization or people with authority.³¹ An auxiliary meaning refers to controlling, influencing or regulating a person, action or course of events. The Latin and Greek roots of the English word relate to ‘steering’. Individuals act out behaviours but governors steer or influence their actions. Thus, in its ordinary meaning, governance encompasses policy, authority, controlling, influencing, regulating, actions, behaviours, individuals and groups of people. In this sense of the meaning, governance is concerned with moderating behaviour towards some policy ends. Governments and public institutions are traditional centres of governance but the definition above does not exclude other forms of governing.³²

²⁹ Veronica Strang, 'Integrating the Social and Natural Sciences in Environmental Research: A Discussion Paper' (2009) 11 *Environment, Development and Sustainability* 1; Andrea Koch et al, 'Soil Security: Solving the Global Soil Crisis' (2013) 4(4) *Global Policy* 434; F Vanclay, 'Social Principles for Agricultural Extension to Assist in the Promotion of Natural Resource Management' (2004) 44 *Australian Journal of Experimental Agriculture* 213.

³⁰ Robyn Bartel, 'Vernacular Knowledge and Environmental Law: Cause and Cure for Regulatory Failure' (2014) 19(8) *Local Environment: The International Journal of Justice and Sustainability* 891; Vanclay, above n 29, 219; Peter Andrews, *Back from the Brink: How Australia's Landscape Can Be Saved* (ABC Books, 2006); John Fenton, *Untrained Environmentalist: How an Australian Grazier Brought His Barren Property Back to Life* (Allen & Unwin, 2010).

³¹ J A Simpson and E S C Weiner (eds), *Oxford English Dictionary* (Clarendon Press, 2nd ed, 1989).

³² Lars Carlsson and Fikret Berkes, 'Co-Management: Concepts and Methodological Implications' (2005) 75 *Journal of Environmental Management* 65.

Governance raises a number of important questions, for example, what policy ends should governance direct itself towards, who determines them, and whose values underpin them? These questions highlight the power structures and power dynamics of governance, which are implicit in the IUCN definition of natural resource governance:

Governance of natural resources [is the] interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say in the management of natural resources – including biodiversity conservation.³³

Governance is inherently value-laden and power-dependent. Various formulae for articulating the values and circumscribing the power structures in natural resource governance have been proposed. For example, Davidson and colleagues summarize governance principles for natural resource governance in Australia by reference to guidelines from the World Bank, the United Nations Development Programme, and the European Commission.³⁴ Cave and colleagues outline a framework for co-regulatory governance based on the standard ‘good governance’ principles of transparency, accountability, targeting, proportionality and consistency.³⁵ Environmental effectiveness, economic and administrative efficiency, and social justice and equity have been included as critical criteria by other commentators.³⁶

³³ IUCN, 'Resolutions and Recommendations - Resolution 3.012 Governance of Natural Resources for Conservation and Sustainable Development' (2005); John Graham, Bruce Amos and Tim Plumptre, 'Principles for Good Governance in the 21st Century' (Policy Brief No 15, Institute on Good Governance, 2003) ii.

³⁴ Julie Davidson et al, 'Governance Principles for Regional Natural Resource Management' (Report No. 1 of the Project 'Pathways to Good Practice in Regional NRM Governance', Land and Water Australia, 2006).

³⁵ Jonathan Cave, Chris Marsden and Steve Simmons, *Options for and Effectiveness of Internet Self- and Co-regulation* (Technical Report for the European Commission, Rand Corporation, 2008). These authors were addressing co-regulation of the internet.

³⁶ Bruce Paton, 'Voluntary Environmental Initiatives and Sustainable Industry' (2000) 9 *Business Strategy and the Environment* 328; Anna Alberini and Kathleen Segerson, 'Assessing Voluntary Programs to Improve Environmental Quality' (2002) 22 *Environmental and Resource Economics* 157; Manuel F Cabugueira, 'The Voluntary Agreement as an Environmental Policy Instrument - Evaluation Criteria' (Paper presented at the Workshop of the European Research Network on Voluntary Approaches (CAVA), Copenhagen 1999); European Environment Agency, 'Environmental Agreements, Environmental Effectiveness' (1997) 3 *EEA Environmental Issue Series* 1; R Howarth, B Haddad and B Paton, 'The Economics of Energy Efficiency: Insights from Voluntary Programs' (2000) *Energy Policy* 477; Davidson et al, above n 34.

The role of government is much influenced in western democratic polity by the notion of the public-private dichotomy, a conceptual division closely associated with classical 18th and 19th liberalism, and which marked the extent to which government could intrude on the behaviour of citizens. The public sphere was the domain of government action – of laws and regulations; intervention by government in this sphere was both the prerogative and responsibility of government. The private sphere was the domain in which citizens and private firms were free of government intervention; in many formulations, this included domestic relationships, markets and economic activity generally.³⁷

Over the past three decades, scholars have identified a shift away from this construction of polity. Glasbergen suggests that liberal-democracies are in a state of flux in thinking about the old public versus private dichotomy and who bears responsibility for upholding the public interest. There is an evolving ‘partnership paradigm’ that underpins the development of collaborative governance:

The basic premise is that it is not up to one single actor — namely the government — to tackle all the problems of a society. Choices have to be made in a multi-actor context. Private parties from the market and civil society should share the responsibility for solving public problems ... In the new image of the manageable society, a strong state is not defined as a state that is able to rule from a central position. Rather, it is one that is able to stimulate the self-governing capacities of stakeholders on sustainability issues. Or at the very least, it is a state that is able to connect private interests to public objectives.³⁸

1.3.2. Natural Resources

In this study, the term ‘natural resources’ is widely construed and is mostly interchangeable with ‘environment’. The natural resource and environmental qualities of interest are those pertaining to agriculture; in other words, those used or affected by agriculture. The international handbook for environmental accounting uses narrower technical definitions that distinguish natural resource assets from the environment as

³⁷ J Weintraub, 'The Theory and Politics of the Public/Private Distinction' in J Weintraub and K Kumar (eds), *Public and Private in Thought and Practice - Perspectives on a Grand Dichotomy* (University of Chicago Press, 1997).

³⁸ P Glasbergen, 'Setting the Scene: The Partnership Paradigm in the Making' in P Glasbergen, F Biermann and A P J Mol (eds), *Partnerships, Governance and Sustainable Development: Reflections on Theory and Practice* (Edward Elgar, 2007) 1, 16.

a whole, and the services and functions provided by the environment.³⁹ However, for the purposes of this study, these distinctions are not necessary and the study encompasses the various categories, as far as they pertain to agriculture, distinguished in the *Handbook of National Accounting*:⁴⁰ mineral and energy resources, soil resources, water resources (including surface waters and major water bodies), biological resources (timber, crops, plants, animals), land, ecosystems (terrestrial, aquatic, and atmospheric), and the functions (resource, sink and service functions) and benefits they provide.

Furthermore, natural resources and environment are widely construed in a geographical sense to cover both on-farm and off-farm natural resources and environment. The behaviours that affect the environment occur *on-farm*, but the environmental effects of those behaviours could be on- or off-farm.

1.3.3. Natural Resource Governance

This study focuses on the actions and inactions (collectively called ‘behaviours’) of farmers that affect the condition of natural resources on- and off-farm, and the governance of those behaviours. Figure 1.2 shows a simplified model of the relationship between terms used in this study. Farmers’ behaviours affect natural resources directly, and governance actors influence the decisions of farmers to engage in behaviours, indirectly affecting the occurrence of those behaviours.

The government is the best known of the governance actors but all of the actors in the governance sphere – including farmers themselves – are ‘governors’ in the sense of being influencers of behaviour; this study is interested in governance systems that could bring the influence of all of these governors into play. In this study, to ‘contribute’ to rural natural resource governance, means to positively influence and steer farmers towards behaviours that conserve the environment and maintain or improve natural resource condition.

³⁹ *Handbook of National Accounting - Integrated Environmental and Economic Accounting 2003* (UN, EU, IMF, OECD, WB, 2003).

⁴⁰ *Ibid*, [7.30]-[7.76].

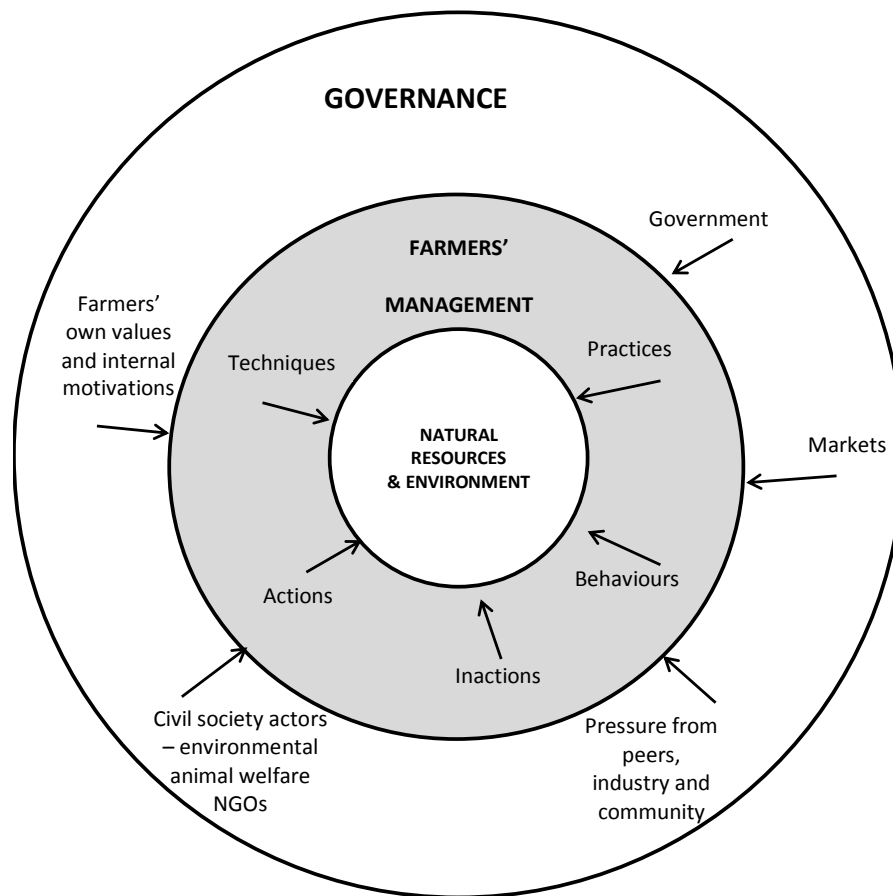


Figure 1.2: Natural resource management and governance

1.3.4. ‘Collaborative governance’ and ‘co-regulation’

Collaborative forms of governance are numerous and not easy to define succinctly. Ansell’s definition alludes to the traditional role of government as the dominant governance actor, and collaborative governance in this definition implies a partial relinquishment by government of its governance monopoly; government reaches out to non-government parties in the implementation of public interest goals:

A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets.⁴¹

⁴¹ Chris Ansell and Alison Gash, 'Collaborative Governance in Theory and Practice' (2007) 18 *Journal of Public Administration Research and Theory* 543, 544.

Emerson's definition does not frame government as a first mover, but alludes to the public-private dichotomy, by blurring the dividing line between public and private spheres:

The processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished.⁴²

The essence of collaborative governance in both definitions is engagement across the public-private divide – critically, the engagement of ‘private’ or non-government actors – in the implementation of public interest goals. Collaborative governance of rural natural resources seeks to co-opt non-government actors in the regulation of farmers’ behaviours towards public policy ends.

Governance is often framed in the literature as a spectrum or continuum, like the one in Figure 1.3.⁴³ Collaborative governance is usually positioned in the middle ground of the spectrum, bookended by strong central government involvement – analogous to the public realm – and weak or no central government involvement – analogous to the private realm.

At the government-heavy end, the government acts a centralized authority controlling the significant aspects of governance. It has supreme law-making authority, and it implements its laws and policies by using its monopoly on legal violence and coercion. The opposite end of the spectrum is the realm of self-regulation or voluntarism, and in its purest forms, centralized authority plays no role in governing. This is not to say there is neither governance nor rules that modify behaviour, but governance is achieved through mechanisms other than centralized government,⁴⁴ such as peer

⁴² Kirk Emerson, Tina Nabatchi and Stephen Balogh, 'An Integrative Framework for Collaborative Governance' (2012) 22(1) *Journal of Public Administration Research and Theory* 1, 2.

⁴³ Many variations on the spectrum theme are described in the literature: S Labatt and V W Maclaren, 'Voluntary Corporate Environmental Initiatives: A Typology and Preliminary Investigation' (1998) 16(2) *Environment and Planning C: Government and Policy* 191; Cave, Marsden and Simmons, above n 35; David Annandale, Angus Morrison-Saunders and George Bouma, 'The Impact of Voluntary Environmental Protection Instruments on Company Environmental Performance' (2004) 13 *Business Strategy and the Environment* 1; Department of Treasury and Finance (Vic), *Victorian Guide to Regulation* (2.1 ed, 2011) 14.

⁴⁴ Jody Freeman, 'Collaborative Governance in the Administrative State' (1997) 45 *UCLA Law Review*, 22.

pressure, a sense of reciprocal obligation, intrinsic motivations, co-operative strategies, or market drivers that can subsist independently of central governmental authority.

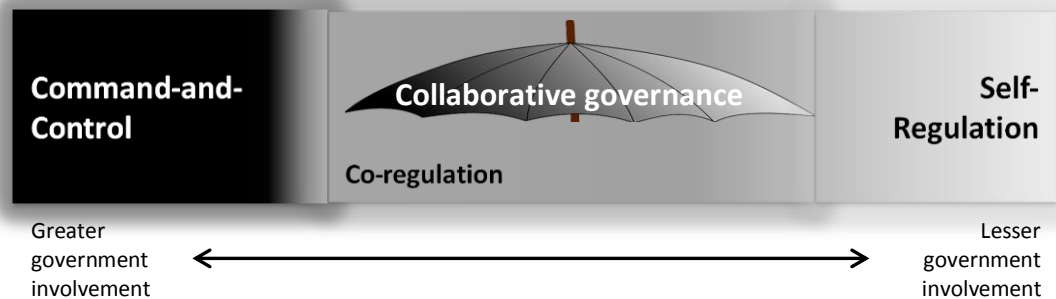


Figure 1.3: Mid-spectrum view of collaborative governance

The middle ground of the spectrum is the zone of collaborative governance, which is used in this paper as an umbrella term for various terms used in the literature, including partnered governance,⁴⁵ hybrid governance,⁴⁶ new environmental governance,⁴⁷ and even some views of co-management.⁴⁸ In this zone, governance prerogatives and duties (such as rule-making, monitoring and enforcement) are allocated among various actors, not just the government. Government shifts from a command-and-control position to one where it allows or expects non-government parties to regulate the behaviour of the governed. Such parties include individuals, businesses, trade associations, industry groups or non-profit public interest organizations.

The spectrum metaphor is complemented in the literature by a cocktail metaphor, which imagines collaborative governance as a strategic combination of techniques and instruments from each of the private and public realms.⁴⁹ Different ingredients –

⁴⁵ Atle Midttun, 'Partnered Governance: Aligning Corporate Responsibility and Public Policy in the Global Economy' (2008) 8(4) *Corporate Governance* 406.

⁴⁶ Kevin Stenson and Paul Watt, 'Governmentality and 'the Death of the Social'?: A Discourse Analysis of Local Government Texts in South-east England' (1999) 36(1) *Urban Studies* 189.

⁴⁷ Cameron Holley, Neil Gunningham and Clifford Shearing, *The New Environmental Governance* (Routledge, 2013).

⁴⁸ Claudia Baldwin, Mark Hamstead and Vikki Uhlmann, 'Co-Management as a Social Licence Initiative' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO, 2011) 173.

⁴⁹ Marc de Clercq and Andre Suck, 'Theoretical Reflections on the Proliferation of Negotiated Agreements' in Marc De Clercq (ed), *Negotiating Environmental Agreements in Europe: Critical Factors for Success* (Edward Elgar, 2002) 9; P N Nemetz, 'Federal Environmental Regulation in

voluntary and mandatory, regulatory and self-governing, public and private – augmented with economic incentives, taxes, charges, subsidies, information, and education support⁵⁰ are added in different arrangements for different settings:

There is not one optimal instrument of environmental policy. The key concern is to find an optimal combination of instruments to achieve environmental goals at the lowest cost.⁵¹

1.3.4.1. Interplay Between Law and Social Norms

Although the spectrum is a useful heuristic, regulatory and voluntary approaches are not entirely distinct or necessarily in conflict, despite being placed in apparent opposition on the spectrum. The voluntary end of the spectrum in part relies on voluntary adherence to social norms. External impositions including law can change social norms over time and these can become embedded in the individual by the psychological and sociological processes of internalization.⁵² It has long been recognized that respect for (rather than fear of) the law can be a driver of behaviour even where there is no possibility of sanction.⁵³

The prospect of governments overseeing every facet of farmers' behaviour in relation to the environment across the entire Australian continent is unrealistic. To a large extent, as in many areas of social relations, we rely on farmers' own sense of 'doing the right thing' to follow social norms and act out pro-environmental behaviours, which may coincidentally (or deliberately) match with legal norms. The complex interplay between law enforcement and social norms was analysed at length by Tyler in his seminal work, *Why People Obey the Law*.⁵⁴

Canada' (1986) 26 *Natural Resources Journal* 551; Sanjay Sharma, 'Different Strokes: Regulatory Styles and Environmental Strategy in the North American Oil and Gas Industry' (2001) 10 *Business Strategy and the Environment* 344.

⁵⁰ Neil Gunningham and Darren Sinclair, 'Environmental Partnerships: Combining Sustainability and Commercial Advantage in the Agriculture Sector' (RIRDC, 2002).

⁵¹ Michael G Faure, 'Instruments for Environmental Governance: What Works?' in Paul Martin et al (eds), *Environmental Governance and Sustainability* (IUCN Academy of Environmental Law, Edward Elgar, 2012).

⁵² Tom R Tyler, *Why People Obey the Law* (Princeton University Press, 2006).

⁵³ Carlsson and Berkes, above n 32.

⁵⁴ Tyler, above n 52.

Tyler criticizes the influence of public choice theories that came to dominate public discourse in law, psychology, political science, sociology and organizational theory.⁵⁵ The central premise of these discourses is that people are rationally self-interested and primarily moved by instrumental concerns (i.e. what is best for their own self-interest). From this perspective, compliance with law and policy is best handled by a social control model that emphasizes instrumental outcomes, particularly the threat or use of punishment as deterrence.⁵⁶ However, Tyler insists that this explanation of human behaviour is incomplete:

Citizens have been found to obey the law when the probability of punishment for noncompliance is almost nil and to break laws in cases involving substantial risks. Neither form of behavior makes much sense from a strictly instrumental perspective.⁵⁷

His findings, based on interviews with over 1,500 citizens of Chicago on their attitudes to legal compliance, proposed a different representation of human behaviour:

The image of the person resulting from these findings is one of a person whose attitudes and behavior are influenced to an important degree by social values about what is right and proper.⁵⁸

In a nutshell, ‘citizens who view legal authority as legitimate are generally more likely to comply with the law’.⁵⁹ This has obvious advantages for regulators:

If police officers and judges need to compel the public to obey by threatening or using force, they are required to expend enormous amounts of resources. Voluntary compliance costs much less and is, as a result, especially valued by legal authorities.⁶⁰

Conversely, when the normative element is missing, then authorities are compelled to resort to the deterrence model of controlling rewards and punishments: ‘Such

⁵⁵ Ibid 178.

⁵⁶ Ibid 269.

⁵⁷ Ibid 22.

⁵⁸ Ibid 178.

⁵⁹ Ibid 62.

⁶⁰ Ibid 4.

mechanisms are costly and in many cases may be inadequate'.⁶¹ The message for policymakers is that:

[I]mplementing policy should not focus simply on manipulating penalties and incentives: it should also be concerned with creating a normative climate that promotes the acceptance of law and public policies.⁶²

Tyler notes that in psychology, normative influences are regarded as 'internalized obligations'; that is, 'obligations for which the citizen has taken personal responsibility'.⁶³ It is this synthesis of legal objectives and voluntary adherence to social norms that collaborative governance seeks to capitalize on.

Given their apparent critical importance in this regard, external and internal drivers of behaviour and the processes of internalization are the subjects of more detailed explanations in Chapter 2, but a brief introduction is provided here. The motivational profile of individuals is dynamic and people internalize norms of behaviour to various extents along a continuum between wholly externalized and wholly internalized motivated behaviours.⁶⁴ External influences can be powerful but can also produce confounding motivations, such as resentment and evasion, sometimes fostering only a begrudging bare minimum of compliance, well below levels of scale and persistence necessary for ecological sustainability.⁶⁵

Reeson and Tisdell show, in laboratory experiments, that people do not adopt unchanging universal norms, but instead apply particular sets of norms to particular perceived situations.⁶⁶ In circumstances we perceive to be a public good situation, we tend to apply public-spirited norms and co-operative behaviours. However, if we perceive the same situation to be a competitive environment such as a market situation, then we tend to apply competitive behaviours. A public policy intervention can

⁶¹ Ibid 161.

⁶² Ibid 168.

⁶³ Ibid 24.

⁶⁴ Richard M Ryan and Edward L Deci, 'Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions' (2000a) 25 *Contemporary Educational Psychology* 54.

⁶⁵ T Dietz, E Ostrom and P C Stern, 'The Struggle to Govern the Commons' (2003) 302 *Science* 1907.

⁶⁶ Andrew F Reeson and John G Tisdell, 'Institutions, Motivations and Public Goods: An Experimental Test of Motivational Crowding' (2008) 68 *Journal of Economic Behavior & Organization* 273.

inadvertently change our perception of a given situation from a public interest situation to a competitive situation: 'Different norms apply to different contexts'.⁶⁷

Thus, law and policy have a delicate task, because of the potential negative effects on internal motivations. Theoretical and empirical studies refer to the 'crowding-out' of intrinsic motivations,⁶⁸ creating an unhealthy positive feedback loop – the more law you have, the more you need, because intrinsic motivations are crowded-out.⁶⁹

As Tyler notes, much of law and policy is based on a punitive, deterrent model directed towards the behaviour of 'wrong-doers', and the energies of the law are applied to convincing, incentivizing and compelling them to change their behaviour.⁷⁰ In focussing on those who must be regulated, lawmakers unconsciously tend to assume the impact of law is neutral on non-target 'right-doers'. However, this may be an unwise assumption.⁷¹ Intrinsic motivation is relatively fragile. Poorly considered public policy may have unintended impacts on non-target citizens by spoiling or crowding-out their intrinsic motivations for other-regarding behaviours.⁷²

This trade-off may not be properly factored into the policy analysis: Is the overall public benefit of changing the behaviour of recalcitrant landholders likely to be greater than the potential losses arising from de-motivating motivated landholders? The calculation of the trade-off depends on a number of factors, including the extent to which society regards de-motivating motivated landholders as desirable, as well as the ecological significance of their holdings.

⁶⁷ Ibid 440. See also Clive L Spash, 'The Brave New World of Carbon Trading' (2009) 15(2) *New Political Economy* 169.

⁶⁸ J Berg, J Dickhaut and K McCabe, 'Trust, Reciprocity, and Social History' (1995) 10 *Games and Economic Behavior* 122; U Gneezy and A Rustichini, 'A Fine is a Price' (2000) 24 *Journal of Legal Studies* 1; B S Frey and F Oberholzer-Gee, 'The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out' (1997) 87 *American Economic Review* 746; B S Frey, *Not Just for the Money: An Economic Theory of Personal Motivation* (Edward Elgar, 1997).

⁶⁹ Freeman, above n 44.

⁷⁰ G Becker, 'Crime and Punishment: An Economic Approach.' (1968) 76 *Journal of Political Economy* 169; Tyler, above n 52.

⁷¹ Reeson and Tisdell, above n 66; M Sidman, *Coercion and its Fallout* (Authors Cooperative Inc, 1989).

⁷² Reeson and Tisdell, above n 66.

1.3.4.2. Co-Regulation as an Instance of Collaborative Governance

Collaborative governance encompasses a wide range of governance forms from relatively loose or informal arrangements between government and non-government parties to arrangements enshrined in legislation.⁷³ In this paper, ‘co-regulation’ is placed within the realm of collaborative governance, albeit towards the government-centric end of that category, as shown in Figure 1.3. Co-regulation implies something stronger than a loose informal arrangement and connotes some reference to formal regulation enacted or delegated by Parliament. This is reflected in government definitions of co-regulation. For example, the *European Inter-Institutional Agreement on Better Law-Making* defines co-regulation as:

[T]he mechanism whereby a ... legislative act entrusts the attainment of the objectives defined by the legislative authority to parties which are recognised in the field (such as economic operators, the social partners, non-governmental organisations, or associations).⁷⁴

This contrasts with ‘self-regulation’, defined in the same agreement as:

[T]he possibility for economic operators, the social partners, non-governmental organisations or associations to adopt amongst themselves and for themselves common guidelines at European level (particularly codes of practice or sectoral agreements).⁷⁵

Australian State and Commonwealth government sources⁷⁶ describe co-regulation in terms of a strong partnership between government and industry, whereby industry develops its own code of conduct, accreditation, or ratings schemes with legislative backing from government, as shown in Figure 1.4, adapted from a Victorian State Government handbook on regulatory practice.

⁷³ Holley, Gunningham and Shearing, above n 47.

⁷⁴ *EU Interinstitutional Agreement on Better Law-Making* [2003] OJ C 321/1, art 18

⁷⁵ *Ibid* art 22.

⁷⁶ Australian Government, *Best Practice Regulation Handbook* (2010); Australian Communications & Media Authority, ‘Optimal Conditions for Effective Self- and Co-regulatory Arrangements’ (Occasional Paper, 2010); Department of Treasury and Finance (Vic), above n 43.

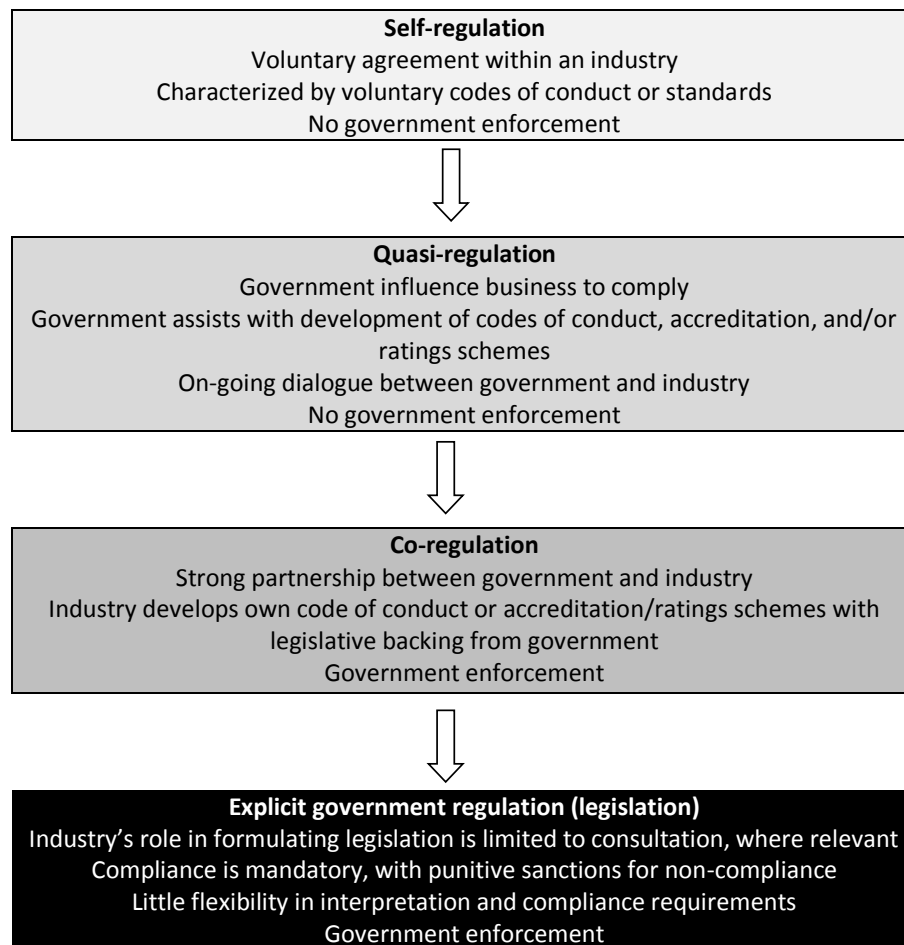


Figure 1.4: Regulation continuum

(Source: Department of Treasury and Finance (Vic), *Victorian Guide to Regulation* (2.1 ed, 2011))

For the sake of simplicity this paper uses fairly coarse definitions of governance, co-regulation, and collaborative governance but acknowledges that the topic has been elaborately described and finely dissected into many graduations across the spectrum. Cave et al propose a ‘Beaufort Scale’ of self-regulation divided into 12 sub-classes from ‘pure’ unenforced self-regulation to forms of self-regulation imposed by government backed up by compulsory levies.⁷⁷ Ayres and Braithwaite⁷⁸ distinguish between ‘enforced self-regulation’ and co-regulation, where the latter is used in relation to industry associations and the former for individual firms, albeit with government oversight in both cases. Similarly, Gunningham and Grabosky,⁷⁹

⁷⁷ Cave, Marsden and Simmons, above n 35.

⁷⁸ Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (Oxford University Press, 1992).

⁷⁹ Neil Gunningham and Peter Grabosky, *Smart Regulation: Designing Environmental Policy* (Clarendon Press, 1998).

following Rees,⁸⁰ divide self-regulation into three forms: pure self-regulation, mandated self-regulation (where the government mandates that an industry or profession regulate its own behaviour, but does not directly become involved with the details and enforcement, other than in an oversight role) and mandatory partial self-regulation. Midttun⁸¹ expands the linear governance spectrum into a two dimensional schema with a vertical axes showing strong to weak state governance and the horizontal contrasting hierarchical systems with market systems.

1.3.4.3. Drivers for Collaborative Governance

Explanations in the academic literature for the shift in governance away from traditional to non-traditional approaches involving hybridized and collaborative forms are varied but tend to revolve around a mixture of pragmatic concerns and ‘big picture’ theoretical developments.

Head has identified the convergence of a number of factors to explain the emergence of new ways of governing environmental concerns in rural Australia. These include a more contextual approach where the concept of effectiveness depends on problem context, and an increasing array of instruments for a regulator to use, including incentives and self-regulatory options. To these he adds the ascendancy of a neo-liberal preference for light-handed government, allowing for choice and adjustment, the incapacity of government to set precise standards for all areas, and the desire to get stakeholders to understand challenges and change behaviour.⁸²

The pragmatic concerns expressed in the literature tend to coalesce around the supposed ineffectiveness of governance that relies on measures that sit solely at one or other end of the governance spectrum. These shortcomings are surveyed below. This then drives the search for alternatives, including proposals to re-imagine the categories of public-private and government-non-government and instead borrow from each of these to create new hybrid models.⁸³

⁸⁰ J V Rees, 'Reforming the Workplace: A Study of Self-regulation' in Occupational Safety (University of Pennsylvania Press, 1988).

⁸¹ Midttun, above n 45.

⁸² Head, above n 9.

⁸³ Fisheries Research & Development Corporation, *Co-Management: Managing Australia's Fisheries Through Partnership and Delegation* (Report Project No 2006/06, FRDC's National Working Group for the Fisheries Co-Management Initiative) 8 <www.frdc.com.au>; Neil Gunningham,

Inadequacies of government-centric governance

Top-down governance by government through law and regulation is considered adequate for the so-called first generation of environmental governance problems; for example, point source pollution from large industrial facilities. However, it has had less success in relation to complex, wicked environmental problems.⁸⁴ Many scholars have commented that landscapes are heterogeneous and that biodiversity conservation requires a specific place-based approach, whereas law is relatively blunt in its application, and tends to provide a blanket approach that is slow to adjust for finer scales of ecological variation.⁸⁵

Gunningham and Sinclair summarize the main difficulties of using traditional governance to influence the behaviour of Australian farmers: command-and-control approaches may be difficult and expensive to monitor; they may face vehement political resistance, requiring much political capital to enact, let alone enforce; legal approaches are vulnerable to the fragmentation of responsibility across numerous agencies; mandatory rules may be inefficient, or unnecessarily intrusive; and they may crowd-out intrinsic and internalized norms of behaviour, resulting in the failure to develop an ethic of stewardship or to change attitudes to environmental management.⁸⁶

In addition, it has been said that government rules may stifle creativity and innovation by specifying technologies (rather than outcomes),⁸⁷ and may foster reactive and evasive approaches to environmental problems rather than a preventative mentality.⁸⁸

'Regulatory Reform and Reflexive Regulation: Beyond Command and Control' in Eric Brousseau, Tom Dedeurwaerdere and Bernd Siebenhüner (eds), *Reflexive Governance for Global Public Goods* (MIT Press, 2012), 86; Glasbergen, above n 38.

⁸⁴ Valerie A Brown et al, 'Towards a Just and Sustainable Future' in Valerie A Brown, John Alfred Harris and Jacqueline Y Russell (eds), *Tackling Wicked Problems Through the Transdisciplinary Imagination* (Taylor & Francis, 2010) 1, 4; C S Holling and Gary K Meffe, 'Command and Control and the Pathology of Natural Resource Management' (1996) 10(2) *Conservation Biology* 328, 329.

⁸⁵ Giuseppe Feola and Claudia R Binder, 'Towards an Improved Understanding of Farmers' Behaviour: The Integrative Agent-centred (IAC) Framework' (2010) 69(12) *Ecological Economics* 2323, 2323; Folke et al, above n 26; Bradley C Karkkainen, 'Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism' (2003) 87 *Minnesota Law Review* 943.

⁸⁶ Gunningham and Sinclair, above n 50, 7.

⁸⁷ Sharma, above n 49.

⁸⁸ S Georg, 'Regulating the Environment: Changing from Constraint to Gentle Coercion' (1994) 3(2) *Business Strategy and the Environment* 11; J Nash and J Ehrenfeld, 'Codes of Environmental Management Practice: Assessing their Potential as a Tool for Change' (1997) 22 *Annual Review of Energy and Environment* 487; A Verbeke and C Coeck, 'Environmental Taxation: A Green Stick or

Laws and regulations may be vulnerable to poor design, as a result of political compromise in the parliamentary process. Legislative objectives can be corrupted by the influence of private lobbying and rent-seekers.⁸⁹

Over-emphasizing the law is said to encourage a legalistic and adversarial attitude to environmental management,⁹⁰ which is especially unhelpful in areas where governments lack adequate expertise to create solutions.⁹¹ Different levels of regulatory strictness between jurisdictions can competitively disadvantage firms in one jurisdiction compared with a more weakly regulated jurisdiction.⁹² Legislation and regulation can accumulate over time without proper integration and rationalization, leading to increasing complexity, as well as opportunities to game the law: ‘there is a limit to the extent to which it is possible to add more and more specific prescriptions without this resulting in counterproductive regulatory overload’.⁹³

Inadequacies of voluntarism and self-regulation

The literature suggests that reliance on purely voluntary action and self-regulation are not effective alternatives to overcome the shortcomings of law and regulation. Voluntary approaches are said to be convincing only where there is a manifest ‘win–win’ in environmental improvement and financial returns in the short term.⁹⁴

Voluntary programs are not necessarily designed to achieve public interest aims and government objectives, and the voluntary character of participation and compliance affects their ability to enforce public interest objectives, compared with similar formal

a Green Carrot for Corporate Social Performance' (1997) 18 *Managerial and Decision Economics* 507.

⁸⁹ James Q Wilson, *Bureaucracy: What Government Agencies Do And Why They Do It* (Basic Books, 1989).

⁹⁰ D Beardsley, T Davies and R Hersh, 'Improving Environmental Management' (1997) 39(7) *Environment: Science and Policy for Sustainable Development* 6; K Harrison, 'Talking with the Donkey: Cooperative Approaches to Environmental Protection' (1999) 2(3) *Journal of Industrial Ecology* 51; Nemetz, above n 49.

⁹¹ Georg, above n 88; H M Osofsky, 'Multidimensional Governance and the BP Deepwater Horizon Oil Spill' (2011) 63(5) *Florida Law Review* 1077.

⁹² A M Rugman and A Verbeke, 'Corporate Strategies and Environmental Regulations: An Organizing Framework' (1998) 19(4) *Strategic Management Journal* 363.

⁹³ Gunningham, above n 83, 87.

⁹⁴ Neil Gunningham, 'The New Collaborative Environmental Governance: The Localization of Regulation' (2009) 36(11) *Journal of Law and Society* 145, 161.

regulatory initiatives.⁹⁵ Voluntary approaches have been criticized for staving-off stakeholder pressure for more stringent action, which can reduce the momentum of both governments and businesses to pursue actual environmental improvements.⁹⁶ And there is the risk of industry free-riders. Other criticisms include the risk of regulatory capture (i.e. where regulators' advocacy for the public interest is weakened by too close an association with private interests) with the result that targets established in a voluntary program may simply reflect the status quo, with no clear intention to improve environmental performance.⁹⁷

Furthermore, there is the potential for deception (greenwash), as well as the *perception* of greenwash. The perception is exacerbated where voluntary programs lack transparency and accountability, making it impossible for external stakeholders to determine whether there has been any environmental benefit.⁹⁸ All of this constitutes a problem of credibility for voluntary programs.

The apparent shortcomings of both traditional regulation and voluntary self-regulation have driven innovation in governance and sparked interest in hybrid models that theoretically provide the best of both worlds. In the hybrid arrangement, the strengths of one would theoretically cover for the weaknesses of the other. Collaborative governance and co-regulation are said to be products of this type of innovation.⁹⁹

'Big picture' theoretical developments that support governance innovation

Theoretical developments in a range of disciplines over the last three decades – including economic, political science, public choice, and regulatory theory – have provided a sympathetic intellectual backdrop for governance experimentation in

⁹⁵ Cave, Marsden and Simmons, above n 35.

⁹⁶ Annandale, Morrison-Saunders and Bouma, above n 43; M Brophy, A Netherwood and R Starkey, 'The Voluntary Approach: An Effective Means of Achieving Sustainable Development?' (1995) 2 *Eco-Management and Auditing* 127; T Newton and G Harte, 'Green Business: Technician Kitsch?' (1997) 34(1) *Journal of Management Studies* 75.

⁹⁷ Alberini and Segerson, above n 36; Richard D Morgenstern and William A Pizer, 'Introduction: The Challenge of Evaluating Voluntary Programs' in Richard D Morgenstern and William A Pizer (eds), *Reality Check - The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007a) 1.

⁹⁸ Christoph Böhringer and Manuel Frondel, 'Assessing Voluntary Commitments in the German Cement Industry: The Importance of Baselines' in R D Morgenstern and W A Pizer (eds), *Reality Check - The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007) 105.

⁹⁹ Todd A Steelman, *Implementing Innovation: Fostering Enduring Change in Environmental and Natural Resource Governance* (Georgetown University Press, 2010).

Australia and elsewhere. In the 1980s, Robert Axelrod tested strategies for actors confronted with the Prisoner's Dilemma (a classic game theory problem), and observed that a particular strategy (called tit-for-tat) was consistently better than others over the long term. Out of this, Axelrod developed a theory of co-operation with a number of bold claims, including that co-operation can emerge as a consequence of individuals pursuing their own self-interest without central authority, foresight, or even trust: in the right circumstances, co-operation can occur between enemies.¹⁰⁰

Building on the work of Axelrod and others, Ayres and Braithwaite developed a modified tit-for-tat approach for regulators called 'responsive regulation' in which the regulator moves up and down a pyramid of enforcement options in response to the behaviour of a regulated entity.¹⁰¹ These authors explore concepts such as enforced self-regulation, a tripartite model of governance involving government, industry and civil society players, and the 'benign big gun'. The 'big gun' is the ability of regulators to use command-and-control measures, and it is 'benign' because regulators can choose to refrain from using it in order to bargain with other parties to become involved in regulating an issue. This is analogous to the 'shadow of the law',¹⁰² in which the *threat* of regulation, rather than the regulation itself, is used as a mechanism of governance, usually to convince other actors (e.g. private industry associations) to apply pressure on governance subjects (e.g. their members) to moderate their behaviour.

In traditional governance, government may take the view that it *ought* to regulate things that it is in a powerful position to regulate. Using a collaborative governance paradigm however, government may take the view that it *ought not* to regulate things that it is in a powerful position to regulate, because it should use its powerful position – its benign big gun – as a bargaining chip to force business to regulate itself.

Developing responsive regulation further in a concept they called 'smart regulation', Gunningham and Grabosky appealed for 'regulatory pluralism', where public

¹⁰⁰ Robert Axelrod, *The Evolution of Cooperation* (Basic Books, Inc., 1984).

¹⁰¹ Ayres and Braithwaite, above n 78.

¹⁰² 'The shadow of the law is essentially an umbrella term for the law's possible indirect influence on behaviour. It refers to the way laws can affect people's actions even when there is no direct legal involvement': Stuart Birks, 'Why the shadow of the law is important for economists' (2012) 46(1) *New Zealand Economic Papers* 79, 79-80.

regulators are not confined to the limited set of governance measures that traditional thinking regards as appropriate to the public sphere. 'Smart' governments would carefully construct complementary mixtures of governance instruments that encourage businesses to go beyond legal compliance.¹⁰³ Regulators would be slow to use their own intervention as the first or main tool of governance, and instead would co-opt non-government players.¹⁰⁴

At about the same time as these regulatory theories were being developed, Ostrom and others were engaging in a long-running empirical investigation of the management and governance of common pool resources. Ostrom and supporters posited that Hardin's tragedy of the commons¹⁰⁵ is not inevitable and that there are instances of groups governing common-pool resources, such as pastures and water resources, in ways that prevent over-exploitation. In these instances, governance was said to occur without the intervention of a remote centralized government and without the necessity of encumbering resources with exclusive private property rights.¹⁰⁶

Ostrom observed that for common-pool resources that are parts of larger systems, 'appropriation, provision, monitoring, enforcement, conflict resolution and governance activities are organized in multiple layers of nested enterprises.'¹⁰⁷ In other words, governance is not the sole responsibility or prerogative of a remote central government, but is shared across a range of actors starting with local actors close to the resource. This nesting of governance resonates with the older concept of 'subsidiarity', which asserts that rules and decisions should be made close to the people who are most affected by them and 'any particular task should be decentralized to the lowest level of governance with the capacity to conduct it satisfactorily'.¹⁰⁸

Simultaneous with these developments, commentators identified the rise of political philosophies amenable to the idea of co-operative strategies in regulation of behaviour,

¹⁰³ Gunningham and Grabosky, above n 79.

¹⁰⁴ Ibid.

¹⁰⁵ Garrett Hardin, 'The Tragedy of the Commons' (1968) 162 *Science* 1243.

¹⁰⁶ Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990).

¹⁰⁷ Ibid 90.

¹⁰⁸ G R Marshall, 'Nesting, Subsidiarity, and Community-based Environmental Governance Beyond the Local Level' (2008) 2(1) *International Journal of the Commons* 75, 80.

such as New Public Management theory, which, since the 1990s, has become the dominant paradigm for public sector management around the world. It sees government as ‘steering not rowing’, using market and market-like mechanisms to deliver public services. In the new order, governments ‘purchase’ public services from ‘providers’. Public polity has moved from ‘government to governance’, with the result that government is said to have retreated from direct environmental regulation in favour of incentives and market-based instruments.¹⁰⁹

Lockie and Higgins see hybrid governance approaches as symptomatic of the ‘roll-out’ of a neo-liberal agenda in rural natural resource governance in Australia:

Broadly speaking, neoliberal strategies have been consistent with discourses of small government, fiscal austerity, individual freedom and private property rights. However, they also have been consistent with more upbeat discourses of community empowerment, partnership, capacity building and social capital.¹¹⁰

Such a roll-out suits those whose interests are advanced by neo-liberal policies, such as those benefitting from the ‘global concentration of retail ownership’ but Lockie and Higgins remain doubtful about the benefits of neo-liberalism for Australian farmers or environmental protection generally.¹¹¹

Lyster similarly argues that the combination of a neo-liberal sensibility and economic rationalism in the 1990s produced Australia’s National Competition Policy, which favoured deregulation, privatization, lower protection, increased competition and regulatory innovation. This then flavoured the development of natural resource governance policy at about the same time, which was heavily beholden to the assumption that increasing competition and efficiency would lead to improved environmental outcomes. Natural resource policymakers favoured a mixture of governance instruments: voluntary, market-oriented and regulatory instruments. Two results were the increased use of market-based measures for managing natural resource

¹⁰⁹ Head, above n 9.

¹¹⁰ Stewart Lockie and Vaughan Higgins, ‘Roll-Out Neoliberalism and Hybrid Practices of Regulation in Australian Agri-Environmental Governance’ (2007) 23 *Journal of Rural Studies* 1, 1-2.

¹¹¹ Ibid 8.

problems, and reliance on government-community partnerships, in the form of resource management committees, both of which Lyster critiques.¹¹²

Gunningham is less convinced about the supposed triumph of neo-liberalism. Such a triumph should have witnessed a smaller state and deregulation, but there are more laws and regulations than ever. In his view, governance is being reconstituted in the manner of 'regulatory capitalism', which uses the market as a regulatory mechanism (rather than the antithesis of regulation), as well as non-state regulators, governance networks, and hybrid public-private forms of governance and management.¹¹³

1.3.4.4. Typical Collaborative Governance Concerns, Actors & Contributions

Collaborative governance's concern with social and ecological goals brings it into 'the public rather than the private domain, entitling partnerships for sustainability to claim contribution to public goals, even where the partners are primarily private sector companies and NGOs'.¹¹⁴

In contrast to regulatory arrangements imposed unilaterally by government or action initiated unilaterally at the individual firm level, partnered governance is characterized by joint efforts using a diversity of organizations from across the traditional public-private spheres.¹¹⁵ Parties to a collaborative governance arrangement can be drawn from government, business or civil society. A typical arrangement would include at least the government and one business actor, for example, an industry or professional association.

There could be occasions where an NGO acts in the place of government as the public interest 'champion' and there are precedents for civil society groups such as environmental and socially concerned NGOs in almost all steps of partnered governance. The body responsible for the administration and implementation of a co-regulatory or partnered governance scheme may itself be an NGO. Civil society groups

¹¹² Rosemary Lyster, '(De)Regulating the Rural Environment' (2002) 19 *Environmental and Planning Law Journal* 34

¹¹³ Neil Gunningham, 'Environmental Law: Regulation and Governance: Shifting Architectures' (2009) 21(2) *Journal of Environmental Law* 179, 209.

¹¹⁴ Jordan Nikoloyuk, Tom R Burns and Reinier de Man, 'The Promise and Limitations of Partnered Governance: The Case of Sustainable Palm Oil' (2010) 10(10) *Corporate Governance* 59.

¹¹⁵ Glasbergen, above n 38; S Waddock, 'A Typology of Social Partnership Organizations' (1991) 22(4) *Administration & Society* 480.

can lend legitimacy and moral authority to partnerships through public perception of them as credible voices for just causes and representatives of the *volente general* (the ‘general will’)¹¹⁶ and can play auditing, watchdog and whistle-blowing roles as surrogate regulators.¹¹⁷

Contributions of governments and their public regulators include:¹¹⁸

- Deferring or foregoing enactment of more stringent regulation in exchange for industry implementing a satisfactory co- or self-regulatory arrangement;
- Refraining from carrying out a more stringent enforcement of extant regulations;
- Offering an incentive – technical or financial (including subsidies and tax exemptions);
- Publicly recognizing compliance or participation;
- Allowing some regulatory concession;
- Expediting approvals, licenses and permits for other activities; and
- Training and information.

Business parties potentially bring to partnered governance their resources, expertise, political capital to persuade firms to participate, entrepreneurship and innovation, all of which theoretically smooth the process of encouraging voluntary achievement of environmental goals more completely for less cost.

Importantly in the context of this study, non-government actors may bring VSPs to a collaborative arrangement. To introduce the potential for VSPs in a collaborative or co-regulatory regime, it is useful to consider the various tasks of governance. Table 1.1 is adapted from an Australian Government discussion paper on ‘co-management’ of Australian commercial fisheries by fishers and government.¹¹⁹ Although co-management is regarded in the literature as a distinct concept from co-regulation,¹²⁰

¹¹⁶ Midttun, above n 45.

¹¹⁷ Ayres and Braithwaite, above n 78; Gunningham and Sinclair, above n 50.

¹¹⁸ See Alberini and Segerson, above n 36; Paolo Bertoldi and Silvia Rezessy, ‘Voluntary Agreements in the Field of Energy Efficiency and Emission Reduction: Review and Analysis of the Experience in Member States of the European Union’ (Report prepared by the Joint Research Centre of the European Commission, 2010); Gunningham and Sinclair, above n 50.

¹¹⁹ Fisheries Research & Development Corporation, above n 83.

¹²⁰ Carlsson and Berkes, above n 32.

the wide definition of co-management in that report and the wide definition of collaborative governance in this study overlap. The list of co-management functions in the table is, in essence, a list of governance tasks, with 47 activities grouped around six broad functions: administration, compliance, research and development, monitoring and assessment, management planning, and communication and extension. The original paper discussed four scenarios related to the allocation of functions to two parties – government and fishers – but the extract shown in Table 1.1 outlines just two scenarios: a ‘centralized’ option (conventional, government-centric, no co-management); and a ‘delegated’ co-management option that this study equates with co-regulation.

Table 1.1: Allocation of functions in two models of fisheries management

(Shading shows functions allocated to fishers in the delegated model not allocated to them in the centralized model)

Functions	Centralized		Delegated	
	Gov't	Fishers	Gov't	Fishers
ADMINISTRATION				
Initial granting of fishing rights	✓	×	✓	×
Issue, renewal and transfer of authorities	✓	×	×	✓
Database of operators in industry (marketers, licence holders)	✓	×	×	✓
Committee support	✓	✓	×	✓
Logbook collection, data input, follow up letters	✓	×	×	✓
Setting legislative fees	✓	×	✓	×
Service fee collection	✓	×	×	✓
Auditing financial and administrative performance	✓	×	✓	×
Annual and other reports	✓	×	×	✓
Budget compilation, tracking and reporting	✓	×	×	✓
Government policy making	✓	×	✓	✓
COMPLIANCE				
Risk analysis	✓	×	✓	✓
Surveillance and monitoring	✓	×	✓	✓
Enforcement, intelligence, analysis	✓	×	✓	×
Information gathering	✓	✓	✓	✓
Prosecution of offences, “on the spot” fines	✓	×	✓	×
Legislative changes	✓	×	✓	×
Administrative penalties	✓	×	×	✓
RESEARCH AND DEVELOPMENT				
Establishing ecosystem benchmarks	✓	×	✓	×
Fishing related ESD research projects	✓	×	✓	✓
Non-fishery related ESD research projects	✓	×	✓	×
Industry development	✓	✓	×	✓
Write or commission project proposal	✓	✓	✓	✓
Project management	✓	×	✓	✓

Functions	Centralized		Delegated	
	Gov't	Fishers	Gov't	Fishers
Research activities; delivery	✓	✗	✓	✓
Assisting researchers	✓	✓	✓	✓
Provision of information, data	✓	✓	✓	✓
Report writing	✓	✗	✓	✗
Extension of information	✓	✗	✓	✓
Research logbooks	✓	✗	✓	✓
MONITORING AND ASSESSMENT				
Stock assessment	✓	✗	✓	✓
Ecosystem assessment	✓	✗	✓	✗
Stock assessment audit	✓	✗	✓	✗
Data collection and analysis	✓	✗	✓	✓
Catch and effort log books	✓	✓	✗	✓
Threatened, endangered or protected species reporting	✓	✗	✗	✓
Observer program	✓	✗	✗	✓
MANAGEMENT PLANNING				
Sustainability performance limits (e.g., targets, total mortality)	✓	✗	✓	✗
Defining harvest strategies, (e.g., decision rules, economic performance catch targets)	✓	✗	✗	✓
Legislation drafting, regulation changes	✓	✗	✓	✗
Codes of practice	✓	✓	✗	✓
Environmental management systems	✓	✗	✓	✓
Community / access / interactions	✓	✗	✓	✗
Community / access issues and responses	✓	✓	✓	✓
COMMUNICATION AND EXTENSION				
ESD framework	✓	✗	✓	✗
Communication among fishers	✗	✓	✗	✓
Community education and awareness	✓	✗	✓	✓

(Adapted from Fisheries Research & Development Corporation, 2008, 16)

Looking at the functions allocated to the proposed non-government industry partner (fishers), many of these are similar to activities currently undertaken by VSPs, for example:

- Database of operators in industry
- Risk analysis
- Surveillance and monitoring
- Information gathering
- Extension of research information
- Data collection and analysis
- Codes of practice
- Environmental management systems
- Community / access issues and responses

- Communication among resource users
- Community education and awareness

The extent to which each of the parties *can* carry out any of these functions is dependent on their capacity (i.e. money, expertise and staff), willingness and bargaining position in the power dynamic. From a public policy perspective, the extent to which a party *should* take on a function depends on avoiding conflicts of interest and abuses of power. There is a fine line between an industry contributing expertise in order to improve the effectiveness of rules, and industry’s lobbying to have rules created that give particular players an undue advantage.

1.4. Voluntary Stewardship Programs

There is a large array of voluntary sustainability instruments for Australian farmers – Rowland lists almost a hundred different programs, some private sector and others developed with public sector support.¹²¹ The literature describes various schemata for categorizing voluntary environmental protection instruments generally,¹²² and this study makes no attempt to devise a comprehensive classification system for VSPs. However, to illuminate the range of initiatives available to Australian farmers, a non-exhaustive taxonomy is shown in Table 1.2.

Table 1.2: Draft taxonomy of VSPs

Basis of type	Sub-types	Examples & comments
Origin	Farmer-initiated	Landcare, CLM
	Advocacy NGOs	RSPCA or Humane Society programs
	Government-initiated	Grazing Land Management (Qld)
	Statutory basis	Covenants: NSW Nature Conservation Trust
	Retail-initiated	GlobalGAP, supermarket schemes
Interaction with government	Co-regulatory	Cotton BMP
	Co-funded	Programs of co-funded rural R&D corporations.
Focus of standards ¹²³	Process or procedural	Compliance with process or procedure
	Production	End-product with specific qualities
	Performance	Specific environmental performance criterion
	Hybrids of the above	CLM, organic certification

¹²¹ Philippa Rowland, 'National Inventory of Environmental Management Systems in Australian Agriculture' (RIRDC, 2009).

¹²² See Annandale, Morrison-Saunders and Bouma, above n 43.

¹²³ Thea Mech and Michael D Young, 'Designing Voluntary Environmental Management Arrangements to Improve Natural Resource Management in Agriculture and Allied Rural Industries' (RIRDC, 2001); Rowland, above n 121.

Basis of type	Sub-types	Examples & comments
Degree of prescriptiveness ¹²⁴	Prescription-oriented	Best management practices (BMP)
	Continuous improvement	Environmental management system (EMS), CLM
Degree of regulation ¹²⁵	Intensive self-regulation	Organic certification, FSC
	Non-specific claims	'Natural', 'sustainable'
	Government-set	Chemical intensive, wild harvest
Specificity	Specific industry	Agriculture-specific vs generalist
	Specific sector	Programs of sector peak bodies and R&D organizations (e.g. cotton, dairy, sugarcane)
	Specific issues	Water (Water Stewardship), nature conservation (Land for Wildlife)
	Specific localities	Great Barrier Reef programs
	Industry non-specific	EMS, <i>ISO 14001</i> , corporate environmental reporting (CER), Global Reporting Initiative (GRI)
	Sector non-specific	CLM and organic certification
	Issue non-specific	CLM and organic certification
Internal/external focus	Internal planning and business improvement	Best management practices (BMP), EMS, Property management system (PMS), farm management system (FMS), CLM, organic certification,
	Internal planning and improvement + External validation	CLM, organic certification, CER, GRI, some applications of EMS, PMS & FMS
Purpose	Education & awareness	Birchip Cropping Group, Kondinin Group
	Marketing	Organic certification
	Social licence	CER, GRI
	Regulatory compliance	Cotton BMP
'Clean continuum' ¹²⁶	From 'biological/natural' to 'chemical/industrial'	Wild harvest to high input chemical intensive
Target of participation	Farmers	CLM, farm industry schemes
	Supply chain	Processors and aggregators (Water Stewardship)
	Mix of the above	Organic certification
Degree of independent scrutiny ¹²⁷	First party audit	Self-assessment
	Second party audit	External auditor with an interest in outcome

¹²⁴ Thomas G Measham, Gail J Kelly and F. Patrick Smith, 'Best Management Practice for Complex Problems: A Case Study of Defining BMP for Dryland Salinity' (2007) 45(3) *Geographical Research* 262.

¹²⁵ Jason Alexandra and Rod May, 'Australian Organic Agriculture – Prospects for Growth?' (RIRDC, 2004) 5.

¹²⁶ S McCoy and G Parleviliet, 'The Export Market Potential for Clean and Organic Agricultural Products' (RIRDC and Agriculture WA, 1998) 9.

¹²⁷ ISO, *ISO 19011: Guidelines for Auditing Management Systems* (2nd ed, 2011), s 3 (Terms and Definitions).

Basis of type	Sub-types	Examples & comments
	Third party audit	External auditor with no interest in outcome
Power dynamics of enforcement	Membership-based	Organic certification, CLM
	Powerful external actors	GlobalGAP
Consistency with normative base	Statutory norms	Cotton BMP (Qld <i>Accreditation Framework for FMS</i>)
	International norms	ISO, ISEAL, IFOAM

The initiatives of interest in this study are termed VSPs for farmers. These programs are ‘voluntary’ in the sense that participation of farmers is not mandated by law. The study focuses on non-government initiatives, because of the emphasis on collaboration between government and non-government sectors.

‘Stewardship’ connotes programs that address public interest concerns relating to environment and natural resources, including biodiversity, soils, carbon management, water use efficiency, river and streams, groundwater, and erosion control. Such programs could address other public and private interests concurrently, such as animal welfare, drought preparedness, quality assurance, market access and profitability.

‘Program’ means a systematic process that farmers use. In this sense, participation in a program is more than membership of an interest group, industry peak body or political association, though any of these could operate VSPs. ‘Program’ connotes more than a single innovation or practice, such as zero till or bush regeneration, and implies that stewardship requires persistent, organized improvement actions. The programs of interest in this study are those that primarily target commercial farmers, as opposed to other types of private landholders or other parts of the supply chain.

For completeness, a few of the other classification schemata in the literature are discussed here. Voluntary programs have been categorized according to the scale of the interactions between private enterprises, for example:

- Business-to-business arrangements — where different companies work together to produce a product with socially responsible credentials (e.g. seafood, paper, or textiles); or

- Industry-to-industry — where different sectors work together across the links of a supply chain for common goals (e.g. forest stewardship, sustainable coffee).¹²⁸

Another approach in the literature is to take the trichotomy of government, business (or industry), and civil society, and articulate the various commutations and permutations, for instance: government and business partnerships; business and civil society partnerships (e.g. ‘green alliances’); business and business partnerships (e.g. between big brand retailers and their suppliers); government and civil society partnerships; and multi-party partnerships.¹²⁹

Some commentators use a taxonomy reflecting the intensity of the relationship with government,¹³⁰ namely:

- *Unilateral initiatives* – internal programs of individual firms;
- *Public voluntary programs* (also called ‘voluntary challenges’) – with protocols developed by public agencies;
- *Negotiated agreements* between government and industry;

Further categories include:

- *Private codes* – developed by industry associations, NGOs and standards organizations;¹³¹ and
- *Recognized environmental standards* – such as the *ISO 14001* standard.¹³²

Industry association codes and environmental standards could be co-opted into co-regulatory arrangements. Public voluntary programs and negotiated agreements are more likely than unilateral initiatives to lie under the co-regulatory umbrella, given that, by definition, regulators play no active role in the design of unilateral

¹²⁸ Nikoloyuk, Burns and de Man, above n 114.

¹²⁹ Gunningham and Sinclair, above n 50; John W Selsky and Barbara Parker, 'Cross-Sector Partnerships to Address Social Issues: Challenges to Theory and Practice' (2005) 31 *Journal of Management* 849.

¹³⁰ For example, C Carraro and F L  v  que, 'Introduction: The Rationale and Potential of Voluntary Approaches' in C Carraro and F L  v  que (eds), *Voluntary Approaches in Environmental Policy* (Kluwer Academic Publishers, 1999); Alberini and Segerson, above n 36; Morgenstern and Pizer (2007a), above n 97.

¹³¹ Paton, above n 36.

¹³² Madhu Khanna, 'Non-mandatory Approaches to Environmental Protection' (2002) 15(3) *Journal of Economic Surveys* 291.

initiatives.¹³³ However, a unilateral initiative might have the same effect as co-regulation if it is developed in direct response to the threat of regulation (the ‘shadow of the law’).

The next section explores examples of non-government organizations and voluntary initiatives incorporated into collaborative arrangements, mostly drawn from natural resource management, but with a few insights from other industries. These examples are arranged around five broad headings; the first four involve collaborations with government, and the last involves collaborations among non-government parties that the state may or may not be involved with.

1.4.1. The State Uses Non-Traditional Tools

Grant schemes for on-ground environmental works provide farmers with an opportunity for voluntary action, although the schemes remain within the government-centric part of the governance spectrum: government sets the rules, administers the scheme, retains enforcement and compliance roles, but may co-opt processes from the commercial domain such as auctions and tenders to deliver the grants. Economic theorists purport that these processes create a marketplace for public goods and are more cost-effective for the public purse.¹³⁴

Such schemes are considered market-based instruments (MBIs) because auctions and tenders are utilized in the marketplace to discover the most competitive bid for the supply of goods and services. Government-managed MBIs have been used in Australia for nature conservation programs;¹³⁵ government auctions to land managers, or invites tenders from them, for the opportunity to undertake land stewardship activities funded by the government.

Tennent and Lockie concluded in a study of a government-initiated, tender-based MBIs that it created a market, reduced information asymmetry, delivered short-term biodiversity gains, increased awareness, fostered engagement between government and landholders, and promoted innovation to a limited degree. However, with no

¹³³ Alberini and Segerson, above n 36.

¹³⁴ U Latacz-Lohmann and C Van der Hamsvoort, 'Auctioning Conservation Contracts: A Theoretical Analysis and an Application' (1997) 79 *American Journal of Agricultural Economics* 407.

¹³⁵ Department of Environment (Cth), *Tender Based Approaches and Auctions for Conservation Payments* <<http://www.environment.gov.au/node/13922>>.

mechanism to pass costs to consumers, the ongoing market was entirely dependent on continued government support. In their view, the value to the public purse was uncertain and the fundamental moral and political questions inherent in biodiversity conservation on private land remained unanswered.¹³⁶

1.4.2. The State Uses Non-State Actors in State-Orchestrated Roles

Australian animal welfare policy is co-regulatory, as the state allows a non-government actor – the Royal Society for the Prevention of Cruelty of Animals (RSPCA) – to participate in regulatory roles traditionally preserved for government. Governments have relied on the RSPCA to enforce animal welfare legislation from the first half of the 19th century, long pre-dating the more recent interest in collaborative governance.¹³⁷ The RSPCA enforces traditional regulation in the command-and-control mode, backed up by fines and imprisonment, but also uses its powerful position of persuasion and advocacy, as well as issuing enforceable directions and warnings.¹³⁸

Drafting the RSPCA into the governance arena presents opportunities and risks. Policymakers leverage the credibility of a respected organization, and there may be advantages to the public purse if the RSPCA is driven to implement the objectives of animal welfare legislation more conscientiously than government. However, the RSPCA is more financially constrained than government, limiting its prosecutorial capacity. In White's view, the investigation-to-prosecution-to-conviction ratio is low: 'Limited resources mean that only those cases that are almost certain to succeed are prosecuted'.¹³⁹

Another example is that of the five large, private irrigation corporations in southern NSW: Coleambally, Jemalong, Murray, Murrumbidgee, and Western Murray. These corporations handle statutory responsibilities for monitoring, water accounting and

¹³⁶ R Tennent and S Lockie, 'Market-Based Instruments and Competitive Stewardship Funding for Biodiversity Conservation: The Achievable Reality' (2013) 20(1) *Australasian Journal of Environmental Management* 6, 17.

¹³⁷ S White, 'Regulation of Animal Welfare in Australia and the Emergent Commonwealth: Entrenching the Traditional Approach of the States and Territories or Laying the Ground for Reform?' (2007) 35(3) *Federal Law Review* 347, 352.

¹³⁸ *Ibid* 353.

¹³⁹ *Ibid* 354.

policing.¹⁴⁰ However, these duties are somewhat of a special case; a legacy of the corporations being statutory creatures¹⁴¹ established to allow the privatisation of the previously government-owned irrigation schemes.

Another governance collaboration involving non-state actors in state orchestrated roles is regional natural resources management (NRM). This is the rural natural resource governance model that has been operating in Australia since the early 2000s. It was instituted by Commonwealth and state governments using Commonwealth funding under its natural resource programs, the Natural Heritage Trust and the National Landcare Programme. To implement the regional model, the Australian landmass, estuarine and coastal areas were divided into 56 regions, each having a regional NRM organization recognized by the Commonwealth as ‘delivery agent’.¹⁴²

Regional NRM is a complex governance structure and it is beyond the scope of this chapter to review all of the nuances and criticisms of the model.¹⁴³ Part of the complexity is explained by the constitutional arrangements that underpin the Australian federal structure. In the *Australian Constitution*, there is no head of power for the Commonwealth called ‘environment’ or ‘natural resources management’. Therefore, unless the Commonwealth can resort indirectly to some other head of power in the *Constitution*,¹⁴⁴ environment and natural resources management are, for the most part, state matters. However, the revenue raising powers of the states are limited compared with those of the Commonwealth. Thus the Commonwealth can influence matters outside its formal heads of power by putting conditions on the flow of funds to the States.

¹⁴⁰ Department of Primary Industries (NSW) – Office of Water, *History of Irrigation Corporations in NSW*, <<http://www.water.nsw.gov.au/water-licensing/corporate-licences/irrigation-corporations/history-of-irrigation-corporations-in-nsw>>.

¹⁴¹ *Irrigation Corporations Act 1994* (NSW).

¹⁴² Australian Government, *National Landcare Programme - Regional NRM Organisations* <<http://www.nrm.gov.au/regional/regional-nrm-organisations>>; NRM Regions Australia, <<http://nrmregionsaustralia.com.au/>>; *Commonwealth v Tasmania* [1983] HCA 21; (1983) 158 CLR 1 (‘*Tasmanian Dam Case*’).

¹⁴³ For an overview, see J A Williams, Beeton R J S and G T McDonald, ‘Success Attributes of Regional Natural Resource Management’ (2008) 3(3) *International Journal of Sustainable Development and Planning* 203; Sandy Paton et al, ‘Regional Natural Resource Management: Is it Sustainable’ (2004) 11(4) *Australasian Journal of Environmental Management* 259.

¹⁴⁴ For example through the external affairs power under s 51 (xxix) of the *Australian Constitution*: *Tasmanian Dam Case*, [1983] HCA 21; (1983) 158 CLR 1.

Therefore, NRM regionalism is ostensibly a model for Commonwealth investment and policy implementation, but the legal foundation for regional NRM bodies is state-based. Different states have different regional NRM systems. In Queensland, regional NRM bodies must be non-government organizations, the rationale of the Queensland Government being that:

The non-statutory nature of the arrangements means the regional NRM bodies are not perceived by communities as part of the state or Australian governments. This allows them to develop unique relationships with landholders, peak bodies, Indigenous groups and others.¹⁴⁵

The Queensland arrangements bear general hallmarks of collaborative governance, but not specifically co-regulation. In other Australian states (e.g. NSW and Victoria), the regional bodies are statutory agencies that carry out some statutory functions. As such, the arrangements are wholly government orchestrated and could not be said to be collaborative or co-regulatory, except to the extent that the boards of the agencies comprise nominees who are not government employees.

Organic certification also involves co-regulatory arrangements whereby non-government organizations fill roles laid out in statute, though not, on the face of it, for natural resource issues: organic organizations are co-opted in the Commonwealth Government's regime for certifying exported produce labelled as organic. The details of organic governance will be explored at length in Chapter 6.

1.4.3. The State Uses VSPs

In the animal welfare example above, the role the state sets for the RSPCA is very specific. In other cases, the state uses non-state actors but without detailed specification of roles. In 1990, the German government enacted laws to compel industry to take responsibility for product packaging, which was otherwise a burden on government to collect and dispose of. The law gave industry two options: comply with a government deposit scheme; or make its own arrangements to meet regulatory targets.

¹⁴⁵ Department of Environment & Resource Management (Qld), 'Queensland Regional Natural Resource Management Framework' (2011) 10.

Believing the latter to be better, German industry created *Grüne Punkt* – Green Dot – a private industry collection and recycling program. Participating companies paid a licence fee for the Green Dot logo, calculated according to the volume of waste and ease of recycling. The scheme’s waste collectors would not collect waste unless it had the logo.

Rousso and Shah note the following features of the Green Dot program.¹⁴⁶ The government position was underpinned by a clear governance philosophy: the producer of waste is both responsible for the waste, and a key actor in solving the waste problem. This contrasts with a view that waste management is a government responsibility. The government had objectives, but did not reject private sector solutions. The ordinance gave affected companies an alternative to government-imposed regulation. Conversely, the law did not force companies to join the industry scheme – companies could undertake their own collection, but were obliged to report on waste management whatever option they took.

The situation created an incentive for industry action, which proceeded in the shadow of the law and the threat of further regulation. The government’s proposal for the deposit scheme was a real and implementable alternative, with political backing from environmental and community groups. Furthermore, the government’s position was not mere bluff: at one stage, it introduced a deposit scheme when industry failed to meet its targets.

Green Dot nested into an integrated legal framework of complementary instruments such as the fees consumers were charged for waste collection, and laws allowing consumers to leave excess packaging at the stores where they made their purchase. The scheme harnessed alternative avenues of enforcement, such as trademark infringement. As participating companies paid a licence fee, there was an impetus for holding free riders to account. The incentive could be moved up and down the value chain. Retailers could pressure suppliers to be parsimonious with packaging, which encouraged manufacturers to become involved in recycling research and development. Down the chain, retailers were able to pass the costs of Green Dot to consumers.

¹⁴⁶ Ada S Rousso and Shvetank P Shah, 'Packaging Taxes and Recycling Incentives: The German Green Dot Program' (1994) 47(3) *National Tax Journal* 689.

Green Dot is an example of a co-regulatory arrangement utilizing a non-government VSP that was established in direct response to a government threat. The advantage of this is that the VSP can be tailored specifically to deliver government objectives. The downside is that the program, its rules, ethos and networks must be created *ex nihilo* and may be confined to a narrow view of sustainability, dealing only with the matters raised in a specific piece of regulation.

Some farmer groups have been attending to the stewardship problem for years, so it makes sense to ask whether these might be appropriate partners in co-regulatory arrangements. They already have established networks, channels of communication, camaraderie and peer cohesion, as well as extensive knowledge and experience of practical problem solving. Their use in Australian natural resources co-regulation has precedent in water resources legislation in Queensland, under which VSPs can gain a status equivalent to a statutory planning instrument – the Land and Water Management Plan (LWMP).

The Queensland example involves three components: an accreditation framework, legislation, and a VSP. The accreditation framework attempts to streamline overlapping public and private rule-making processes, to remove duplication and redundancy. The first step was negotiation between the Queensland Government and the Queensland Farmers Federation, which resulted in a memorandum of understanding (MOU) under which both parties acknowledged commonalities between certain statutory processes and industry farm management systems (FMSs). The Government agreed in the MOU to recognize industry-led FMSs where there was overlap.¹⁴⁷

The next step was the formulation of an overarching policy on FMS recognition, the *Accreditation Framework for Farm Management System (FMS) Programs*, which was necessary so as not to favour any particular program or industry. On the face of it, any non-government organization (including industry, regional NRM groups and consultants) with a scheme that matched the policy criteria was eligible to be

¹⁴⁷ Queensland Farmers Federation & Queensland Government, *Memorandum of Understanding (MOU) between the Queensland Government and the Queensland Farmers Federation relating to Farm Management Systems* (2005).

accredited under the policy.¹⁴⁸ There is a significant investment of time and effort on the part of both government and non-government parties in establishing the institutional infrastructure for this type of governance. However, the only significant statutory process to date that has been included is the LWMP under the *Water Act 2002* (Qld) and the only program accredited has been the cotton industry program: Cotton BMP (Best Management Practice).

Under Queensland's *Water Act*, irrigators may not extract water for irrigation without a licence and, to secure a licence, they must submit an LWMP. Cotton BMP is an industry-developed VSP for cotton farmers originally focused on pesticides because the industry was facing community backlash over pesticide usage. Thus the industry had an incentive to voluntarily improve its performance and *demonstrate* improvement, or otherwise face the unattractive prospect of government regulatory intervention on the back of community concern. Over time, the BMP morphed into a whole-of-farm risk management process covering a wider range of environmental and business issues.¹⁴⁹ The result of accreditation is that the government recognizes a cotton farmer's participation in Cotton BMP as equivalent to an LWMP. The whole governance arrangement is represented graphically in Figure 1.5. Cotton BMP does not replace the statutory pathway: a cotton farmer may choose to ignore the Cotton BMP pathway and proceed with an application under the original LWMP rules.

The Cotton BMP model could apply to other administrative concessions where farmer participation in a non-government program substantially achieves regulatory objectives, and a greater understanding of the risks and opportunities for co-regulatory regimes to make use of VSPs has practical applications in Australian natural resource management. These include statutory recognition of voluntary codes for the purposes of demonstrating compliance with an environmental duty of care in Queensland;¹⁵⁰

¹⁴⁸ Department of Natural Resources & Mines (Qld), *A Framework for the Accreditation of Farm Management System Programs* (2005).

¹⁴⁹ Cotton BMP, <<http://www.bmpcotton.com.au/>>; Guy Roth, 'Retaining the Social Licence: The Australian Cotton Industry Case Study' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO Publishing, 2011) 69.

¹⁵⁰ *Environmental Protection Act 1994* (Qld), s 493A(5)(a); Department of Natural Resources & Water (Qld), *Delbessie Agreement (State Rural Leasehold Land Strategy)* (December 2007) s 5.1.

‘code-based agricultural land management’ and biodiversity offsetting in NSW;¹⁵¹ recognising verification procedures of non-government certification systems in government schemes for ecosystems services payments; and verifying environmental performance in the marketplace.

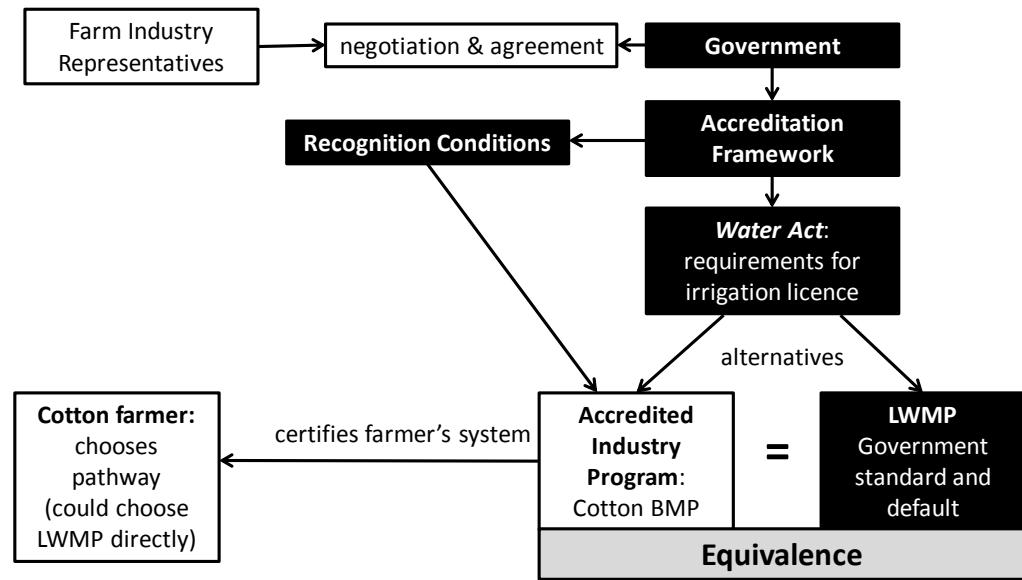


Figure 1.5: Cotton BMP equivalence to a statutory LWMP

1.4.4. The State Enlists Informal Regulators

In the RSPCA’s case, the state allows the RSPCA to take on a prosecutorial role in criminal law. In other cases, the state creates opportunities, not through criminal law but through civil law or other channels such as adverse publicity in the press.

In the finance and securities sector, stock exchanges are regulated bodies, licensed under regulations, and their internal rules and procedures must accord with regulation. However, regulators in most developed countries are empowered to delegate regulatory functions to the exchange, resulting in a high degree of self-regulation in areas of setting and enforcing trading rules, preventing market abuses, establishing rules governing the conduct of members, and monitoring compliance.¹⁵² Institutional structures open the governance arena to surrogate regulators. Civil actors are

¹⁵¹ Neil Byron et al, ‘A Review of Biodiversity Legislation in NSW’ (Final Report of Independent Biodiversity Legislation Review Panel for NSW Government Office of Environment and Heritage, 2014).

¹⁵² R Aggarwal, ‘Demutualization and Corporate Governance of Stock Exchanges’ (2002) *Journal of Applied Corporate Finance* 15.

empowered by legal standing to bring legal actions against corporations and their directors, and disclosure rules allow public scrutiny via the media. Exchanges operate in a co-regulatory space where government and private actors share governance responsibilities: ‘The effect is to create a web of responsibilities that depend only in part upon the capacity of government to exercise supervision’.¹⁵³ Industry, as a whole, acquiesces, cognizant of the necessity to maintain credibility with the investing public.

When governments establish novel markets, they have a regulatory role in setting the boundaries and ground-rules in which the market is to operate, but then step back to play a supporting role on the periphery, allowing private actors to utilize the market. Examples here include quantity-based market-based instruments such as cap-and-trade schemes for pollutants, and carbon emissions trading schemes. Australian water resources governance transitioned to a market model allowing water trading. The trading model is collaborative in the sense that it creates opportunities for non-government surrogate regulators to become involved in the civil law sphere similar to stock exchanges.

1.4.5. ‘Government-less’ Arrangements

At the extreme end of the governance spectrum, government plays very little role in governance. These are outside the typical co-regulatory models described above. In some situations, the regulatory capacity of the state is absent or weak, as in the case of international forestry governance in the early 1990s. The Forest Stewardship Council, (FSC) emerged because regulation of environmentally ruinous forestry practices was non-existent at the international stage and weak in the countries targeted by FSC. Environmental NGOs and businesses eager to capitalize on environmental branding established a set of standards and a marketing strategy. Later, some governments came on board with stronger regulation at a national level, but until that time, civil society groups led by WWF became the surrogate defender of the public interest.¹⁵⁴

Other market-oriented arrangements without the involvement of special-interest NGOs have arisen in which environmental parameters can become market specifications, such as GlobalGAP. The global food supply chain is marked by

¹⁵³ Paul Martin and Neil Gunningham, ‘Leading Reform of Natural Resource Management Law: Core Principles.’ (2011) 28 *Environmental and Planning Law Journal* 137, 150.

¹⁵⁴ Midttun, above n 45; Nikoloyuk, Burns and de Man, above n 114.

increasing consolidation, with a relatively small number of larger multi-national operators in a strong position to devise non-government programs and enforce standards for a range of consumer-orientated parameters. GlobalGAP was developed by multi-national supermarket chains¹⁵⁵ and uses the facilities of governance maintained by states at national and supra-national levels, including the enforcement of contracts, trade practices, copyright and intellectual property, and international trade rules.

GlobalGAP is a private sector certification standard for agricultural products that operates globally, and is shown schematically in Figure 1.6. The standard covers all the farm inputs and activities until the product leaves the farm. It is a business-to-business label not targeted at end-consumers. Farms are subject to independent third party audits by accredited certifiers.¹⁵⁶

Like other forms of governance innovation, supply chain initiatives pose opportunities and risks for governance. Given the economic power of large retailers, they are in a position to impose conditions designed to protect themselves from reputational risks, some of which overlap with the public interest on animal welfare and environmental protection. However, the public interest is not the primary focus of supermarket chains. Large consolidated retailers are in a strong position to drive the price for farm produce downwards, which may be counter-productive to good environmental management on farms.

¹⁵⁵ Gunningham and Sinclair, above n 50.

¹⁵⁶ GlobalGAP, <http://www.globalgap.org/cms/front_content.php?idcat=2>.

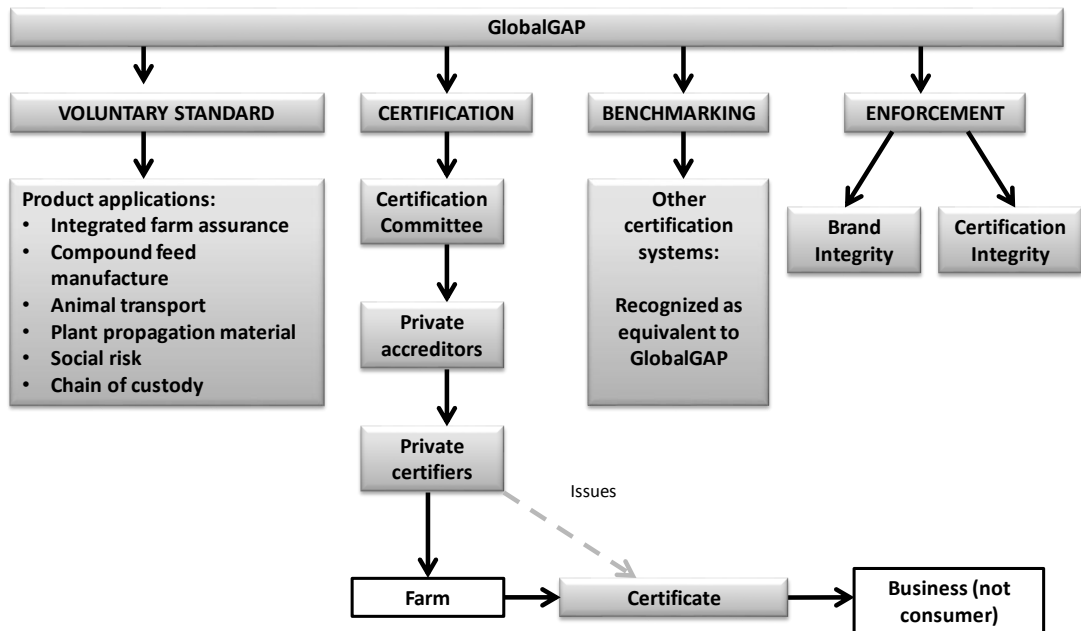


Figure 1.6: GlobalGAP

Farmers and domestic governments operate in an environment of large, powerful, globalized operators whose direct and indirect influence on the management of environmental risks on farms can be much more significant than any of the governance structures that a government imposes. In this sense, the standards developed and promulgated by global retailers assume less the character of ‘voluntary’ arrangements and more the character of mandatory quasi-legal requirements (albeit non-state orchestrated).¹⁵⁷

1.5. The Need for Empirical Evaluation

Collaborative governance is a relatively recent concept for influencing farm practices in rural Australia. There is a lack of empirical evidence for or against it as an alternative governance paradigm. Consequently, its practical efficacy may be underestimated – which would be disappointing given its promise, and the scale of environmental concerns in rural Australia; or over-hyped, which would prejudice the public interest in reliable governance. Four arguments are outlined below for empirical evaluation of collaborative governance.

¹⁵⁷ Lockie and Higgins, above n 110; Lyndal-Joy Thompson and Stewart Lockie, ‘Private Standards, Grower Networks, and Power in a Food Supply System’ (2012) *Agriculture and Human Values*.

1.5.1. Collaborative Governance Experiments are Already Underway

Collaborative governance is being trialled in programs in rural Australia, through regional natural resource management and co-regulatory frameworks that co-opt VSPs for farmers. However, commentators have questioned whether this is occurring with an adequate understanding of the implications. A wide ranging 2009 review implies that natural resource management in Australia is underpinned by an assumption – regarded by policymakers as self-evident – that community participation and collaboration are the most suitable approaches to problems involving intense conflict or jurisdictional complexity. The review challenges the lack of critical analysis of this assumption:

Curiously the re-scaling of natural resource planning in Australia has not widely been the subject of academic examination or interrogation.¹⁵⁸

Marshall notes that the tendency of governments to commandeer, sponsor and uncritically apply local, non-government, ‘community’ versions of governance to regional and national scales,

has run well ahead of research into how it might work. It is hardly surprising then that successes in larger-scale community-based environmental management remain few and far between.¹⁵⁹

In addition to existing collaborative arrangements, there is an increasing array of voluntary programs with an environmental focus potentially waiting in the wings. International food industry publications have reported that there are over 500 symbols and logos for foodstuffs with claims to sustainability.¹⁶⁰ Potts and colleagues note there are over 400 ‘consumer-facing eco-labels’ around the world.¹⁶¹ This increase in schemes does not automatically lead to consumer clarity, nor enhance credibility about

¹⁵⁸ Marcus Lane, Bruce Taylor and Cathy Robinson, 'Introduction' in Marcus B Lane, Cathy Robinson and Bruce Taylor (eds), *Contested Country: Local and Regional Natural Resources Management in Australia* (CSIRO Publishing, 2009) 1, 1.

¹⁵⁹ Marshall, above n 108, 76.

¹⁶⁰ Nathan Gray, 'Smart Barcodes' to Replace Eco Labels as Consumers Become More Information Savvy FoodNavigator.com <<http://www.foodnavigator.com/Financial-Industry/Smart-barcodes-to-replace-eco-labels-as-consumers-become-more-information-savvy>>; Rowland, above n 121.

¹⁶¹ Jason Potts et al, 'The State of Sustainability Initiatives Review 2014 - Standards and the Green Economy' (IISD & IIED, 2014).

sustainability claims. Indeed, it could be a source of confusion and an opportunity for deception.¹⁶²

1.5.2. The Benefits (and Disadvantages) are Mostly Untested in Rural Australia

Arguably collaborative governance would represent a major contribution to protecting the public interest should the promise of collaboration materialize. A brief survey of the some of the benefits is provided below but as yet the promise remains mostly theoretical or untested in the peculiar contexts of rural natural resources in Australia outlined earlier in this chapter.

Some of the theoretical benefits are responses to the inadequacies of the traditional ends of the governance spectrum; that is, regulation and voluntarism. Cave et al suggest co-regulatory arrangements could engender greater commitment and buy-in by private stakeholders, reduce transaction costs to government and business by removing the regulatory deadweight to industry or the economy as a whole, and enhance flexibility and adaptability. Better use of industry knowledge and expertise is especially important where the industry's members know more about the problems and potential solutions than regulators.¹⁶³

Given the regime of private property rights in Australia, Gunningham and Sinclair note that non-farmers are limited in their ability to force farmers to change practices on their landholdings. Environmental partnerships could be a means to engage with private property holders. Collaboration offers the potential for faster implementation of environmental objectives, lower transaction costs, and reduced resistance to implementation than regulation or litigation. In these authors' view, the very fact of participation tends 'to improve the equity inherent in problem resolution'. Strict regulation may distribute costs and benefits in ways the affected parties regard as inequitable. Collaborative arrangements 'can accelerate both the debate over equity issues and the implementation of good solutions.'¹⁶⁴

¹⁶² Rick Harbaugh, John W Maxwell and Beatrice Roussillon, 'Label Confusion: The Groucho Effect of Uncertain Standards' (2011) *Management Science* 1; Rachel Clemons and Angela Cartwright, 'What does "Free Range" Really Mean, and Are Consumers Being Misled?', *Choice* (2014) ACA <<https://www.choice.com.au/food-and-drink/meat-fish-and-eggs/eggs/articles/free-range-eggs>>.

¹⁶³ Cave, Marsden and Simmons, above n 35. See also Osofsky, above n 91.

¹⁶⁴ Gunningham and Sinclair, above n 50.

Böhringer and Frondel suggest that one of the problems of purely voluntary commitments is that they often represent no more than the status quo and ‘it would be extremely difficult for politicians or any other outsider to decide whether actual environmental performance differs from business-as-usual’. In their view, governance mechanisms formed by an ‘intensive mutual negotiation between regulators and participants’ would move a company’s environmental commitments beyond business-as-usual.¹⁶⁵

Co-regulatory arrangements making use of VSPs could act as a bridge between farm management and natural resource governance, because one of the challenges of legislation is operationalizing legislative objectives into business practice:

Inadvertent non-compliance could be averted if legal requirements are translated into the language of farm management practices that can be discussed and progressively implemented with the assistance of industry extension officers and farming peers.¹⁶⁶

The *disadvantages* of collaborative and hybrid measures are also canvassed in the literature. Nikoloyuk et al, and De Man and Burns observe that the founding of collaborative governance arrangements usually depends on powerful players, who themselves look for other powerful players in the supply chain. This is partly a response to the transaction costs of dealing with many small players but in theory would tend to marginalize them.¹⁶⁷ Reduction of transaction costs has been cited as a potential advantage of co-regulation, but collaborative models entail their own costs:

At the very least, each additional partner will increase the transactions costs and complexity of the partnership, and also the risk of disharmony and the breakdown of the entire arrangement.¹⁶⁸

¹⁶⁵ Böhringer and Frondel, above n 98.

¹⁶⁶ Toni Darbas et al, 'Co-regulation and Cotton: Governance of Natural Resource Management in the Australian Cotton Industry' (2008) 12(2) *Australasian Journal of Natural Resources Law and Policy* 87.

¹⁶⁷ Nikoloyuk, Burns and de Man, above n 114; Reinier de Man and Tom R Burns, 'Sustainability: Supply Chains, Partner Linkages, and New Forms of Self-regulation' (2006) 25(1) *Human System Management* 1.

¹⁶⁸ Gunningham and Sinclair, above n 50.

Gunningham and Sinclair note that environmental partnerships could have the effect of delegitimizing real conflicts and dampening necessary debates. There is a risk of regulatory capture and ‘regulation by wet lettuce’ where the co-operative nature of the interactions between regulator and regulated leads to a dilution or even dereliction of the public interest. The temptation to corruption is accentuated in these circumstances.¹⁶⁹

As with the benefits of collaborative governance, these disadvantages are mostly theoretical or untested in Australian contexts. It would be a pity if experimentation with otherwise beneficial modes of collaboration were stymied on the basis of untested assumptions about their risks.

1.5.3. Enabling Contexts Mostly Absent

The literature – both theoretical and empirical – provides guidance on the circumstances in which voluntary and collaborative forms of governance are likely to succeed. These contexts are summarized in Table 1.3 and discussed below. Contexts favouring voluntary measures are included here on the assumption that these circumstances will favour co-regulatory arrangements in which VSPs are co-opted.

Table 1.3: Contexts favouring voluntary and co-regulatory approaches

REGULATORY CONTEXTS	DRIVERS FOR COLLECTIVE ACTION
<ul style="list-style-type: none"> • Shadow of the law. • Arguments for mandatory programs are unclear or lacking support, or implementation will be time-consuming. • Subsidies for environmental protection. • Lower abatement costs compared with other options. • Locally important issue, easy to monitor. 	<ul style="list-style-type: none"> • Community of shared fate. • Peer pressure. • Collective need for public credibility. • Tradition of consensus seeking and joint problem solving.

¹⁶⁹ Ibid; Neil Gunningham, ‘Cotton, Health and Environment: A Case Study of Self-Regulation’ (Working Paper 29, National Research Centre for Occupational Health and Safety Regulation, 2004) 26.

CHARACTERISTICS OF THE FIRM	MARKET CONTEXTS
<ul style="list-style-type: none"> • Top level brands, high reputational risk • Large, ‘dirty’ firms dealing with environmentally sensitive areas or products. • Members of industry-wide associations. • Closeness to end consumer. 	<ul style="list-style-type: none"> • Potential for market successes from collaboration. • Products can be differentiated on environmental grounds. • Wealthy regions, wealthy customers, or willingness of consumers to pay.

(Sources: Nikoloyuk, Burns and de Man, 2010; Morgenstern and Pizer, 2007b; Khanna and Damon, 1999; de Clercq and Suck, 2002; Alberini and Segerson, 2002; Gunningham and Sinclair, 2002; Paton, 2000; Midttun, 2008; Darbas et al, 2008; Cave, Marsden and Simmons, 2008; Stoeckl, 2004; Lenox and Nash, 2003.)

1.5.3.1. Regulatory Contexts

Commentators note that voluntary programs and co-regulation work best where the possibility of intervention by the government lurks in the background.¹⁷⁰ For some, this ‘stick behind the door’ or ‘shadow of the law’ is not merely a desirable attribute of a given situation – it is a necessary pre-condition for success.¹⁷¹ The shadow of the law could be the threat of *new* regulation, and firms participate in the program on the expectation that it will forestall the enactment of stricter regulation. Alternatively, there is the strict application of *existing* regulations, for example where a regulatory system is already established, but provides for exemptions or other statutory concessions for participants in the program. The latter is said to provide more credibility than the first and also helps deal with the free-rider problem (non-participants would automatically be subjected to the intervention). However, it is also said to entail higher transaction costs.¹⁷²

Morgenstern and Pizer note other contexts conducive to partnerships in governance include situations where regulators are willing to subsidize environmental protection, where a voluntary regime leads to lower abatement costs than command-and-control regulation alone, or ‘when the arguments for mandatory programs are unclear or

¹⁷⁰ M Khanna and L Damon, 'EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic performance of Firms' (1999) 37(1) *Journal of Environmental Economics and Management* 1 ; Sharma, above n 49; Paton, above n 36; Alberini and Segerson, above n 36; Gunningham and Sinclair, above n 50; Morgenstern and Pizer (2007a), above n 97.

¹⁷¹ de Clercq and Suck, above n 49.

¹⁷² Alberini and Segerson, above n 36.

lacking legal or political support or where such programs will take considerable time to implement, voluntary efforts can play an important role'.¹⁷³

Co-regulatory and voluntary programs tend to be more successful where the issue that the program seeks to address is locally important and easy to monitor.¹⁷⁴ This bodes better for programs dealing with, say, local toxic emissions, than those dealing with greenhouse gas emissions because of the degree of localness and immediacy of the issues. Issues that 'transcend the boundaries of the local community or the current generation and require performance that is difficult to monitor at an individual level' are predictably more challenging for partnered governance to deal with.¹⁷⁵

1.5.3.2. Drivers for Collective Action

The likelihood of collaborative and partnered forms of environmental governance succeeding is said to increase where members of a group (e.g. an industry or sector) share a mutual interest in environmental protection and mutual detriment in environmental damage.¹⁷⁶ Partnered governance in these cases harnesses the common interest of participants to maintain a good reputation.¹⁷⁷ Similarly, partnered governance is said to work best where there is a pre-existing tradition of consensus seeking and problem-solving amongst the actors.¹⁷⁸ Gunningham and Sinclair observed these drivers for collective action in the Australian rice industry, due to its vertical integration and co-operative business structure. This encouraged timely information exchange with farmers on management issues such as herbicide usage, and a sense of a 'community of shared fate' that allowed peer pressure to operate on potentially irresponsible growers.¹⁷⁹

¹⁷³ Richard D Morgenstern and William A Pizer, 'Concluding Observations: What Can We Learn from the Case Studies' in Richard D Morgenstern and William A Pizer (eds), *Reality Check – The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007b).

¹⁷⁴ Gunningham and Sinclair, above n 50; Morgenstern and Pizer (2007b), above n 173.

¹⁷⁵ Gunningham and Sinclair, above n 50.

¹⁷⁶ Darbas et al, above n 166.

¹⁷⁷ Cave, Marsden and Simmons, above n 35.

¹⁷⁸ de Clercq and Suck, above n 49.

¹⁷⁹ Gunningham and Sinclair, above n 50.

1.5.3.3. Characteristics of the Firms Involved and Market Contexts

Stoeckl has identified a number of types of firms and markets for whom participation in voluntary programs is likely to be attractive:¹⁸⁰

- *Large firms*: These have economies of scale, a high risk of private litigation, and may find themselves watched more closely by interest groups.¹⁸¹
- *'Dirty' firms*: These are likely to have relatively small marginal abatement costs, and a high risk of private litigation. Firms in sectors or industries that are more polluting may feel greater pressure to participate in programs.¹⁸²
- *Firms capable of differentiating products on environmental grounds*: These are likely to see relatively large demand-side effects. A key factor for successful governance partnerships is said to be the potential for market successes.¹⁸³ Firms nearer the end of the supply chain in closer contact with end-consumers are more likely to participate in voluntary programs.¹⁸⁴
- *Firms operating in wealthy regions, or in environmentally sensitive areas, or dealing with environmentally sensitive products*: These are likely to have a high risk of private litigation. Environmental and social NGOs deliberately target top-level brands knowing they are sensitive to brand reputation and public dissatisfaction.¹⁸⁵
- *Firms selling to affluent consumers*: These are also likely to have a higher risk of private litigation and to see relatively large demand-side effects. Partnered governance is said to be enhanced by the willingness of consumers to pay for environmentally focused products.¹⁸⁶ This reflects Gunningham

¹⁸⁰ Natalie Stoeckl, 'The Private Costs and Benefits of Environmental Self-Regulation: Which Firms Have Most to Gain?' (2004) 13 *Business Strategy and the Environment* 135.

¹⁸¹ Michael J Lenox and Jennifer Nash, 'Industry Self-regulation and Adverse Selection: A Comparison Across Four Trade Association Programs' (2003) 12 *Business Strategy and the Environment* 343.

¹⁸² *Ibid.*

¹⁸³ de Clercq and Suck, above n 49.

¹⁸⁴ Khanna, above n 132.

¹⁸⁵ Nikoloyuk, Burns and de Man, above n 114; Lenox and Nash, above n 161; Midttun, above n 45.

¹⁸⁶ Morgenstern and Pizer (2007a), above n 97.

and Sinclair's observations of the Australian wine industry: consumers tend to be wealthier and more discriminating.¹⁸⁷

- *Firms that are members of industry-wide associations:* These may be able to (collectively) design environmental programs that forestall government-imposed regulations.

1.5.3.4. Absence of Many of these Contextual Factors

Many of the contexts above are absent or weak in Australian farming. The co-operative spirit of the rice industry may be the exception to the rule for most farmers in Australia. The rugged-individualist streak in many Australian farmers may inhibit their ability to bargain collectively. For some contentious issues, the fractiousness of debate between farming communities and government does not support consensus seeking. The wealth of the customer base for the wine industry is also unusual in Australian farming, and the ability of most farmers to differentiate their produce, especially in commodity markets, is limited. Farmers in export markets are not close to end-consumers. Most farmers are not large companies selling top-level brands. Issues such as climate change and threatened species conservation may or may not be locally important to farmers and it is not easy for them to monitor the effects of their practices on these issues.

This is not to say collaborative governance will inevitably fail, but it does point to the need for ongoing empirical validation, as well as strategies to compensate for the absence of important context factors. If adequate incentives for participation – positive or negative – do not inherently emerge in a situation, then they may need to be engineered into collaborative arrangements.¹⁸⁸

1.5.4. Enterprise Scale and Structure in Rural Australia

Most of the empirical work cited in this chapter on the efficacy of collaborative arrangements focuses on large industrial firms with corporate organizational structures. In corporations, decision-making is disjointed among the functions of decision-making – investment, strategic, managerial, and implementation – and among the layers of decision-makers – shareholders, boards, senior executives, and general staff. Decision-making is dominated by a rationalist imperative to maximize profits

¹⁸⁷ Gunningham and Sinclair, above n 50.

¹⁸⁸ Morgenstern and Pizer (2007b), above n 173.

and shareholder value, and decision-making loci may be far removed from any environmental impacts.

If the trend of increasing corporatization of Australian agriculture continues,¹⁸⁹ governance may need to be better informed by research pertaining to large-scale enterprises and corporate structures. But, for now, most Australian farmers are natural persons situated on family farms operated by family members who live and work there.¹⁹⁰

These businesses have a relatively horizontal decision-making structure: the board, senior executives, frontline staff, and shareholders are one and the same, often comprising a small family team, such as husband and wife, or parents and adult children. Family farms are unique in the business world in the sheer amount of natural resources they are responsible for – much larger than almost any other business of comparable financial turnover or staff numbers.

Some farm businesses are managed by corporate managers remote from the business's farmland, but most are place-based businesses operated by people who belong to small communities located near their farmland. It is relevant to consider whether family farmers in small communities are especially amenable to pro-social influences that moderate self-interest.

Thus, rural landholders often straddle a number of paradigmatic spheres, as Baldwin notes, juxtaposing 'a usually competitive business or corporate life with a more cooperative community life'; they must be rationally self-interested to ensure they remain financially viable, but they must also act in neighbourly ways as members of small communities:

In general, farmers and their families live in the same place as their business. Their lifestyle is integrated with their work and surrounding environment. They

¹⁸⁹ Hicks et al, above n 21.

¹⁹⁰ Ibid.

are also part of a neighbourhood and community, often quite small in population, where individuals play an important role in supporting community well-being.¹⁹¹

This influence of small community life on farmers is noted in Australian Bureau of Statistics figures on rates of volunteering: people in farming families are more than twice as likely as those in other families to undertake voluntary work for an organisation or group.¹⁹² This connection with local communities could be one of the socializing forces that drive landholders to internalize the social norms of the community and act out other-regarding behaviours. The mechanisms by which a collaborative governance regime affects the behaviour of family farmers could be different from mechanisms by which such a regime affects the conduct of large corporations.

1.6. Conclusion

This study argues that for Australia to pursue the development of collaborative governance, there needs to be more emphasis on empirical evaluation of collaboration in action, as well as evaluation of the parts that are merged in the collaboration. For example, which governance parties are suitable partners and in what contexts? Which instruments and processes of governance (public and private) are amenable to complementary combinations and in which contexts?

Without such assessments, it will be difficult for the parties with a stake in the good management of rural natural resources – including farmers, NGOs, environmentalists, governments, agricultural supply chain businesses, and concerned citizens – to make informed judgements about collaborative governance, including whether to support or join collaborative governance arrangements.

The next chapter develops a conceptual framework for the empirical investigation of VSPs as components of collaborative governance arrangements.

¹⁹¹ Claudia Baldwin, 'Understanding the Social Obligations of Farmers' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO, 2011) 13, 13.

¹⁹² Australian Bureau of Statistics, above n 17.

CHAPTER 2: CONCEPTUAL FRAMEWORK FOR EVALUATION OF VSPS

2.1. Introduction

Having made a claim for the need for greater empirical evaluation of collaborative governance in rural Australia, the remainder of this thesis describes a strategy for such an evaluation. Given resource constraints, the study's scope is limited to the following considerations:

- Natural resource management and collaborative governance in rural Australia;
- Farmers as the primary land managers on their farms;
- Other external stakeholders in a position to potentially influence farmers' practices on farms; and
- VSPs for farmers, their proponent organizations and their participating farmers, as potential partners with other instruments, institutions, non-government and government parties in co-regulatory arrangements.

The focus on the potential of VSPs in co-regulatory regimes is justified for two reasons. Firstly, it is an interesting model in its own right, as in the case of the Green Dot example, in which a VSP was formed for the purpose of co-regulation. Secondly, co-regulatory regimes co-opting VSPs are being trialled in rural Australia under Queensland's *Accreditation Framework for FMS Programs*. In this case, the VSP (Cotton BMP) pre-dated the collaborative arrangement.

This study is based on a conceptual framework that hypothesizes the elements required for success. Robson defines a 'conceptual framework' as a '[t]he theory about what is going on, what is happening and why, particularly when expressed in diagrammatic form'.¹⁹³ Yin suggests 'theory' does not need to be a grand theory of the social sciences, but it does need to constitute a blueprint or 'a story about why acts, events, structures, and thoughts occur.'¹⁹⁴ The conceptual framework outlined here is based on insights from the academic literature, discussions with colleagues and stakeholders, and the researcher's experience of working with farmers on natural resource issues.

¹⁹³ Colin Robson, *Real World Research* (Blackwell, 2nd ed, 2002) 63.

¹⁹⁴ Robert K Yin, *Case Study Research - Design and Methods*, Applied Social Research Methods Series (SAGE, 4th ed, 2009) 36.

The framework is an idealized model of how a VSP would operate in collaboration with participating farmers and other stakeholders to conserve or improve the condition of natural resources affected by farming practices, both on- and off-farm, similar to the model being trialled in Queensland's *Accreditation Framework for FMS Programs*. The framework revolves around a social contract, comprising a reciprocal exchange of benefits between farmers and non-farmers. It is used to address this overarching research question:

Can farmers' participation in VSPs contribute to collaborative natural resource governance in rural Australia?

The types of considerations relevant in its development include:

- What are the core public interest objectives of collaborative natural resource governance?
- What conditions or prerequisites would a collaborative governance arrangement incorporating a VSP need to meet to achieve the core objectives?
- What attributes of VSPs and participating farmers would make them 'good' partners in a collaborative governance arrangement?
- What would potential governance partners expect from a VSP and farmers participating in it?
- What would participant farmers expect from potential governance partners?

The framework is shown in Figure 2.1. Each numbered item in the figure is an element of the framework. The elements are hypothesized conditions or prerequisites for the successful operation of the idealized model. It is hypothesized that all elements must be present before participating farmers would be in a position to improve or maintain natural resource conditions on a sustained basis, and before non-farmers would be willing to transfer benefits to farmers over the long term. If an element is absent, it is hypothesized that the social contract will fail and improvement and maintenance of natural resource conditions and the transfer of benefits over the long term will not occur.

It is hypothesized that VSPs that help achieve the framework's elements make a valuable contribution to effective rural natural resource management and governance, and would thus be suitable instruments to use in broader collaborative governance or

co-regulatory arrangements. Similarly, farmers who participate in such a VSP and/or the organizations that manage it would likewise be suitable partners in a collaborative governance arrangement with other government and non-government stakeholders.

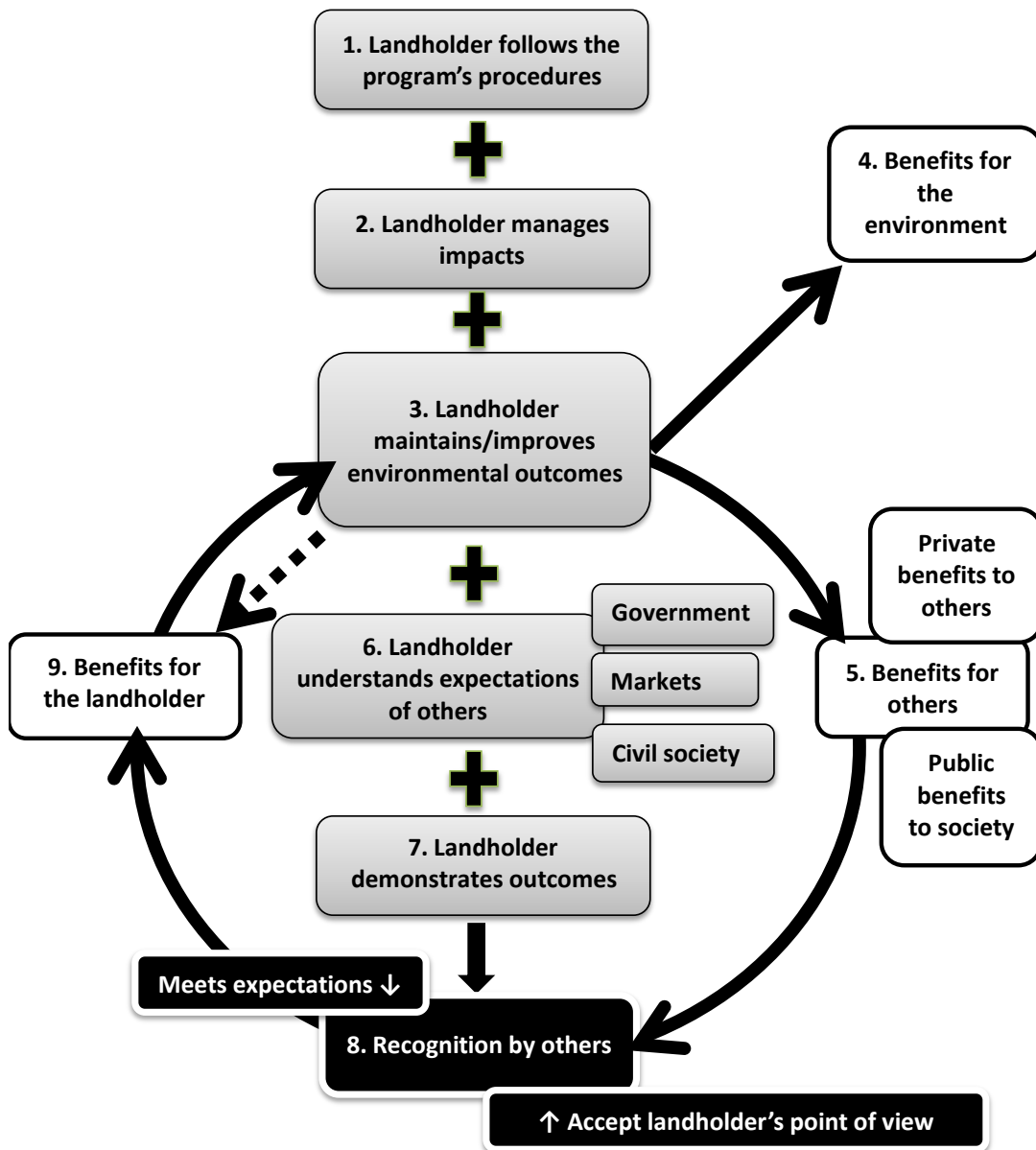
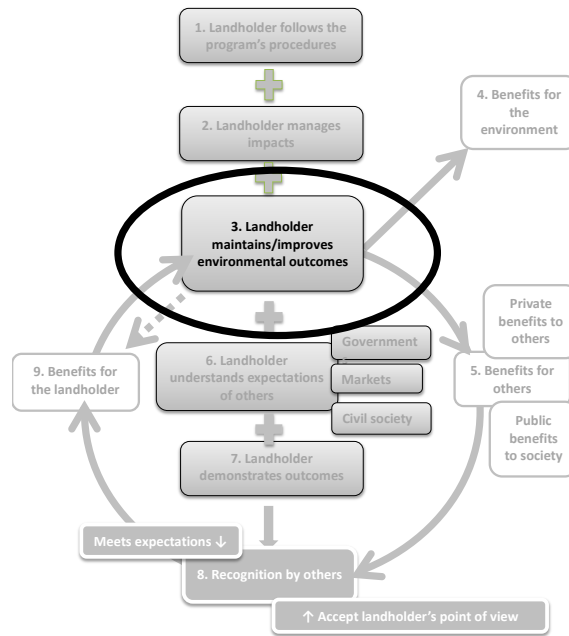


Figure 2.1: Conceptual framework

The remainder of the chapter discusses the elements of the conceptual framework, but not in the order they appear in the figure. The explanation starts at the core of the framework – the achievement of public interest outcomes – represented by Element 3 in Figure 2.1, and works outwards in the different directions shown in the figure. At the end of the discussion of each element, questions relevant to the empirical

evaluation of the element are posed; these form the research questions for the study, and are consolidated at the end of this chapter.

2.2. Achieving Environmental Outcomes – Element 3



The central tenet of the framework is a social contract between farmers and non-farmers, in which farmers achieve important public interest outcomes – such as environmental outcomes – and, in exchange, are provided with moral and material support by non-farmers.

The crux of sustainable natural resource management and governance is the maintenance of the ecological, social and productive capacities of natural resources and the integrity of environmental processes on which humans depend. This is both descriptive and normative. It describes the reality of human reliance on the environment and is an ethical position about the conservation of resources. The stewardship ethic assumes that the integrity of the biophysical world – its animals, plants, other biota, soils, air, water, processes, cycles, and eco-systems – is essential to human existence, economy and wellbeing. In addition to the instrumental value of the environment to humans, a wider formulation of the ethic includes the wellbeing of other creatures and landforms for their own sakes.¹⁹⁵

¹⁹⁵ Arne Næss, 'The Shallow and the Deep, Long-Range Ecology Movement' (1973) 16 *Inquiry* 95.

Maintaining the ecological, social and productive capacities of natural resources and the integrity of environmental processes on which we depend is a necessary condition for the success of natural resource management and governance. It is the objective of governance – it is what we hope farmers achieve in the management of natural resources. To contribute to natural resource governance means to positively influence farmer behaviours towards this outcome. Where the condition of natural resources is already good, then the desired outcome is the maintenance of that condition. Where the condition is degraded, then the desired outcome is improvement in condition.

This study focuses on natural resources and environment as the key public interest of concern in the study, but co-regulation could apply to many other interests.

Weintraub describes the ‘public’ as that which is ‘collective, or affects the interests of a collectivity of individuals’.¹⁹⁶ He distinguishes four uses of the term ‘public’, one of which accords with this study: ‘the republican-virtue (and classical) approach, which sees the ‘public’ realm in terms of political community and citizenship.’¹⁹⁷

Animal welfare is regarded as a public interest issue: ‘a benefit that government has a responsibility to ensure’,¹⁹⁸ though whether it falls in the economists’ strict definition of ‘public good’ as ‘non-excludable’ is contested.¹⁹⁹ Although environmental and natural resource issues have been selected as the primary public concern for investigation in this study, animal welfare is also considered for two reasons. Firstly, farmers are producers of multiple products and must be attuned to multiple public concerns. These concerns are interrelated: environmental concerns of farmers, especially livestock producers, are entangled with animal welfare, even though each may be a separate issue in public discourse. Including animal welfare in the evaluation enabled the study to examine how VSPs and farmer participants handle combinations of (potentially conflicting) public interest values.

¹⁹⁶ Weintraub, above n 37, 5.

¹⁹⁷ Ibid 7.

¹⁹⁸ Szilvia Vetter, László Vasa and László Ózsvári, 'Economic Aspects of Animal Welfare' (2014) 11(7) *Acta Polytechnica Hungarica*, 212.

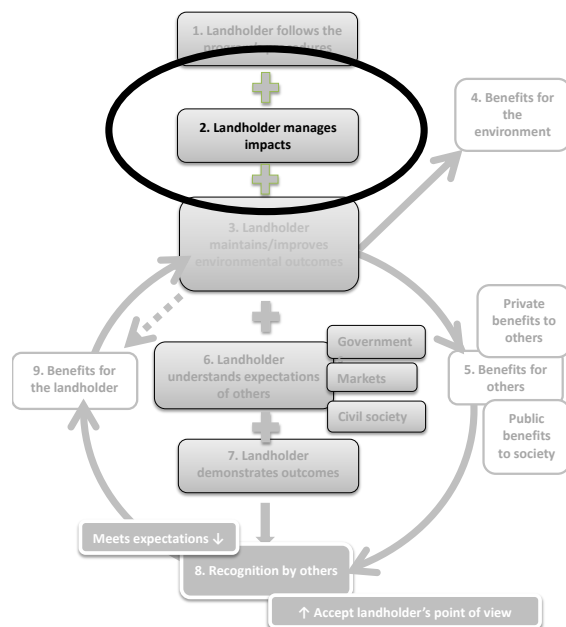
¹⁹⁹ Stefan Mann, 'Ethological Farm Programs and the “Market” for Animal Welfare' (2005) 18 *Journal of Agricultural and Environmental Ethics* 369, 371.

Secondly, animal welfare concerns may act as a bellwether for collaborative governance of other social and ethical issues, including environment. Some of the co-regulatory aspects of animal welfare governance were explored in the previous chapter. This study commenced a few months after the Indonesian abattoir incident,²⁰⁰ the response to which revealed that animal cruelty produces an immediate reaction from consumers and advocacy groups, resulting in political pressure on governments to act. An analysis of VSPs treatment of animal welfare concerns might provide insights into the politicized aspects of natural resource governance.

The conceptual framework moves this study from a broad consideration of VSPs generally to a consideration of how individual VSPs operate. The evaluation of individual VSPs provides the evidence for drawing inferences that answer, on the balance of probability, the overarching questions about VSPs generally. The key question arising out of this element for empirical investigation is:

Does the VSP help farmers achieve environmental and animal welfare outcomes?

2.3. Managing Impacts – Element 2



²⁰⁰ *Export Control (Export of Live-stock to the Republic of Indonesia) Order 2011* (Cth); Richard Willingham and Tom Allard, 'Ban on Live Cattle Trade to Indonesia', *Sydney Morning Herald* 8 June 2011 2011 <<http://www.smh.com.au/national/ban-on-live-cattle-trade-to-indonesia-20110607-1frdg.html>>.

Saying that we expect farmers to deliver environmental and animal welfare outcomes requires some deconstruction: What exactly do we expect farmers to do about the environment or animal welfare? What do we mean when we say we want farmers to ‘manage the environment’?

ALMG (the organization that manages CLM, one of the case studies) has stressed that the demand that farmers should ‘manage the environment’ is unwieldy. ‘The Environment’ is too abstract a concept for a resource-user to develop a sensible management regime. Instead, landholders manage those matters within their managerial sphere of influence.²⁰¹

The integrity of an important environmental outcome – one example being the long term viability of insectivorous woodland birds that ameliorate tree dieback²⁰² – may be beyond the ability of a landholder to secure. This outcome needs to be operationalized in a way that is meaningful for the landholder. Landholders cannot manage every facet of bird ecology nor every influence on bird populations; they can only manage the impacts of *their own* behaviours and practices. They can modify the impacts of their farming operations on woodland birds by avoiding clearing bird habitat, protecting or replanting habitat, or using habitat-sensitive grazing strategies. This focuses attention on behaviours within the landholder’s control. It does not *guarantee* the long-term viability of the birds; there may be many factors outside the landholder’s control that contribute to bird decline, such as global climate change or the practices of neighbouring landholders. However it does represent the crux of landholders’ ethical obligation: if landholders maintain good practices or modify damaging practices so that impacts on birds are negligible, then they are acting in accord with a stewardship ethic.

Natural resource management and environmental management are shorthand expressions used frequently in this study. Strictly speaking, however, farmers do not ‘manage’ natural resources or the environment; they do not ‘manage’ the small woodland birds that prevent tree dieback, any more than they ‘manage’ rivers that flow

²⁰¹ Tony Gleeson, 'Better Managing Our Environmental Impacts' (Paper prepared for Land Management Reference Panel, 2011).

²⁰² G W Barrett et al, 'Colonisation of Native Tree and Shrub Plantings by Woodland Birds in an Agricultural Landscape' (2008) 35 *Wildlife Research* 19.

through their farms, remnants of native vegetation, or any other natural resource occurring on their farms. They manage their farm practices, which affect these natural resources; that is, the practices that affect the viability of woodland bird populations, the health of the river ecosystems, the health of remnant vegetation, etc.

The question for empirical investigation of Element 2 is:

Does the VSP help farmers manage their impacts on the environment and animal welfare?

So crucial is the landholders' management of impacts to environmental integrity that this chapter delves into the nature of management by outlining two sub-elements. The first concerns the psychological processes of managing any new or difficult task, and is underpinned by Albert Bandura's approach to self-standards in his social cognitive theory. The second concerns the processes by which landholders direct their efforts towards adherence with stewardship norms, and is underpinned by Ryan and Deci's theory of the internalization of social norms: self-determination theory.

2.3.1. Developing Self-Standards

Bandura developed a holistic theory – social cognitive theory – to answer the question of how people manage their behaviours. He proposed that the character of any individual is defined by five basic capabilities:²⁰³ symbolizing capability enables humans to create mental models from their experiences and observations; forethought capability allows people to anticipate consequences and set goals; vicarious capability allows people to learn from others; self-reflective capability enables people to analyse experiences to refine their mental models; self-reflection connotes self-monitoring and self-observation; and self-regulatory capability, which allows us to regulate our own behaviour in order to progress towards our goals.

Bandura proposes that self-reflection has two important functions. One is a self-diagnostic function, by which people observe their behaviours, notice recurrent patterns and set in train corrective action.²⁰⁴ The other is a self-motivational function:

²⁰³ Albert Bandura, *Self-efficacy: The Exercise of Control* (Freeman and Company, 1997).

²⁰⁴ Albert Bandura, 'Social Cognitive Theory of Self-Regulation' (1991) 50 *Organizational Behavior and Human Decision Processes* 248, 250.

When people attend closely to their performances they are inclined to set themselves goals of progressive improvement, even though they are not encouraged to do so.²⁰⁵

The self-regulatory capability is underpinned by the concept of *self-efficacy*: individuals' belief that they can achieve goals, which strengthens the capacity to persist and achieve.²⁰⁶ Central to self-efficacy is a sense of control, meaning that through our actions, we believe we are able to influence outcomes that ensure progress towards our goals. If we do not perceive that we have control – for example, when we cannot attribute achievement to our own action or when we attribute failure to circumstances beyond our control – then our self-regulatory capability is weakened. The self-regulatory capability remains underdeveloped if we undertake behaviours merely because of external compulsion (e.g. regulation), or if we believe that we failed to achieve an important goal because we were forced to adopt unsuccessful behaviours.

In this study, the suite of capabilities and elements of Bandura's model – symbolizing, forethought, vicarious learning, self-reflection, self-regulation, self-efficacy, and a sense of control – are referred to by Bandura's shorthand expression 'self-standards'.²⁰⁷

Reframing the development of self-standards in terms of societal needs for rural natural resource management, society *needs* landholders who develop strong capabilities to:

- Anticipate consequences and set goals for land management;
- Learn from other landholders and environmental practitioners;
- Reflect on their own and others' experiences to refine their mental models of how they interact with the environment; and
- Self-regulate their behaviour.

Bandura predicts an additive effect of self-efficacy: it can be expected that landholders with a strong belief in their ability to achieve environment-related goals will invest

²⁰⁵ Ibid 252.

²⁰⁶ Bandura (1997), above n 203.

²⁰⁷ Albert Bandura, 'Toward an Agentic Theory of the Self' in Herbert Marsh, Rhonda G Craven and Dennis M McInerney (eds), *Self-Processes, Learning and Enabling Human Potential - Dynamic New Approaches* (Information Age Publishing, 2008) 15.

more time, effort and resources in pursuing those goals. The theory would also suggest that once achieved, landholders are amenable to setting more ambitious goals, are less anxious, and do not give up easily when adverse circumstances arise. Furthermore, the effects should be transposed to new areas of endeavour. This is important in the context of multi-purpose agriculture, where society comes back to farmers again and again with requests for new goals, additional practice changes, new expectations, and new types of farm ‘products’. The whole social cognitive process facilitates a virtuous cycle of confidence building and achievement, leading to more confidence and more achievement.

Bandura warns that self-efficacy should not be mistaken for self-esteem or individualism:²⁰⁸

People make causal contributions to their lives, but they are not the sole causes of their destinies. Numerous other influences – some social, some geographical, and some institutional – also contribute to the courses our lives take ... Within this multicausality, people can improve their lives by exercising some influence in areas over which they have some control.²⁰⁹

On the other hand, hopelessness is damaging to self-efficacy. Self-efficacy cannot make an individual achieve the impossible, but achieving even the possible is stymied without it:

Individuals who believe themselves to be inefficacious effect little change even in social systems that provide many potential opportunities ... Conversely, those who have a firm belief in their efficacy, through ingenuity and perseverance, figure out ways to exercise some measure of control over social systems containing limited opportunities and many constraints.²¹⁰

Again, reframing the development of self-standards in terms of public policy needs, we need *self-efficacious* landholders, who believe that they are capable of implementing effective land management goals, often involving novel and complex practices. We need landholders who are willing to aim for ambitious environmental

²⁰⁸ Bandura (1997), above n 203, 11, 32.

²⁰⁹ Ibid 33.

²¹⁰ Ibid 483.

goals and willing to invest considerable time and effort towards those goals, even in the face of setbacks. We need landholders who can observe their own behaviour and practices, and thereby evaluate achievement of goals. And we need them to feel the self-regulatory effects of success, so that they go on to set even more ambitious goals. We need landholders who are creative, innovative, entrepreneurial,²¹¹ and able to apply a problem-solving mentality in their approach to natural resources conundrums. Such attributes are valuable and beneficial to the public interest, though the metrics to measure such value is imperfect.

Importantly, Bandura notes that the various components of self-standards are not innate; they need to be practiced:

People do not come fully equipped with these agentic capabilities. They must develop them. Observational learning operates as a key mechanism in this process of self-development, adaptation, and change. Through the power of modeling, people acquire lifestyles, values, self-regulatory standards, aspirations, and a sense of personal and collective efficacy.²¹²

In this regard, the key question for empirical evaluation of VSPs becomes:

Does the VSP help farmers develop self-standards?

In particular, do VSPs help farmers self-reflect, self-regulate, build self-efficacy and harness a sense of control?

2.3.2. Internalizing Stewardship Norms

Psychological theories have described the motivational profile of an individual along a continuum of motivations from extrinsic to intrinsic. Whether people are self-motivated to act out social norms depends on the extent to which those norms are psychologically internalized. Ryan and Deci have developed a framework for analysing motivation and social norms called self-determination theory,²¹³ a relevant sub-theory of which is represented in Figure 2.2. The authors divide extrinsic

²¹¹ Karen Argabright, Jerry McGuire and Jeff King, 'Extension Through a New Lens: Creativity and Innovation Now and for the Future' (2012) 50(2) *Journal of Extension* 1.

²¹² Albert Bandura, 'On the Psychosocial Impact and Mechanisms of Spiritual Modeling' (2003) 13(3) *The International Journal for the Psychology of Religion* 167, 169.

²¹³ Richard M Ryan and Edward L Deci, 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being' (2000b) 55(1) *American Psychologist* 68.

motivation into four broad zones, each one representing a greater degree of internalization as the schema moves towards intrinsic motivation. They are careful to point out the continuum does not represent a trajectory for motivational development in an individual, ‘in the sense that people must progress through each stage of internalization with respect to a particular regulation’.²¹⁴ The main features of the model will be described below, except for amotivation, which is not relevant to this discussion.

This study does not assume that the regulatory continuum outlined in Chapter 1 (showing collaborative governance in the middle ground) aligns or mimics Ryan and Deci’s behavioural continuum – there are commonalities and probable relationships but the two continua are referring to overlapping interdisciplinary interests rather than describing the same thing.

²¹⁴ Ibid 73.

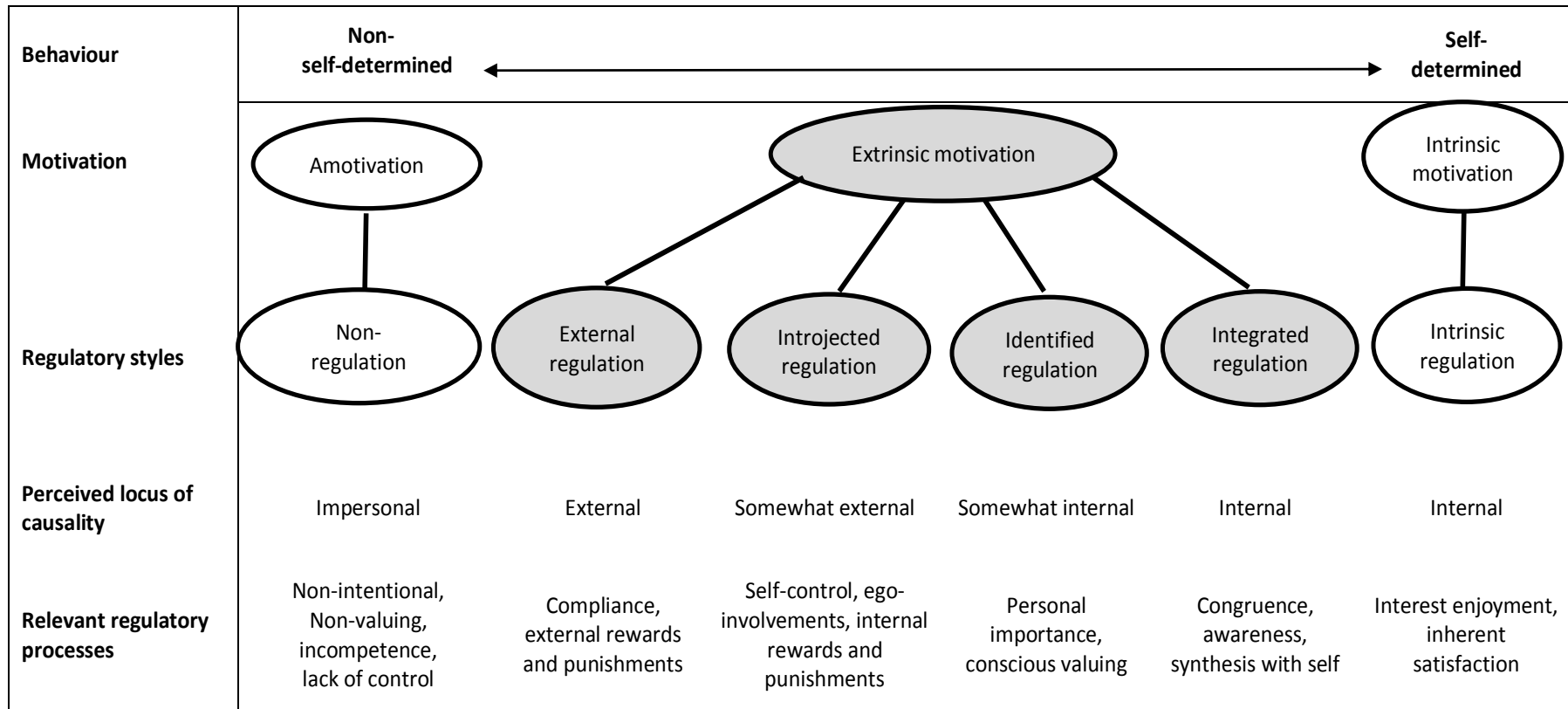


Figure 2.2: Continuum of motivation
 (Adapted from Ryan and Deci, 2000b, 72)

Intrinsically motivated behaviours are wholly self-regulated, and individuals engage in such behaviours out of interest or enjoyment due to the ‘novelty, challenge, or aesthetic value’ of the behaviour.²¹⁵ According to self-determination theory, intrinsically motivated behaviours reflect a high degree of ‘autonomy’ in the individual:

[A] person is autonomous when his or her behaviour is experienced as willingly enacted and when he or she fully endorses the actions in which he or she is engaged and/or the values expressed by them.²¹⁶

Intrinsic motivations are said to be associated with self-perceived competence and positive coping strategies,²¹⁷ and can be enhanced by choice and the opportunity for self-direction.²¹⁸

Most of life’s activities are not performed through intrinsic motivation.²¹⁹ Most activities – including the activities that external stakeholders expect farmers to perform – are not of themselves inherently interesting and enjoyable. They are motivated by some goal separable from inherent enjoyment.²²⁰ However, this does not mean that external obligations are performed unwillingly, nor does conformity with external rules mean a lack of autonomy:

[O]ne can willingly follow an external influence or even an order provided one fully consents to, concurs with, or identifies with that influence. Thus, if one believes in the value of traffic laws, one can experience following the command of a traffic cop as highly autonomous.²²¹

²¹⁵ Ryan and Deci (2000a), above n 64, 60.

²¹⁶ V Chirkov et al, 'Differentiating Autonomy From Individualism and Independence: A Self-Determination Theory Perspective on Internalization of Cultural Orientations and Well-Being' (2003) 84 *Journal of Personality and Social Psychology* 97, 98.

²¹⁷ Ryan and Deci (2000a), above n 64, 63.

²¹⁸ *Ibid* 63.

²¹⁹ *Ibid* 60.

²²⁰ *Ibid*.

²²¹ Chirkov et al, above n 216, 98.

To account for this propensity, self-determination theory proposes that extrinsic motivations can be graded across a spectrum from those that are wholly external to those that are internalized and integrated:

Internalization is the process of taking in a value or regulation, and integration is the process by which individuals more fully transform the regulation into their own so that it will emanate from their sense of self ... Thought of as a continuum, the concept of internalization describes how one's motivation for behavior can range from amotivation or unwillingness, to passive compliance, to active personal commitment.²²²

Wholly intrinsic motivations are already 'internal' and do not require internalization before they regulate behaviour.²²³ The four regulatory zones of extrinsic motivation are as follows:²²⁴

- (1) **External regulation** – refers to extrinsically motivated behaviours that are performed 'only to obtain external rewards or to escape punishment or reward loss'.²²⁵ Such behaviours are the least autonomous on the extrinsic motivation spectrum, and individuals perceive the cause of the behaviour as externally located.
- (2) **Introjected regulation** – refers to extrinsically motivated behaviours that are 'performed to avoid guilt or anxiety or to attain ego enhancements such as pride'.²²⁶ In this zone, individuals aim to 'demonstrate ability (or avoid failure) in order to maintain feelings of worth'.²²⁷ Introjection is internally driven but relatively controlled, and the individual still perceives the cause of behaviours to be external.
- (3) **Identified regulation** – refers to behaviours that are externally motivated but are more autonomous and self-determined, involving 'a conscious valuing of a

²²² Ryan and Deci (2000a), above n 64, 60.

²²³ Chirkov et al, above n 216, 99.

²²⁴ See generally Ryan and Deci (2000b), above n 213; Ryan and Deci (2000a), above n 64; and Chirkov et al, above n 216.

²²⁵ Chirkov et al, above n 216, 99.

²²⁶ Ryan and Deci (2000a), above n 64, 62.

²²⁷ Ryan and Deci (2000b), above n 213, 72.

behavioural goal or regulation, such that the action is accepted or owned as personally important'.²²⁸

(4) *Integrated regulation* – refers to extrinsically motivated behaviours that are fully assimilated to the self, which means they have been evaluated and brought into congruence with one's other values and needs'.²²⁹ Integrated behaviours are the most autonomous and self-determined of the externally motivated behaviours. In integration, the extrinsic norms are internalized, and this this zone shares some characteristics of intrinsically motivated behaviours, though behaviours guided by integrated regulation are not performed purely for the 'love of it' or inherent enjoyment.²³⁰

Increased internalization is associated with greater interest in a subject matter, positive coping styles, greater volitional persistence and effort, enhanced positive self-perception and subjective well-being, better quality of engagement, greater levels of behavioural effectiveness, and better assimilation of individuals within their social group.²³¹ Greater externalization is associated with lower levels of interest and effort, blaming others, poorer coping,²³² and a loss of initiative and poorer quality of learning 'especially when learning is complex or requires conceptual, creative processing'.²³³

Self-determination theory proposes that internalization is facilitated by a sense of autonomy, relatedness, and perceived competence. Autonomy enables an individual to actively transpose external values into their own, and involves 'a sense of choice, volition, and freedom from excessive external pressure toward behaving or thinking a certain way'.²³⁴ Relatedness speaks to the social environment in which external regulations occurs:

²²⁸ Ibid 72.

²²⁹ Ibid 73.

²³⁰ Ryan and Deci (2000a), above n 64, 62.

²³¹ Ryan and Deci (2000b), above n 213, 73.

²³² Ibid 73.

²³³ Ryan and Deci (2000a), above n 64, 59.

²³⁴ Ryan and Deci (2000b), above n 213, 74.

[T]he groundwork for facilitating internalization is providing a sense of belongingness and connectedness to the persons, group, or culture disseminating a goal.²³⁵

Perceived competence resonates with Bandura's theories of self-efficacy:

Adopting as one's own an extrinsic goal requires that one feel efficacious with respect to it. Students will more likely adopt and internalize a goal if they understand it and have the relevant skills to succeed at it.²³⁶

Bringing this discussion back to farmers' participation in voluntary stewardship initiatives, the key question for empirical review becomes:

Does the VSP help farmers to internalize stewardship norms?

Stobbelaar et al used self-determination theory in their research of Dutch farmers' involvement with a voluntary environmental program sponsored by the Dutch government.²³⁷ Reviewing the academic literature, they assembled the features of voluntary programs that would likely encourage farmers to internalize sustainability norms. These features are adapted in Table 2.1 and for the purposes of this study have been grouped around seven broad themes: communications, capacity building, tailoring to individual capacities, interdependence and peer support, autonomy and self-determination, and building trust with external stakeholders. These attributes are used as evaluation criteria to answer the question on VSP's capacity to facilitate internalization.

²³⁵ Ryan and Deci (2000a), above n 64, 64.

²³⁶ Ibid, 64.

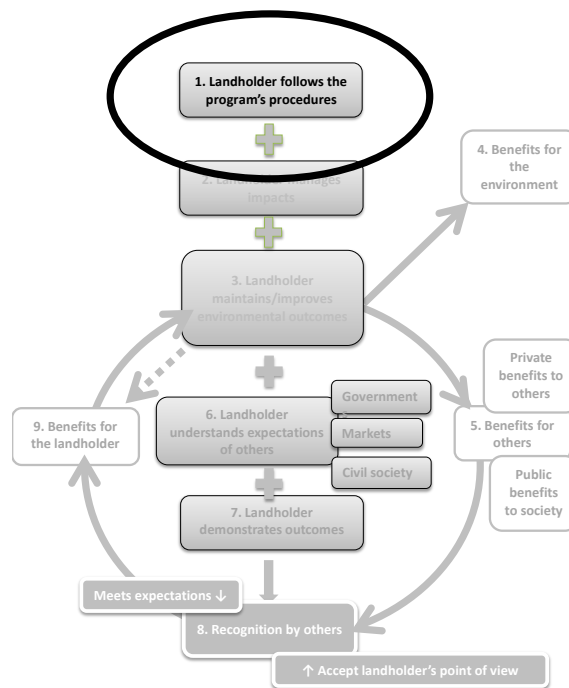
²³⁷ Stobbelaar et al, above n 23.

Table 2.1: Program attributes likely to promote internalization of norms

Attributes	
A. Communications	<ol style="list-style-type: none"> 1. Makes sustainability information readily available. 2. Provides a meaningful rationale that enhances farmers' awareness of the underlying problem and the goals, by way of clear and non-coercive communication. 3. Offers observable, measurable effects or tangible returns for participants, or, where these are not available, then a clear explanation of the value of an activity, with emphasis on the environmental benefits rather than the financial profits.
B. Tailoring to individual capacities	<ol style="list-style-type: none"> 4. Acknowledges farmers are heterogeneous in their decision-making processes and managerial abilities.
C. Capacity building	<ol style="list-style-type: none"> 5. Builds competence in pro-sustainability behaviours. 6. Enhances farmers' means (material, knowledge, and managerial ability) to implement sustainability.
D. Interdependence and peer support	<ol style="list-style-type: none"> 7. Encourages co-operation. 8. Fosters a supportive social environment. 9. Encourages interdependence and relatedness. 10. Has an organizational structure that emphasizes equality between members and common goals, interdependence and sociability ('horizontal collectivism').
E. Autonomy & self-determination	<ol style="list-style-type: none"> 11. Allows choice and freedom for farmers to select the measures to reach sustainability goals. 12. Gives participant-farmers responsibility for controlling compliance.
F. Building trust with external stakeholders	<ol style="list-style-type: none"> 13. Maintains a relationship of trust with relevant governmental agencies with responsibility for sustainability policy.
G. Matching costs and benefits	<ol style="list-style-type: none"> 14. Balances costs (money, time, effort) for implementation with the perceived benefits

(Adapted from Stobbelaar et al, 2009)

2.4. Following Management Procedures – Element 1



The conceptual framework assumes that a ‘good’ VSP would design procedures that guide farmers towards Elements 2 and 3 – that is, towards managing their impacts and achieving outcomes. The existence of procedures is part of what makes a VSP programmatic rather than simply a piece of information or an ad hoc management practice. The rationale for a systematic approach arises out of the need for sustained, innovative, reflective action for the protection of the environment, which are hallmarks of the adaptive management paradigm of the environmental management sciences.²³⁸ Given the difficulty and complexity of environmental management on farms, the procedures themselves may require a degree of sophistication and complexity to match the problem. Furthermore, procedures may be novel or counter-intuitive for many farmers. The empirical research question of interest here is simply:

Does the VSP help farmers follow good management procedures?

In summary, the assumption behind the first three elements of the conceptual framework is that, by following the VSP procedures and managing impacts, the landholder achieves positive environmental outcomes. In other words, the environment exhibits an improvement in condition, or, if it was already in good

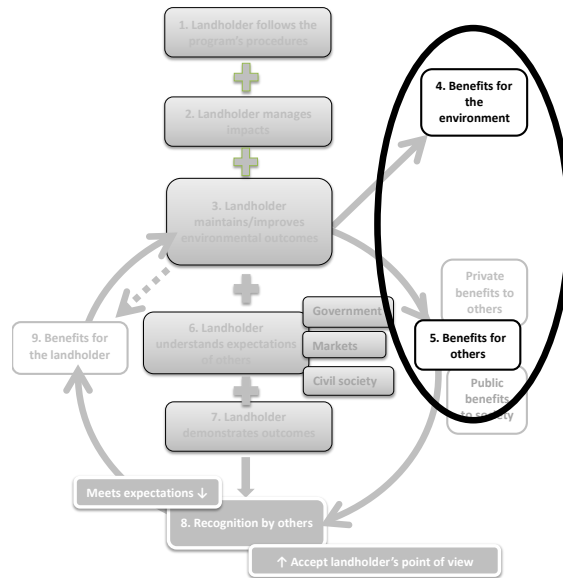
²³⁸ Kenneth D Genskow and Danielle M Wood, 'Improving Voluntary Environmental Management Programs: Facilitating Learning and Adaptation' (2011) 47 *Environmental Management* 907.

condition, that condition is maintained. If Element 2 represents the crux of the ethical dimension, then Element 3 represents the crux of the ecological dimension. Ultimately, if vital ecosystem functions collapse, it will be little comfort to say we did our ethical best (Element 2) or followed a procedure (Element 1). The rationale for following the scheme's procedures and managing impacts is to improve or maintain positive environmental outcomes that secure ecosystem integrity. This is not to say that the sole responsibility for outcomes is the landholder's – it is a collective societal responsibility and many of the factors for securing the outcome may be outside the landholder's influence.

Using the definitions in Chapter 1, Elements 2 and 3 are essentially concerned with natural resource *management*; that is, the techniques, behaviours, actions and omissions undertaken by the land manager that affect the on- and off-farm condition of natural resources and the environment. Element 1 is concerned with natural resource management to the extent that the VSP procedures guide farmers towards Elements 2 and 3.

The remainder of the framework is concerned with natural resource *governance*; that is, the influencers who steer management and incentivize particular types of behaviour. The framework assumes that by recognizing landholders' 'good' behaviours and good management, and by transferring benefits to them, external stakeholders perform the steering and incentivizing functions of governance. In addition to management, Element 1 could be a governance element to the extent that VSP procedures are mindful of the potential of the positive influence of external stakeholders. Elements 6 and 7 (understanding external stakeholders' expectations and demonstrating outcomes – discussed below) are governance elements – they are not concerned with management *per se*, but with convincing non-farmers to support good management and to provide an incentive for farmers to direct their behaviours towards positive environmental and animal welfare outcomes. But before discussing Elements 6 and 7, we need to consider the beneficial consequences of farmers managing their impacts and achieving outcomes, represented by Elements 4, 5 and 9.

2.5. Creating Benefits For Others – Elements 4 and 5



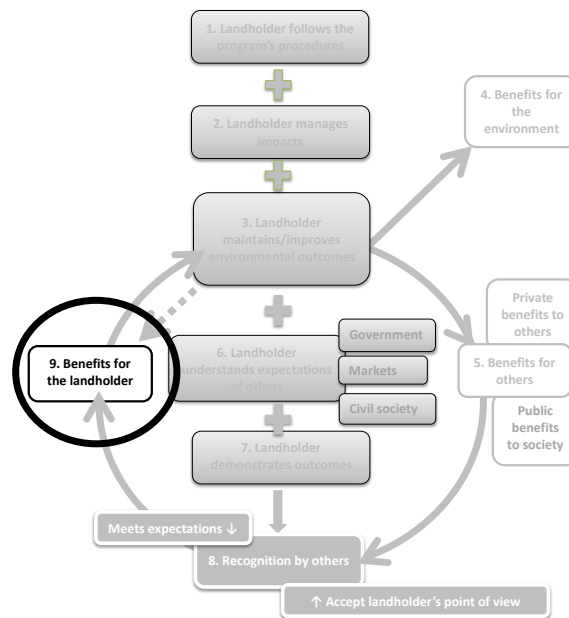
The framework assumes that by managing impacts and achieving public interest outcomes, a farmer provides a range of benefits to a range of beneficiaries: Elements 4 and 5 of the figure. Element 4 refers to the direct benefit to the environment – to plants, animals, other biota, the biophysical features of ecosystems (water, soils, etc.), ecosystem function and processes – and the direct benefits to the welfare of animals. The environment and animals are not able to assert their claim on these benefits, nor are they able to transfer a reciprocal material benefit back to the farmer. They rely on other advocates – government, and environmental and animal welfare NGOs.

Element 5 refers to the benefits to (human) non-farmers. Some of these are private benefits, some public, and some of a mixed nature. Private benefits include the continued production of agricultural products on a commercial basis, which benefits the market players along the supply chain and end-consumers. Some benefits accrue to future generations of farmers and non-farmers, which like the environment and animals generally, are not able to assert their claim to these benefits and are represented by stakeholders, such as government, environmental and animal welfare NGOs.

The theoretical underpinning for the provision of these benefits comes from public policy and ethical principles, such as the precautionary principle and the principle of

inter-generational equity, which posit that a landholder has responsibilities to others for the maintenance of ecosystem function and ecological integrity of farmland.

2.6. Transferring Benefits to The Landholder – Element 9



Good environmental and animal welfare management can directly benefit agricultural production and create profit for farmers.²³⁹ There is an ongoing need for explanation and quantification of these benefits, so that they act as their own reward and incentivize the landholder to continue achieving them. VSPs potentially play an important role in this regard.

However, it is not a certainty that improving or maintaining public interest environmental and animal welfare outcomes accrues benefits for the landholder. This is shown by the dotted line from Elements 3 to 9. Indeed, the costs and benefits of good environmental and animal welfare management are often mismatched. Biodiversity is a typical case in this regard:

²³⁹ For a summary of Australian and international research literature on this point, see Emma Aisbett and Marit Kragt, 'Valuing Ecosystem Services to Agricultural Production to Inform Policy Design: An Introduction (Research Report No 73, Environmental Economics Research Hub, Australian National University, 2010).

Biodiversity ... is a public good because we all benefit from it, although we largely rely on others (mostly private landholders) to provide it, and we don't give them much incentive to provide it.²⁴⁰

The conceptual framework reflects an assumption that external stakeholders are in a position to influence and incentivize farmers' behaviour. As outlined in Chapter 1, the incentives available from external stakeholders can be positive or negative. Negative incentives include punitive measures, but since this study primarily focuses on VSPs, the conceptual framework concentrates on positive incentives. VSPs are constrained in their ability to impose punitive sanctions; VSP operators are not the police, nor do they have coercive powers of the state. The conceptual framework is based on the assumption VSPs work better with positive incentives, facilitating a flow of benefits, advantages and rewards for participants rather than active punishment of recalcitrant landholders. Punitive measures may be a 'contribution' from a government partner in a whole collaborative governance system, but are unlikely to be measures that VSPs implement, with the exception of the loss of the VSP's endorsement. There are many types of benefit that external stakeholders may confer on farmers. Market stakeholders might offer a price premium or access to a high value market. Civil society stakeholders might offer a public acknowledgement that strengthens the farmer's social licence to operate. A government stakeholder might offer a regulatory concession or tax relief or a financial incentive.

The conceptual framework assumes that a virtuous cycle ensues from the exchange of benefits: the participating farmers do the right thing, show they did the right thing, the external stakeholder acknowledges they have done the right thing and rewards them, so the farmers are inspired to keep doing the right thing, or even to improve performance, with consequent benefits to themselves, external stakeholders and the environment itself. The flow of benefits is important to the cycle, and without it, the cycle weakens and eventually stops. Consequently, the research question for the empirical enquiry is:

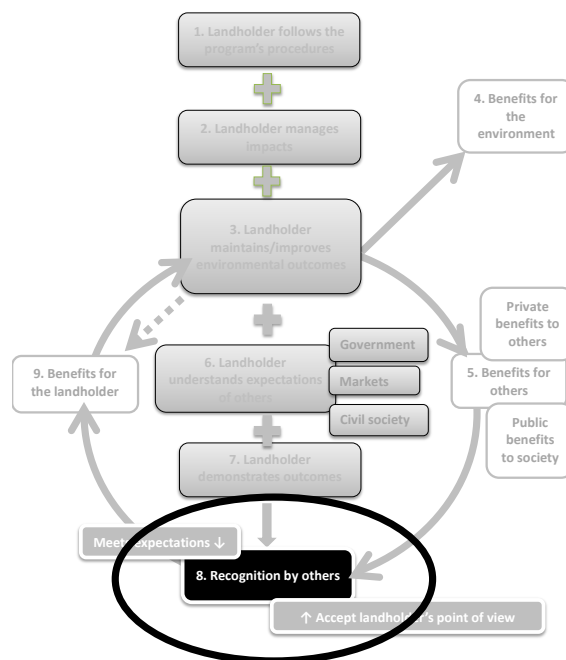
Does the VSP facilitate an exchange of benefits between farmers and non-farmers?

²⁴⁰ Gunningham (2009), above n, 94.

The conceptual framework assumes that, if a VSP that facilitates this mobilization of benefits, it would be a valuable contributor in a collaborative governance regime, though it does not assume such a mobilization is the sole task of or can be guaranteed by the VSP.

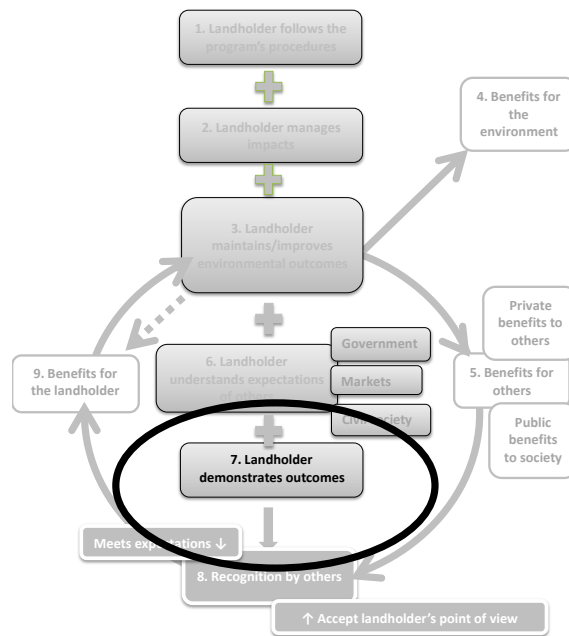
This transfer of benefits is the prerogative of the external stakeholder and, strictly speaking, is outside the management sphere of the landholder or the purview of the VSP. Neither landholder nor VSP can force an external stakeholder to come to a collaborative governance arrangement and commit to the exchange of benefits described in this framework. The best the VSP can do is create an opportunity or a platform through which the exchange can occur.

2.7. Recognition – Element 8



In order for external stakeholders to transfer a benefit to farmers, the conceptual framework assumes there will need to be some sort of recognition by the stakeholders of the farmers' achievements. 'Recognition' in this sense means a practical acknowledgement of the farmers' beneficial conduct. Recognition is underpinned by the same economic and ethical theories as the exchange of benefits. However, the conceptual framework assumes that before stakeholders are likely to recognize landholder performance, two further conditions are necessary: demonstrating outcomes and understanding the stakeholders' expectations.

2.8. Demonstration – Element 7



If landholders manage their impacts and achieve desirable environmental outcomes then, arguably, they exhibit the stewardship ethic and the integrity of the environment will be safeguarded as far as possible. If nothing else is desired by landholders or external stakeholders then nothing further is required; when landholders manage their impacts and important environmental outcomes are achieved, and the landholders desire nothing in return, then there is no moral imperative for them to participate in VSPs, or understand stakeholders' expectations, or demonstrate anything. This is an important consideration to bear in mind when the results of this study are discussed in later chapters. This study is not implying that landholders who decline to participate in VSPs are unethical, or that such participation is a hallmark of stewardship. The defining feature of ethical conduct – of 'doing the right thing' – is to have managed one's impacts as well as possible.

However, the situation changes where external stakeholders insist that landholders justify their land management as a condition of continued access to important resources, or where the landholder desires recognition for doing the right thing. In these situations, there arises a fundamental issue of trust. External stakeholders are unlikely to bestow recognition unless landholders demonstrate they have done the right thing. Even good land managers will struggle to convince outsiders to support their

good management (e.g. through a price premium, financial grant or social licence) without being willing to demonstrate good management.

In economic theory, products with credence claims suffer informational asymmetry, which increases the opportunity for fraud.²⁴¹ Credence goods are those with qualities that ‘although worthwhile, cannot be evaluated in normal use’.²⁴² This includes claims about ‘process attributes’, for example, ‘whether food has been produced organically or not, whether tuna has been caught with dolphin-friendly methods or not, or whether electricity has been generated with a low-emissions technology or not’.²⁴³ Asymmetry of information means that the farmer knows more than the consumer or the government about whether a farm product was produced according to an environmentally sustainable production system. Demonstration of outcomes engenders trust by helping to overcome problems of informational asymmetry and fraud.

The question for empirical evaluation of VSPs that arises from this consideration is:

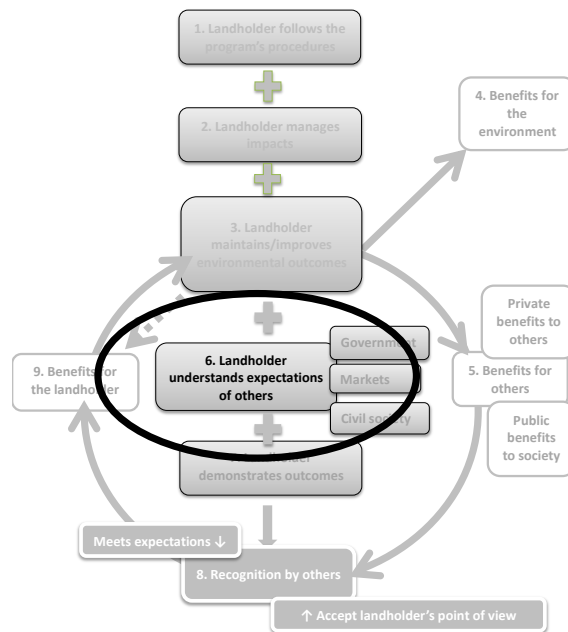
Does the VSP help landholders demonstrate achievement of outcomes to non-farmers?

²⁴¹ Uwe Dulleck, Rudolf Kerschbamer and Matthias Sutter, 'The Economics of Credence Goods: An Experiment on the Role of Liability, Verifiability, Reputation, and Competition' (2011) 101 *American Economic Review* 526.

²⁴² M Darby and E Karni, 'Free Competition and the Optimal Amount of Fraud' (1973) 18 *Journal of Law and Economics* 67, 68-69.

²⁴³ Dulleck, Kerschbamer and Sutter, above n 241, 527.

2.9. Understanding Non-Farmers' Expectations – Element 6



If demonstration is meant to influence an external stakeholder, then farmers participating in a demonstration program should understand (if they do not already) the stakeholder's expectations for management, otherwise the farmers risk demonstrating self-referentially – demonstrating to their own standards – thinking their own views on land management to be correct, only to find the external stakeholders do not agree and refuse to provide any recognition of the farmers' efforts.

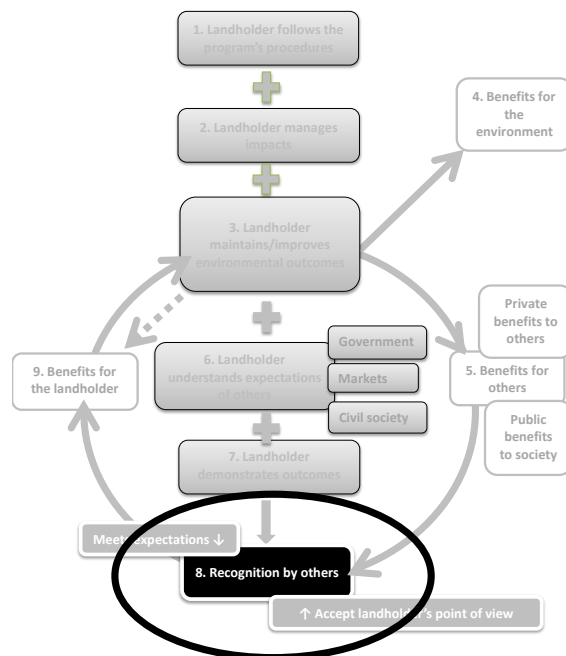
This raises a dilemma: whose version of truth is correct? Who determines what constitutes 'good' land management? Farmers argue they know best when it comes to land management, and environmental NGOs counter with historical incidences of farmland degradation. 'Doing the right thing' is contested and it would be frustrating for landholders to go to the trouble of demonstrating what they believe is their superior land management on the expectation of a price premium or acknowledgement of good performance from an influential NGO only to find consumers or the NGO have a radically different view of what constitutes good performance. If a landholder aims to demonstrate good performance to an external stakeholder, logically the landholder should understand and attempt to satisfy *the stakeholder's expectations* about good management.

Because VSPs act as a mediator between farmers and their achievement of outcomes, the expectations of stakeholders may have two dimensions: expectations about the farmers' conduct; and expectations about the operation of the VSP itself. The potential stakeholders and their expectations vary: governments expect compliance with the law, consumers expect food products free of toxic residues, and environmental advocacy groups expect biodiversity conservation. Landholders may need to customize and prioritize their responses to sets of expectations. At the organizational level of a VSP, external stakeholder may have strong expectations about 'good governance' principles such as transparency, accountability, effectiveness, efficiency and equity.

The theoretical underpinning for this element comes from the same public policy and ethical perspective as Elements 4 and 5 (e.g. the precautionary principle, intergenerational equity and the management of resources for the common good). The question for empirical investigation is:

Does the VSP help farmers come to understand non-farmers' perspectives and expectations for land management?

2.10. Recognition Revisited – Element 8



The conceptual framework assumes recognition has two perspectives – a top-down and a bottom-up perspective. In the first, the external stakeholder has an expectation about the farmers' performance; the farmer understands that expectation and delivers the expected performance. Having followed the procedures of the VSP, managed impacts, delivered outcomes in line with stakeholder's expectations, and demonstrated delivery, the landholder anticipates recognition of the fact from the external stakeholder. The model assumes this satisfies the external stakeholder, who then recognizes the farmer's efforts and transfers a benefit.

A potential criticism of this top-down approach is that it allows powerful external stakeholders – government, consumers, advocacy NGOs – to impose their will on hapless landholders. Such an approach assumes the external stakeholders know best – that their view of good performance is correct, and that the aim of participation in the VSP is to shift landholder thinking and practice to align with outsiders' values. However, 'good' performance is a contested field. Just as it is possible for landholders to have an unrealistically benign view of their management, so too it is possible for consumers, processors, governments and advocacy NGOs to be ignorant, sentimental, misinformed, miserly, apathetic, or oblivious to the reciprocal responsibility of stewardship. The evaluation framework would be lopsided unless there is acknowledgement that sometimes landholders have a better view of good land management than external stakeholders. Improving natural resources management on farms should have proper regard for landholder knowledge, experience, lifelong learning, professional capabilities, cultural attitudes and intrinsic motivations.

Thus, the second limb of Element 8 (Accepting the landholder's point of view) is bottom-up in character. From this perspective, farmers who can demonstrate that their management of impacts leads to public interest environmental and animal welfare outcomes could also assert their own positions, justify their own management and provoke external stakeholders into recognizing their achievements. In this way, the VSP becomes a mediation space for sorting through contested claims of what constitutes 'doing the right thing'. Discussions of farm sustainability and natural resource governance open up fundamental moral and political questions about:

[T]he balance between landholders' duty of care to protect natural assets as a condition of access to private property and their legitimate expectations of compensation when actions exceed that duty of care.²⁴⁴

The question, then, for empirical investigation from this element is:

Does the VSP facilitate recognition amongst non-farmers of the reciprocal responsibility of stewardship?

2.11. Consolidating the Research Questions

This chapter describes a conceptual framework comprising elements that need to be tested to answer the overarching research question. The framework comprises nine elements, from which nine sub-questions arise for investigation; these are consolidated in Table 2.2. The framework assumes Elements 1, 2, 3, 6 and 7 (following procedures, managing impacts, achieving outcomes, understanding stakeholder expectations and demonstrating outcomes in accord with those expectations) come within the farmer's management sphere: the farmer exhibits the behaviours that give life to these elements and becomes responsible for achieving them. The benefit elements 4, 5 and 9 are the consequences of landholders managing impacts and achieving outcomes, potentially attributable in whole or in part to following the procedures of the VSP. Element 8 (Recognition) is a response of the external stakeholder.

In the next chapter, the conceptual framework is converted to an evaluation methodology. This was applied to three VSPs.

²⁴⁴ Tennent and Lockie, above n, 17.

Table 2.2: Research questions arising out of the conceptual framework

Overarching Research Question	
Can farmers' participation in VSPs contribute to collaborative natural resource governance in rural Australia?	
Conceptual Framework	Research Sub-Questions
1. The landholder follows the program's procedures	1. Does the VSP help farmers follow good management procedures?
2. The landholder manages impacts	2. Does the VSP help farmers manage impacts on environment and animal welfare? 3. Does the VSP help farmers develop self-standards? 4. Does the VSP facilitate internalization of stewardship norms by farmers?
3. The landholder maintains/improves environmental & animal welfare outcomes	5. Does the VSP help farmers achieve public interest outcomes?
6. The landholder understands external stakeholders' expectations	6. Does the VSP help farmers understand external stakeholders' expectations?
7. The landholder <i>demonstrates</i> outcomes	7. Does the VSP help farmers to demonstrate public interest outcomes?
Benefits: 4. For the environment and animals 5. For external stakeholders 9. For the landholder	8. Does the VSP facilitate a transfer of benefits between external stakeholders and farmers?
8. Recognition by others	9. Does the VSP facilitate recognition amongst non-farmers of the reciprocal responsibility of stewardship?

CHAPTER 3: METHODOLOGY

This chapter has seven sections:

- Section 3.1 Explains some of the difficulties of empirical assessment, and introduces an integrative research paradigm to deal with these difficulties.
- Section 3.2 Describes the suite of methods used to conduct this study, as well as the approach for dealing with methodological risks and biases of the research design.
- Section 3.3 Summarizes the methodology, integrating the conceptual framework, research questions, and research methods.
- Sections 3.4 to 3.6 Outline the approaches to testing the methods, recruiting research participants, conducting the research, and recording, storing and analysing data.
- Section 3.7 Describes the format for reporting the research results in later chapters.

3.1. Difficulties and Integration

3.1.1. Difficulties Facing Empirical Evaluation

Many academic disciplines have the benefit of well-honed, widely accepted research methodologies; readily observed in the natural science disciplines, which have a long history of rigorous methodologies based on hypothesis testing, falsification and empirical evaluation. Such methodology is positivist and ontologically objective; assuming an objective reality comprising a physical world and social processes that exist separately to our minds' perception of them. Furthermore, positivism is epistemologically objective; assuming humans are capable of verifying and representing mind-independent reality.²⁴⁵ It values experimentation, quantitative analysis and statistical rigour. The pay-off for such a disciplined approach is the ability

²⁴⁵ John P Bechara and Andrew Van De Ven, 'Philosophy of Science Underlying Engaged Scholarship' in Andrew Van De Ven (ed), *Engaged Scholarship - A Guide for Organizational and Social Research* (Oxford University Press, 2007).

for a high degree of comparison among research projects, allowing for the steady refinement of theory.

In contrast, no such commonly accepted and comprehensive research paradigm exists for the study of the implementation of environmental governance. This chapter outlines some of the reasons for this absence, including: the scholarly traditions from which environmental governance scholars emerge, such as legal scholarship; the relative immaturity of the field as an academic discipline; the many practical barriers to the application of a unified research paradigm based on the scientific method; the sheer breadth and complexity of environmental governance concerns; and the axiological character of governance.

Traditional legal scholarship – as a branch of governance scholarship in general – is heavily framed around arguments about the doctrinal or philosophical significance of the law.²⁴⁶ Traditional legal scholarship does not venture much beyond the ‘categories of analysis ... used by judges and legislators whose work is being analyzed’.²⁴⁷ This has left legal scholarship open to the criticism that it has been uninterested in the empirical questions of the effectiveness of governance – of what works, when and how.²⁴⁸ Scholarship of enviro-legal systems has been described as mostly discursive rather than analytical, ‘descriptive, explanatory, interpretative rather than evaluative’.²⁴⁹

Fisher and colleagues suggest that environmental law and governance is a relatively immature academic discipline. They identify four methodological challenges to increasing maturity: ‘dealing with the speed and scale of legal/regulatory change, engaging with the interdisciplinary nature of the subject, addressing the heavy reliance

²⁴⁶ Paul Martin and Donna Craig, 'Accelerating the Evolution of Environmental Law through Continuous Learning from Applied Experience' in Paul Martin and Amanda Kennedy (eds), *Implementing Environmental Law* (Edward Elgar, 2015) 27.

²⁴⁷ Richard A Posner, 'The Decline of Law as an Autonomous Discipline: 1962-1987' (1987) 100 *Harvard Law Review* 761, 773.

²⁴⁸ Faure, above n 51.

²⁴⁹ Chris McGrath, *Does Environmental Law Work? How to Evaluate the Effectiveness of an Environmental Legal System* (Lambert Academic Publishing, 2010), 243.

in environmental law on a diverse range of governance arrangements and tackling the multijurisdictional nature of the subject'.²⁵⁰

Empirical validation of the effectiveness of governance faces a number of practical barriers: the long-term nature of natural resource issues; the challenge of measuring parameters that are not easy to quantify; the difficulty of attributing cause and effect in complex situations; and the instability of contexts (such as climate or market conditions). Evaluation of traditional regulation, economic incentives and social interventions, such as education and promotion, all suffer from these problems. Perhaps this is why so little objective evaluation of environmental governance arrangements is available. This limits objective comparison of the performance of alternative approaches, or various cocktails of these.²⁵¹

The short timeframe of empirical investigation rarely matches the long-term nature of natural resource processes. The time between the development of an innovative practice in natural resource management and its widespread on-ground adoption is measured in years. Unintended consequences rarely emerge immediately after an intervention. Learning to become proficient with new techniques takes practice over several agronomic cycles. Governance innovations require substantial time to be created and adopted, and their on-ground effects come a long time after adoption.

An over-emphasis on measurement can also result in disproportionate attention being paid to those things that are easy to measure. Easily quantified measures become the 'important' measures because that evidence is available. This tends to magnify the importance of technical data and input measures and discounts the more fundamental effects of learning, behaviour change, and social or ecological outcomes.

A governance initiative such as a VSP may operate in isolation, or have less than optimum support from other instruments and institutions, or operate in competition with them. Conversely, a VSP might be well supported institutionally and integrated into a regime of complementary instruments. Consequently, it may appear to be failing

²⁵⁰ Elizabeth Fisher et al, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21(2) *Journal of Environmental Law* 213, 215.

²⁵¹ See A B Jaffe and R N Stavins, 'Dynamic Incentives of Environmental Regulations: The Effects of Alternative Policy Instruments on Technology Diffusion' (1995) 29 *Journal of Environmental Economics and Management* S43.

or succeeding, when the failure or success may be better attributed to surrounding institutional factors.

Ideally an empirical evaluation would articulate a causal link between environmental governance and environmental outcomes. A positivist methodology using the scientific method would start with an accepted theory of causality, develop hypotheses predicting a set of outcomes based on the theory, test the hypotheses, make statistically reliable inferences and, if necessary, adjust the theory. However, complex cause and effect issues make it unlikely that a connection between an environmental governance intervention (such as participation in a VSP) and environmental outcomes can be proven, and the intricate interplay of political, economic, social and biophysical context factors, such as those discussed in Chapter 1, is hard to disentangle.

Governance is axiological in character – that is, concerned with ethics, norms and values. This study is value-oriented because it is predicated on the assumption that Australian society is well served by farmers and citizens internalizing a stewardship ethic. Farmers utilize natural resources that are essential for their livelihoods, but those resources are coincidentally essential for other groups. These include: future generations of farmers likewise looking to secure a livelihood; other species and ecosystems now and in the future; and current and future generations of humans relying on the continued production of the agricultural, environmental and cultural services concurrently sourced from farmland.

A stewardship ethic requires more than mere compliance with the law and it is mutual in character – in other words, stewardship is not solely a farmer's responsibility but a general responsibility of all sectors of society that make use of products and services arising from farmland. The question of how to foster a reciprocal stewardship ethic in farmers and non-farmers is a values-infused question. Core concepts of natural resource governance, such as governance, fairness, the common good, environmental ethics and virtues, environmental duties of care, and stewardship, are themselves contested and value-laden. The essence of 'sustainability' is a political trade-off between its economic, social and ecological dimensions, and there is no positivist test that can arrive at the 'truest' trade-off.

3.1.2. Towards an Integrated Approach for Studying Implementation of Environmental Governance

The difficulties outlined above necessitate a search for an alternative paradigm that integrates a variety of research concerns and methods relevant to the implementation of environmental governance. The policy research paradigm of Ann Mazcharzak is instructive in this regard. Majchrzak defines policy research as:

[T]he process of conducting research on, or analysis of, a fundamental social problem in order to provide policymakers with pragmatic, action-oriented recommendations for alleviating the problem.²⁵²

Majchrzak is concerned with finding ‘what works’, and in this sense ‘truth’ is that which is successful in achieving action. Policy research in her view is ‘fundamental research’, as distinct from ‘technical research’, because its questions are broad, multifaceted, with diverse consequences for large groups of people.²⁵³

Majchrzak outlines some defining features of her view of policy research.²⁵⁴ Fundamentally, policy research investigates social problems, and explicitly incorporates a consideration of values (axiological). Policymaking is complex, tentative, and proceeds by way of ‘a series of successive approximations in which policies are continually suggested, implemented, evaluated and revised.’²⁵⁵ Policy research is necessarily multi-dimensional, given that policy generally directs itself to complex social problems ‘composed of a number of dimensions, factors, effects, and causes’.²⁵⁶ Policy research therefore has the holistic and heroic task of attempting ‘to study the entire multidimensional nature of a problem’.²⁵⁷ Majchrzak cautions against an overly theoretical approach. For her, policy research ‘begins with the social problem and attempts empirically to induce concepts and causal theories as the study of the social problem progresses’.²⁵⁸

²⁵² Ann Majchrzak, *Methods for Policy Research: Applied Social Research Methods* (SAGE, 1984) 12.

²⁵³ Ibid 13.

²⁵⁴ Ibid 12 and 18.

²⁵⁵ Ibid, 15.

²⁵⁶ Ibid 18.

²⁵⁷ Ibid 18.

²⁵⁸ Ibid 19.

Unlike other forms of research, policy research seeks a more ambitious agenda than mere analysis of the past. For Majchrzak, policy research seeks to provide recommendations for the future, in order to improve the targeted social problem. Future orientation means that policy research is more speculative and prospective than other types of research.

Policy research is responsive to study-users, which does not imply one-sidedness; Majchrzak contemplates that there may be many potential users with conflicting interests. The intention for this study is that it should be responsive to those interested in the development of public policy around natural resource governance on farms, including policymakers and regulators, proponents of VSPs, and environmentally focussed farmers.

Policy research does not have the benefit of a ‘single, comprehensive methodology’²⁵⁹ and, in recommending methods to deal with the empirical challenges of policy research, Majchrzak notes the need for a pragmatically pluralist attitude, quoting, approvingly, Sith and Robbins’ assessment:

At its best, policy research is a matter of trade-offs and compromises. Because they address the sometimes ambitious questions of decisionmakers rather than of academicians, policy researchers frequently find themselves at the fringes of existing social science methodology – adapting, combining, and improvising as they go.²⁶⁰

Martin and Craig build on Majchrzak’s approach by focusing on the applied character of environmental governance research, which involves:

[A] complex mix of factual matters amenable to scientific methods, axiological issues where discourse and reason are the investigative tools, and matters of values weighting and predictions where judgement (informed by reason and data) is the investigative mechanism.²⁶¹

²⁵⁹ Ibid 58.

²⁶⁰ A G Smith and A E Robbins, 'Structured Ethnography: The Study of Parental Involvement' (1982) 26(1) *American Behavioural Scientist* 45.

²⁶¹ Martin and Craig, above n 246, 44.

The objective of such research is not of itself the creation of new knowledge but improved social and ecological outcomes – the goal is ‘not scientific (the pursuit of knowledge as an end) but pragmatic (the pursuit of knowledge for applied ends)’.²⁶² Rather than a purely scientific or philosophical investigation, these authors describe the design of environmental governance research as a strategy akin to military and corporate intelligence gathering:

Finding applied solutions to human problems of dynamic complexity is a core pursuit of strategy, where dynamic and poorly understood variables determine the outcome of policy action.²⁶³

The variables studied in strategic investigation include objective facts and subjective beliefs, and strategists are ready to synthesize all sources pragmatically in decision-making. However, this use of strategy is not undisciplined, and Martin and Craig suggest that environmental governance research would be improved by using the integrity mechanisms of the scientific method, which include a commitment to the disciplined use of objective data to enable continuous improvement, articulation and transparency of methods and data, disclosure of the limits of generalizability, and eventually peer review.²⁶⁴ The result would be a move towards a more integrated research paradigm:

[A]n epistemology that is neither purely discursive (doctrinal/philosophical and inductive) nor scientific (empiricist and deductive). Rather a strategic epistemology that blends both forms of investigation and synthesis, focused on finding pragmatic solutions for real world human behaviour challenges.²⁶⁵

In the absence of a clear-cut, accepted methodology, this study proceeds by way of some general methodological principles drawn from the discussion above:

1. The methodology needs to accommodate a consideration of norms and values.
2. The methodology is underpinned by an applied research objective – that is, to investigate a real world problem, with the intention of proposing recommendations for improvement.

²⁶² Ibid 44-45.

²⁶³ Ibid 45.

²⁶⁴ Ibid 47-48.

²⁶⁵ Ibid, 30.

3. The research design is open to methodological plurality, strategically combining different methods to cover a range of concerns.
4. The research design should not avoid the opportunity for investigating hard-to-measure parameters such as social learning and behaviour change.
5. The methodology be should disciplined, incorporating the integrity measures of the scientific approach, such as transparency of methods and data, and disclosure of the limits of generalisability, to facilitate continuous improvement of scholarly understanding.

3.2. Methods

This section outlines the suite of methods used in this study, shown in Figure 3.1. The sequence of the columns in the figure shows the logic of the research design. The first and second columns represent the conceptual framework and associated research questions explained in Chapter 2. The third column shows the methods used to conduct the research. The literature review was used to develop the conceptual framework and research questions, and the other methods were used to gather data to investigate the research questions. The study adopted a case study approach that employed three data gathering methods – document analysis, qualitative interviews and quasi-quantitative surveys. The fourth column shows the units of analysis for each method. The combination of the conceptual framework, research questions, methods, and units of analysis formed the overall methodology for evaluating the potential of the selected VSP cases and their farmer participants as prospective partners in collaborative governance arrangements with other governance parties. Each of the five methods will be discussed below.

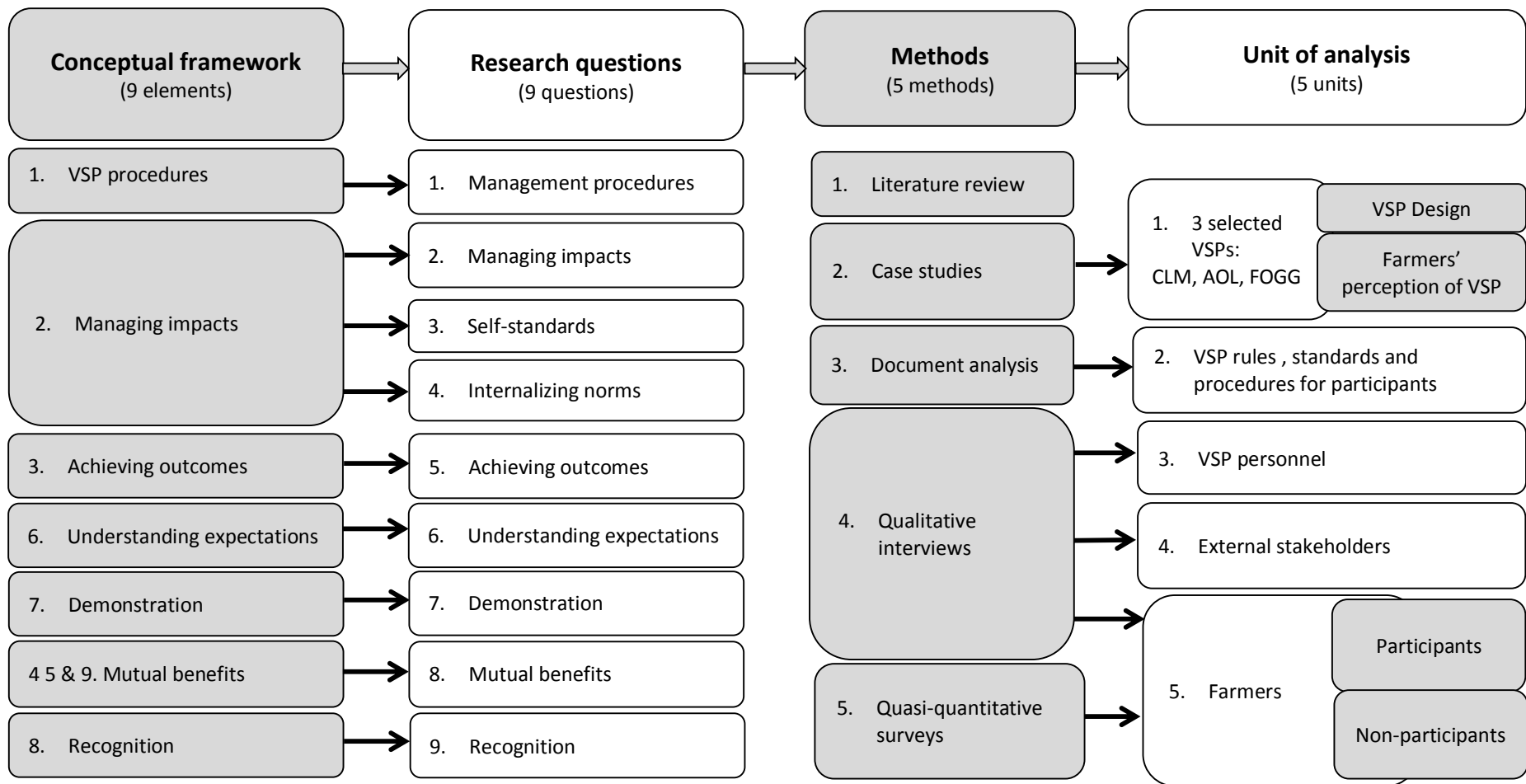


Figure 3.1: Overview of methodology

3.2.1. Method 1 – Literature Review

The literature review achieved four objectives. It explored the context for natural resources management and governance in rural Australia. It provided background on some of the approaches available for governance, including traditional command-and-control, voluntary, and collaborative approaches. It introduced behavioural theories that attempt to explain how people manage difficult and novel endeavours. And it laid the groundwork for the construction of the conceptual framework and crafting of the research questions. The results of the literature review have been integrated into Chapters 1 and 2.

3.2.2. Method 2 – Case Study Approach

In his seminal work on case study research, Yin defines a *case study* as:

[A]n empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.²⁶⁶

The contextual element is crucial to a decision to choose a case study approach:

[Y]ou would use the case study method because you deliberately wanted to cover contextual conditions – believing that they might be highly pertinent to your phenomenon of study'.²⁶⁷

as is the holistic element:

[T]he distinctive need for case studies arises out of the desire to understand complex social phenomenon ... [T]he case study methods allows investigators to retain the holistic and meaningful characteristics of real-life events ...²⁶⁸

Majchrzak summarizes the main advantages of case studies when doing policy research: case studies are timely, cost-effective and 'allow room for impressionistic analysis of a situation.'²⁶⁹ They allow for the identification of behaviours and possibilities related to the policy question not originally anticipated. Case studies can

²⁶⁶ Yin, above n 194, 18.

²⁶⁷ Ibid 13.

²⁶⁸ Ibid 4.

²⁶⁹ Majchrzak, above n 252, 63.

be more time-effective than other methods such as ethnographic or participant-observer studies.²⁷⁰

A case study approach was selected for this study because it offered the best chance of studying VSPs, given the difficulties of empirical evaluation discussed earlier in this chapter, and given the resource limitations of the project. The contextual and holistic orientation of a case study approach was expected to enrich the data set to allow refinement of insights.

Yin distinguishes a ‘case study’ from the ‘case(s)’ being studied. A single case study may comprise a single case, or several cases.²⁷¹ Two case studies were constructed using three selected VSP cases: a stand-alone case study of the CLM; and a combined case study of farmers involved in two organic schemes, ACO and FOGG.²⁷²

3.2.1.1. Triangulating VSP design and farmers’ perceptions of VSPs

Whether the selected VSPs help achieve each element of the conceptual framework is explored in this study through two ‘lenses’ or perspectives:

- (1) A design perspective – in other words: does the design of the VSP contribute to the achievement of the conceptual elements?
- (2) A farmer perspective – in other words: do farmers believe the VSP helps them achieve the conceptual elements?

If evidence can be located to answer either question affirmatively, then this is *prima facie* evidence of a potentially useful contribution to co-regulation or other collaborative governance arrangements. The study explores each research question using at least one and, in some cases, both perspectives for the three VSPs.

(1) Design perspective

In this study, ‘design’ refers to basic features of the VSP – the rules, standards and procedures that remain more or less the same from participant to participant – as well as the integration of the features into a systematic program. It is hypothesized that a

²⁷⁰ Yin, above n 194, 15.

²⁷¹ Ibid 46.

²⁷² Strictly speaking, ACO is an organic VSP in its own right, and FOGG is a group of farmers who participated in another organic VSP called NASAA Certified Organic (NCO), being the certification program of the National Association for Sustainable Agriculture Australia (NASAA). The reason for referring to the case as FOGG will be explained in Chapter 6.

well-designed program would facilitate – and a poorly designed program would inhibit – farmers’ achievement of the elements of the conceptual framework within their management sphere. Less obviously, good design is assumed necessary to maintain confidence of farmer-participants and potential governance collaborators over the long term. Natural resource problems require effort over long time periods, and short-term improvements may not be observable. The absence of short-term wins can sap the enthusiasm of farmers and other collaborators, unless they are confident that the program design is sound and likely to lead to success as long as they persist.

The primary design concern in this study is whether the design of a selected VSP helps participant landholders realize the five elements of the conceptual framework *that are within their management sphere*; that is Elements 1, 2, 3, 6 and 7 (following procedures, managing impacts, achieving outcomes, understanding stakeholder expectations and demonstration). A secondary concern is whether the design provides a mechanism for achieving the conceptual elements *outside* the farmers’ sphere of influence; that is, a platform for external stakeholders to recognize the achievements of participant-farmers (Element 8) and to extend benefits and rewards to them in acknowledgement of their achievements (the benefit elements 4, 5 and 9).

It was beyond the scope of this study to determine whether the design of the VSPs *in fact* causes landholders to follow procedures, manage their impacts, internalize stewardship norms, achieve outcomes in accordance with external stakeholders’ expectations, and be recognized and rewarded for doing so. Good design does not guarantee such achievement, but it does make it more probable, and bad design would almost certainly hinder achievement.

Two data gathering methods were used to test design of the case study VSPs – (1) document analysis; and (2) qualitative interviews with a CLM trainer, and external stakeholders.

(2) *Farmers’ perceptions of the VSPs*

Steelman explains that grassroots and bottom-up perspectives are especially relevant to studies of collaborative governance:

These perspectives are important to consider since they color the way that individuals will interact and shape the motivation for participation. The power to

implement an innovation rests ultimately with those most closely affected by the innovation.²⁷³

Farmers are not compelled by law to participate in a VSP. Potential partners in a collaborative governance arrangement are likely to be more confident about engaging with a VSP if its farmer-participants are positively disposed towards it.

The primary concern about farmers' perceptions in this study is whether farmers believe VSPs help them realize the five elements of the conceptual model within their management sphere. A secondary interest is farmers' perceptions of the elements outside their management sphere; that is, their perceptions of recognition by external stakeholders and the benefits expected to flow from participation in the VSP.

Two data gathering methods were used to test farmers' perceptions for each case study VSP: (1) qualitative interviews with farmers; and (2) quasi-quantitative surveys with the same farmers. For the two organic VSPs (ACO and FOGG), only farmer participants were interviewed. For CLM, both participants and non-participants were interviewed.

3.2.3. Method 3 – Document Analysis

This was one of the three methods for gathering data about the VSP design. The primary documentation analysed for each VSP was the rules and procedures that guided participation by farmers. For CLM, this was the CLM Manual, and for the two organic cases, the relevant organic standards. A number of secondary documents²⁷⁴ were also examined, summarized in Table 3.1.

Documents were tested against the research questions to evaluate whether the rules, standards and procedures supported the achievement of the elements of the conceptual framework. Figure 3.2 shows an example in diagrammatic form, using just one element (no. 2) and one research question (no. 2) and one VSP (ACO). All elements, research questions and VSPs followed the same schema.

²⁷³ Steelman, above n, 12.

²⁷⁴ The VSP websites are regarded as 'documents' for the purpose of analysis.

Table 3.1: VSP documents analysed

	CLM	ACO	FOGG
Primary document	CLM Manual	<i>ACO Standard</i> ²⁷⁵	<i>NASAA Organic Standard</i> ²⁷⁶
Secondary documents	Monitoring Manual	<i>National Standard for Organic and BioDynamic Produce</i>	<i>National Standard for Organic and BioDynamic Produce</i>
	Biodiversity Monitoring Framework	ACO's organic farm plan template	NCO's organic management plan template
	CLM Brochure	ACO application form	NCO application form
	ALMG website: http://www.almg.org.au	ACO and AOL websites: http://austorganic.com http://aco.net.au	NASAA website: http://www.nasaa.com.au

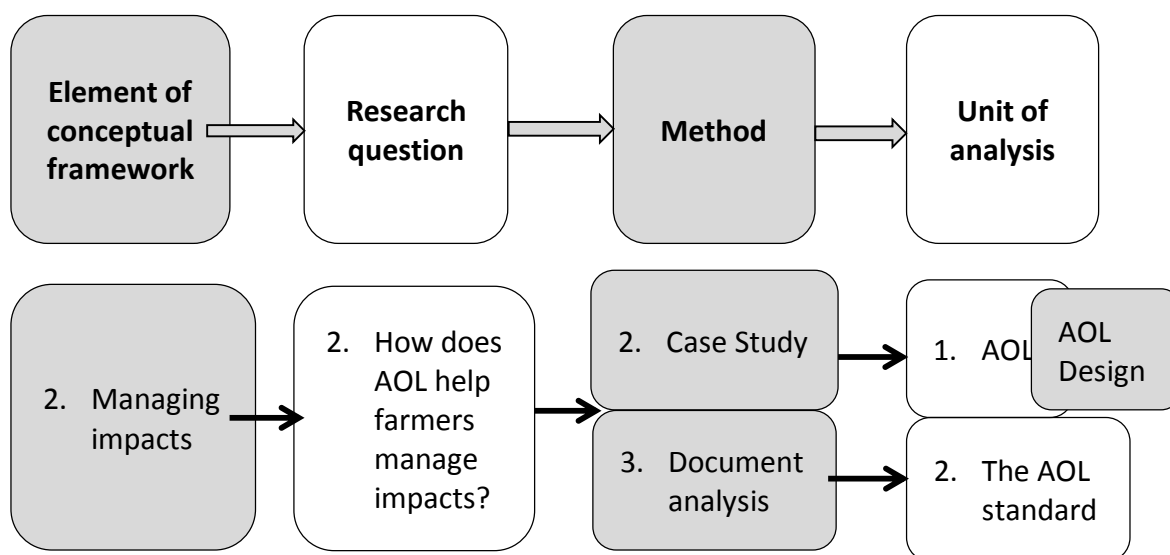


Figure 3.2: Analysis tests how ACO's design helps farmers manage impacts

3.2.4. Method 4 – Qualitative interviews

Yin regards interviews as ‘guided conversations rather than structured queries’.²⁷⁷ This study used ‘focused interviews’, which are conversational interactions occurring over a relatively short time period (an hour or two), guided by a set of open-ended

²⁷⁵ Abbreviated in the footnotes to ‘ACO’.

²⁷⁶ Abbreviated in the footnotes to ‘NASAA’.

²⁷⁷ Yin, above n 194, 106.

questions.²⁷⁸ The interviews were *qualitative* and *semi-structured*, meaning conversations formed around (but not wholly beholden to) a general set of open-ended questions.²⁷⁹ Interviews were conducted with three categories of interviewees: VSP personnel, external stakeholders and farmers.

3.2.4.1 Interview with VSP personnel

In one of the case study VSPs – CLM – farmer-participants use a computer software called *myEMS*, which guides participants through the rules, standards and procedures of CLM. *MyEMS* will be discussed in more detail in Chapter 5, but a few details are noted here to explain the necessity of interviewing CLM VSP personnel. *MyEMS* was commissioned by ALMG and is custom-made for CLM's procedures. It is only available to participants, who are introduced to *myEMS* with the assistance of an experienced trainer. Consequently, to gain a better understanding of CLM, the researcher secured access to *myEMS* via an interview with an experienced CLM trainer. This interview was the most open-ended and least structured of all the interviews conducted in this study, and primarily revolved around a single interview question: '*Can you show me how CLM works for CLM participants?*' All other questions in this interview arose during the course of the interview, rather than being formulated in advance.

Given that CLM participant details are held in the *myEMS* database on a confidential basis, the trainer explained *myEMS* in hypothetical terms by showing how *myEMS* would be used by an imaginary participant, rather than a real participant. Thus the interview provided data from a design perspective, rather than from an actual farmer's perspective.

This interview provides data only for CLM. Organic certification operates according to a different model, using a form-based process not mediated through proprietary software. The forms are available on the organic VSP websites and the organic certification process did not require further clarification with organic VSP personnel.

²⁷⁸ Ibid, 107.

²⁷⁹ Russell H Bernard and Gery W Ryan, *Analyzing Qualitative Data: Systematic Approaches* (SAGE, 2010), 29.

Figure 3.3 shows how the CLM trainer interview fits into the evaluation framework, again taking just one of the research questions (no. 2) as an example. All elements and research questions dealing with CLM design followed the same schema.

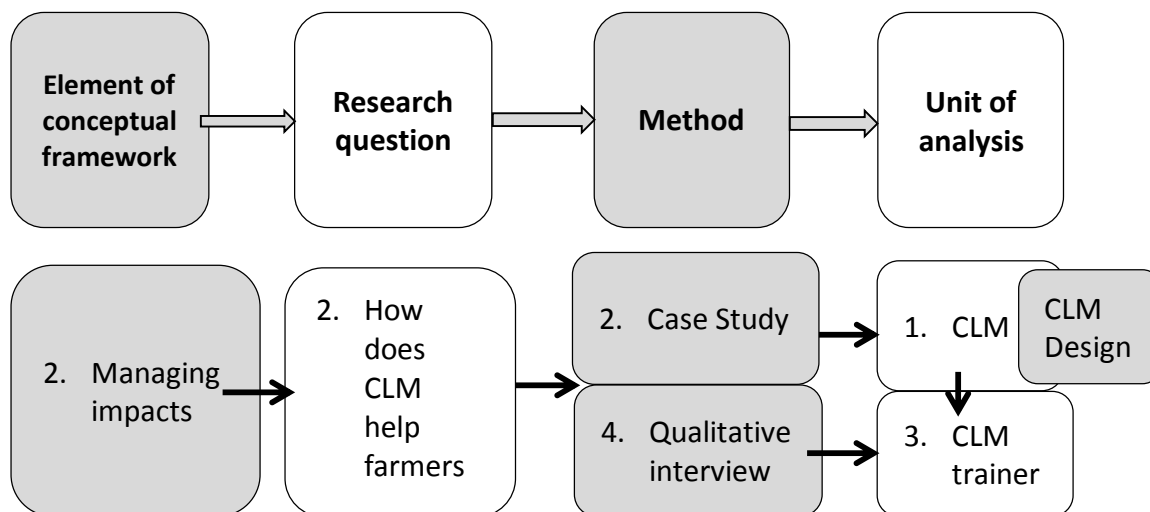


Figure 3.3: The interview with the CLM trainer tests how CLM's design helps farmers manage impacts

3.2.5. Interviews with External Stakeholders

This study is not simply a review of how farmers use VSPs to put into practice environmentally conscious farming techniques. Fundamentally, the study is concerned with the relationship between farmers and non-farmers ('external stakeholders') and how each responds to the other's needs and expectations. Elements 6, 7, 8 and 9 of the conceptual framework²⁸⁰ and their associated research questions are directed at this relationship.

Interviews were conducted with selected external stakeholders, guided by the open-ended question (see Appendix 1), which covered six themes:

- (a) Stakeholders' expectations of the way farmers manage the environment and animal welfare;
- (b) Stakeholders' expectations of farmers who claim to be 'good' managers;
- (c) The potential for VSPs to assist farmers to meet the stakeholders' expectations;
- (d) Stakeholders' expectations of the VSP itself;

²⁸⁰ Understanding stakeholder expectations; demonstration in accordance with stakeholder expectations; recognition by stakeholders; and a transfer of benefits from stakeholders to farmers.

- (e) Stakeholders' views on the potential for collaboration with VSPs; and
- (f) Stakeholders' views on the potential for them to recognize and reward farmers' efforts that meet expectations.

One of the results of the interviews was the elucidation of ideal design features that stakeholders expect VSPs would possess. The results of the interviews are explored in Chapter 4, which includes a collation of eleven ideal VSP design features identified by stakeholders (see Table 4.2). In answering research question 6, the design of each VSP was assessed for consistency with these ideals.

Figure 3.4 shows how the interviews with external stakeholders fitted into the evaluation framework.

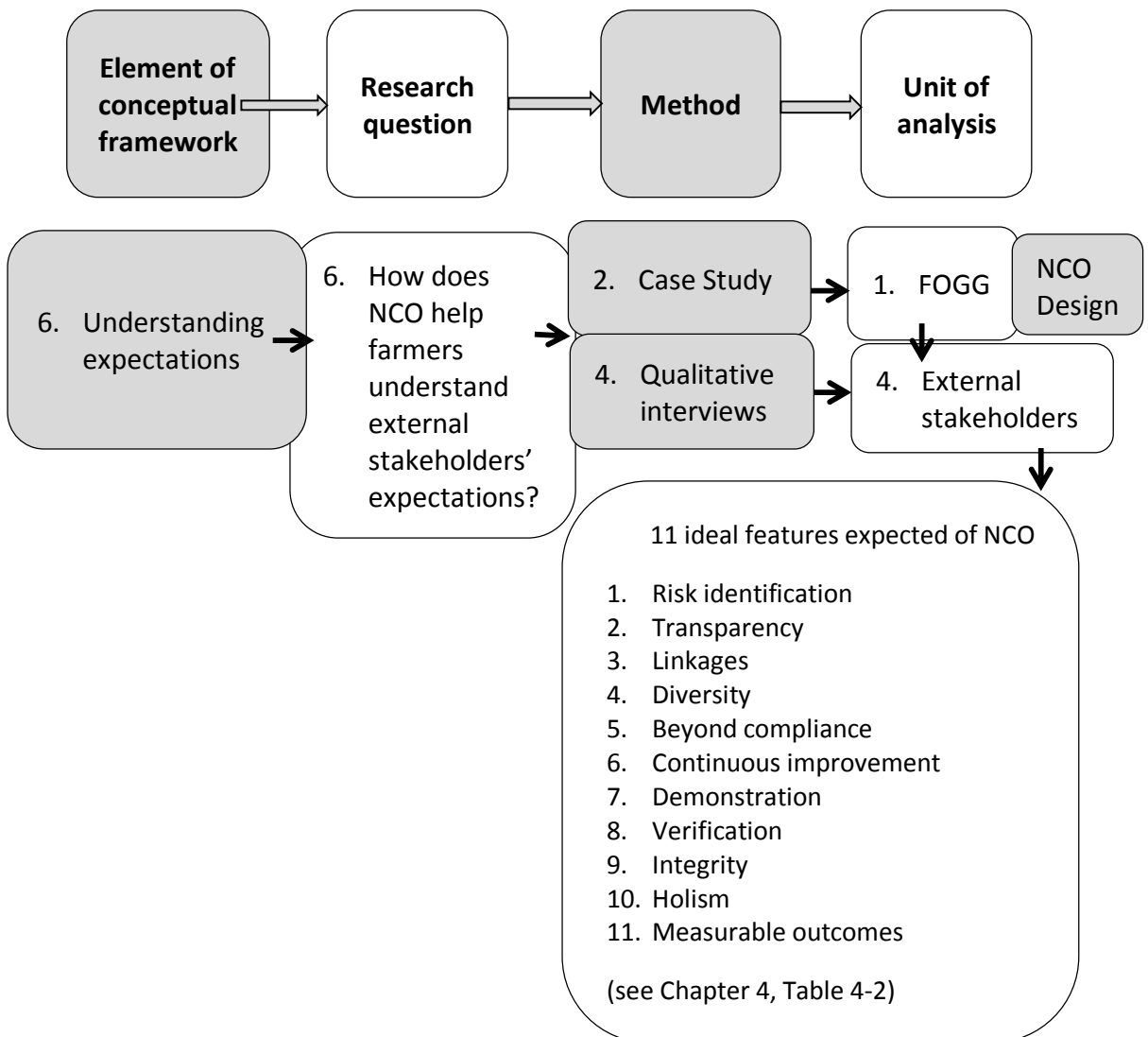


Figure 3.4: Interviews with external stakeholders identify their expectations, against which NCO's design is tested

The figure uses FOGG as an example (members participated in NCO). The same schema applied to the design of the other two VSPs.

3.2.6. Interviews with Farmers

Qualitative interviews with farmers were used as one of the two methods used to look at VSPs from farmers' perspectives.²⁸¹ Interviews were focused, qualitative, semi-structured and conversational in style, guided by open-ended questions, and allowing the interviewee to choose the direction of the conversation within the general topic boundary. The guiding questions are reproduced in Appendix 2, matched with the relevant elements of the conceptual framework.²⁸²

Unlike the investigation of the design dimension, where the researcher could work directly between the elements of the conceptual framework and the design without having to explain the elements to anyone else, the investigation of farmers' perceptions required that the researcher translate abstract research concepts into meaningful questions for farmers. In the pre-testing phase, some elements were found to be relatively straightforward to transpose into meaningful questions (Elements 4, 5, 6, 7, 8, and 9) and some were problematic (Elements 1 to 3). This was resolved by changing the order and re-framing the questions. Instead of tackling Elements 1 to 3 in sequential order, the interview questions asked landholders to relay their experiences of the following themes in a story-telling fashion:

- Their life on the land, their operations and enterprises;²⁸³
- Their views of the environmental issues and animal welfare issues on their farms, and in the wider district or industry;²⁸⁴
- Their experience of participation in the VSP;²⁸⁵ and
- Their approach to setting environmental and animal welfare goals for their farms, and working out whether they were achieving their goals.²⁸⁶

²⁸¹ The second method was quasi-quantitative surveys with the same farmers, discussed in more detail below.

²⁸² Throughout this study, specific questions from this appendix are identified by 'FI Q' (meaning 'farmers' interview question') and the question number.

²⁸³ FI Q1.

²⁸⁴ FI Qs 2 and 3.

²⁸⁵ FI Q 4. Not asked of non-participants in the CLM case study.

²⁸⁶ FI Q 5.

The interview questions did not directly address the benefit elements (Elements 4, 5 and 9) because landholders' views of the benefits or disbenefits of participation in a VSP were expected to arise throughout the course the interview.²⁸⁷ Landholders were asked about other programs they were involved with,²⁸⁸ to gauge whether the VSPs were complementary to other programs (assumed to be a benefit) or duplicative of other programs (assumed to be a disbenefit).

Element 6 (understanding stakeholders' expectations) was tackled in two parts: a general question about landholders' perceptions of external stakeholders,²⁸⁹ and a specific question about their perceptions of laws and regulations, as an expression of government and public expectations (a specific instance of external stakeholders' expectations).²⁹⁰ Elements 7 (Demonstration) and 8 (Recognition) were relatively straightforward in terms of asking farmers for their perceptions.²⁹¹

Figure 3.5 shows an example of how farmer interviews fit in the evaluation framework.

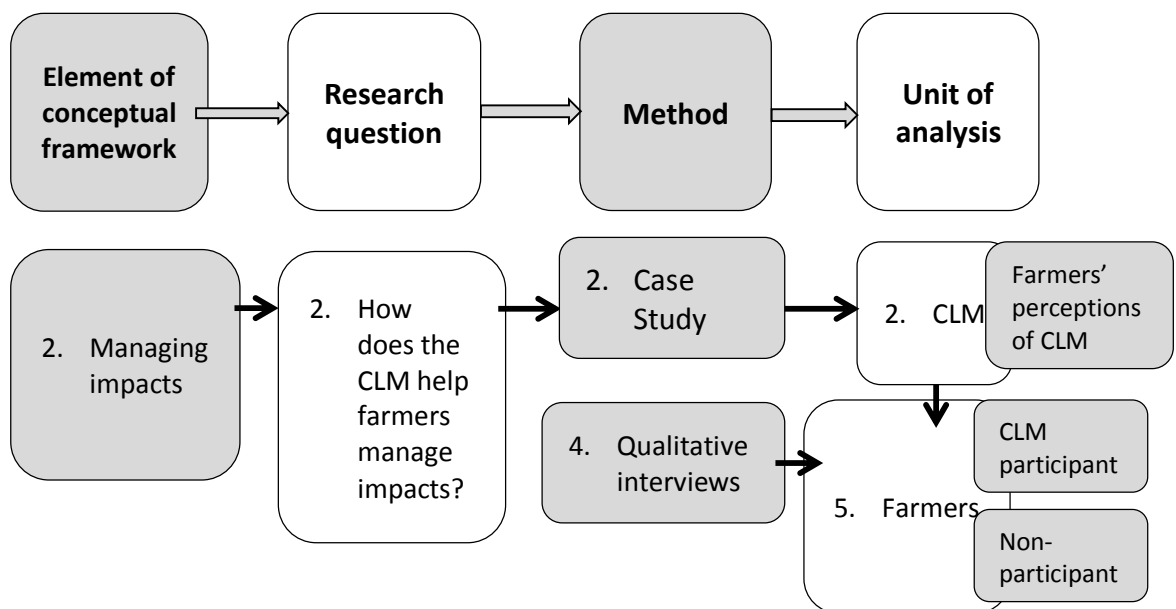


Figure 3.5: Interviews with CLM participants and non-participants test farmers' perceptions of the value of CLM in helping them manage impacts

²⁸⁷ Direct questions about benefits were asked in the quasi-quantitative survey, discussed later in the chapter.

²⁸⁸ That is, other than the three selected VSPs used in the case studies.

²⁸⁹ FI Q 7.

²⁹⁰ FI Q 6.

²⁹¹ FI Qs 8 and 9.

The example in Figure 3.5 uses one research question (no. 2) and shows the use of farmer interviews in the CLM case study, in which farmers participating in CLM and non-participants were interviewed. All VSPs and research questions were investigated using this schema, except that only participants were interviewed in the organic case study.

3.2.7. Method 5 – Surveys with Farmers

Semi-structured qualitative interviews are a conversational style of data collection. Too much structure or prompting by the interviewer results in leading questions, interrupts the interviewees' train of thought, and leaves no room for the interviewee to focus on matters of interest to them. In contrast, the evaluative nature of this study requires data to be gathered on a specific and limited range of parameters of relevance to the researcher. A balance was achieved by conducting a qualitative, semi-structured interview comprising open-ended questions, and then inviting the interviewee to complete a written survey instrument comprising closed-ended questions reflecting more specific interests of the researcher.²⁹² A survey instrument was developed with closed-ended questions consistent with quantitative analysis methods with the aim of triangulating results using the two methods.²⁹³

All farmers who were interviewed – and only those interviewed – were invited to complete the survey form. All but one farmer interviewed elected to complete the survey.²⁹⁴ The method was applied to each farmer in the same order – interview first and then survey. This allowed the interviewee the opportunity to express experiences and opinions relatively freely without prompting from the survey.²⁹⁵

Given the small number of respondents and the non-randomized sampling, statistical analysis was not feasible, and thus the survey is quasi-quantitative. This approach is consistent with Majchrzak's observation that policy research often faces difficulties obtaining a statistically useful representative sample:

²⁹² Bernard and Ryan, above n 279, 34.

²⁹³ Ibid, 29; Yin, above n 194, 114-116.

²⁹⁴ Her husband completed the survey.

²⁹⁵ Michael Quinn Patton, *Qualitative Research and Evaluation Methods* (SAGE, 3rd ed, 2002) 211.

[T]he policy researcher will frequently find that only small, purposefully sampled surveys are feasible ... [S]urveys (even small ones) may provide useful input for the policymaking arena.²⁹⁶

Figure 3.6 shows an example of how farmer surveys fit in the evaluation framework, using Research Question 2 and CLM. Once again, all VSPs and research questions were investigated using this schema. Only participants in the organic case study were interviewed.

The survey form followed the guidelines provided by Robson.²⁹⁷ Survey questions used mostly close-ended formats (e.g. simple statements about demographic details, yes/no responses, choosing from a pre-existing list of options, or choosing intensity of agreement/disagreement via a Likert-like scale), with limited opportunities for clarification in open-ended formats.

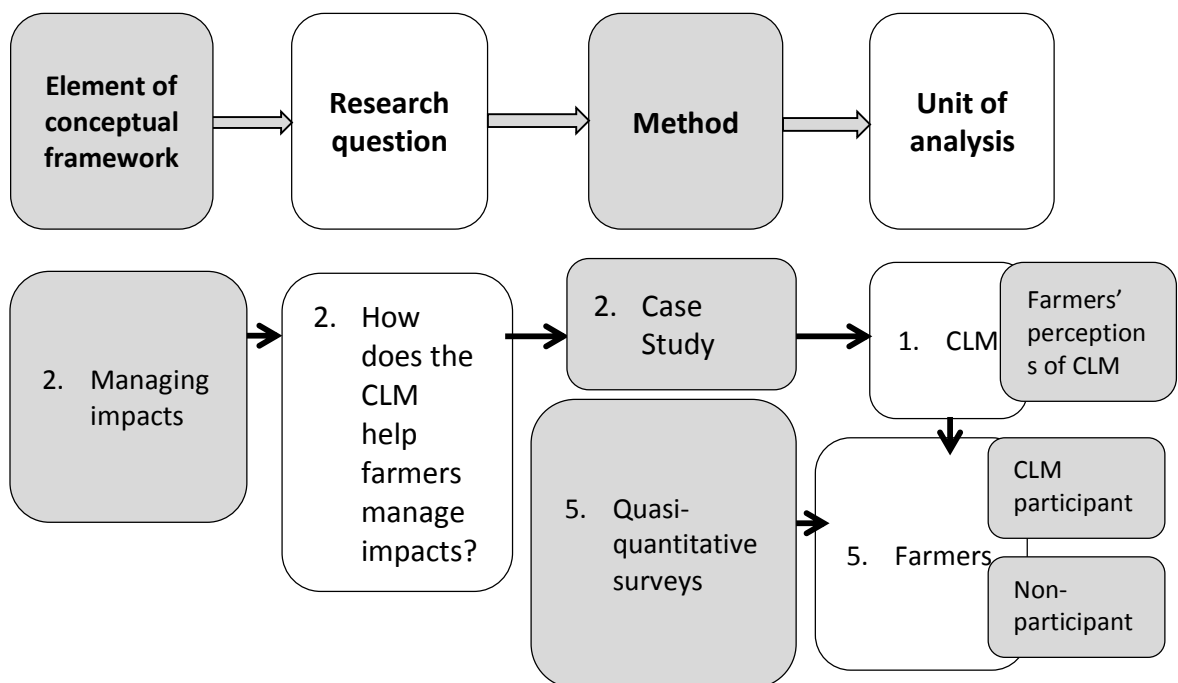


Figure 3.6: Surveys with CLM participants and non-participants test farmers' perceptions of the value of CLM in helping them manage impacts

Appendix 3 shows the version used for CLM participants. This is identical to the version used for ACO participants and FOGG members in the organic case study,

²⁹⁶ Majchrzak, above n252, 63.

²⁹⁷ Robson, above n 193.

except the words ‘organic certification’ were substituted in every place that ‘CLM’ is mentioned. Appendix 4 shows the version used for non-participants.²⁹⁸ For quick reference, the commonalities and differences between the participants’ and non-participants versions are shown in Appendix 5 (commonalities in Tables A1 and differences in Table A2). Appendix 5 also matches the questions with relevant elements of the conceptual framework.

There is considerable crossover between the subject matter covered by interview and survey questions, though there are some unique elements. As in the interviews, survey questions asked farmers about:

- Their life on the land, their operations and enterprises;²⁹⁹
- Their views of the environmental issues and animal welfare issues on their farms, and in the wider district or industry;³⁰⁰
- Their experience of participation in the VSP;³⁰¹ and
- Their approach to setting environmental and animal welfare goals for their farms, and working out whether they were achieving their goals.³⁰²
- Their perceptions of external stakeholders’ expectations in two parts: external stakeholders’ expectations generally,³⁰³ and law and regulation specifically;³⁰⁴
- Demonstration³⁰⁵ and recognition.³⁰⁶

As in the interviews, the survey asked about other programs the farmer was involved with,³⁰⁷ and the survey included a detailed question on farmers’ perceptions of the benefits to farmers, non-farmers, the environment and animals generally, using a pre-set list of 41 hypothetical benefits.³⁰⁸

²⁹⁸ Specific questions from these two appendices are identified in this study by ‘FS Q’ (meaning ‘farmers’ survey question’) and the question number.

²⁹⁹ FS Qs 1-4.

³⁰⁰ FS Qs 5, 7.

³⁰¹ FS Qs 6, 8, 11, 14, 19, 26. Not asked of non-participants in the CLM case study.

³⁰² FS Qs 10, 11, 13.

³⁰³ FS Qs 18, 20-22.

³⁰⁴ FS Qs 15-17.

³⁰⁵ FS Qs 23-25, 27.

³⁰⁶ FS Qs 28-31.

³⁰⁷ FS Q 32, 33.

³⁰⁸ FS Q 9.

Questions for non-participants in the CLM case study were modified, as they were obviously not able to comment on participation in CLM, or the benefits of participation in CLM. Non-participants responded to a more general query about the research themes (e.g. how they approached management of environmental issues *generally*, how they dealt with laws and regulations *generally*, what were the benefits of good land management *generally*). Thus survey results are not strictly comparable between participants and non-participants.

Two other features of the survey require further explanation:

- Evaluation of specific domains within the farmers' management sphere; and
- New Ecological Paradigm (NEP) test.

3.2.7.1 Evaluation of Specific Domains within the Farmers' Management Sphere

One of the risks of program evaluation is that a program will be judged harshly if it has not achieved intended public interest outcomes in the short-term, whereas these goals may take decades to achieve. This risk was managed in this study by adapting a commonly used evaluation tool called Bennett's hierarchy, developed in the 1970s by US Department of Agriculture researcher, Claude Bennett.³⁰⁹ This approach has been used extensively in Australia for evaluation of agricultural extension programs because it adjusts for the possibility that practice change is an incremental process and a long-term endeavour.³¹⁰

The hierarchy was modified to suit the needs of this study. Bennett had some lower levels in his hierarchy to describe achievements of the *extension program* (rather than achievements of the farmer-participants), such as inputs, activities and people involved. This study modified the hierarchy and concentrates on Bennett's steps that focus on the achievements of *farmer participants*, starting at 'KASA' (knowledge, attitude, skills, and aspiration/intention). An additional level was added – confidence

³⁰⁹ C F Bennett, *Analyzing Impacts of Extension Programs* (US Dept of Agriculture, Extension Service 1979).

³¹⁰ J Dart, R J Petheram and W Straw, 'Review of Evaluation in Agricultural Extension' (Project No. VCA-DA, RIRDC, 1998); Kate Roberts and Jeff Coutts, 'Methods, Monitoring, Evaluation and Reporting of Extension' (Paper presented at the APEN 2007 National Forum 'Capture, Consolidate and Communicate - The Changing Nature of Contemporary Extension', Canberra, 13-14 November 2007).

in dealing with a particular domain – to include Bandura’s notion of self-efficacy, discussed in Chapter 2.

The modified hierarchy adapted from Bennett’s is shown diagrammatically in Figure 3.7. The ‘steps’ represent the levels of the hierarchy. Each level is tested against most of the elements of the conceptual framework within the farmers’ management sphere.³¹¹ However, as was the case for the interviews, the elements had to be translated into concepts meaningful to farmers. These translated concepts are shown on the [reader’s] right-hand side in the figure as broad ‘domains’ of interest, matched with their associated element.

For VSP participants, the Bennett’s hierarchy was organized around the farmer’s perception of the value of participation in the VSP. It was expected to reveal how far up the hierarchy participation in the VSP enabled participants to reach for a particular domain. Taking ‘environment’ and CLM as an example, the hierarchy maps whether participants believe that participation in CLM improved their knowledge of environmental management, improved their attitude about environmental management, increased their confidence in managing environmental impacts, and developed their skills in environmental management. It also maps whether participants reached the stage of forming an intention or aspiration to adopt environmental management practices and, finally, whether they had, in fact, changed practices as a result of participation. In Bennett’s model, actual practice change leading to improved social or environmental outcomes is the ultimate goal but, in the short term, improvements in the lower levels of the hierarchy are seen as positive.

For non-participants in the CLM case study, the hierarchy was organized around the farmers’ perceptions of their own management of the domain. Given differences between the surveys, results are not strictly comparable between participants and non-participants. By combining steps in the hierarchy with the domains, profiles of every respondent could be constructed using the matrix in Appendix 6, which were aggregated for each cohort of respondents.

³¹¹ With the exception of Element 1 (procedures), which was omitted to reduce the length of the survey.

Elements of conceptual framework within landholder's sphere of influence:		2. Managing Impacts 3. Achieving Outcomes			6. Stakeholder Expectations		7. Demonstration
		Environment	Animal welfare	Monitoring goals	Laws & Regs	Stakeholders generally	Demonstrating outcomes
Level	6. Actual practice change to date in the domain.						
	5. Intention/aspiration to change practices sometime in the future in relation to the domain						
	4. Skills for dealing with the domain						
	3. Confidence/efficacy in dealing with the domain						
	2. Attitude towards dealing with the domain (i.e. how convinced the respondent is of the benefits)						
	1. Knowledge of the domain						

Figure 3.7: Modified Bennett's hierarchy of landholder perception

3.2.7.2. New Ecological Paradigm (NEP) test

The decision in the CLM case study to interview and survey both CLM participants and non-participants presents a methodological challenge. Theoretically, a bias in favour of CLM might emerge if the sampling process selects (even inadvertently) for CLM participants of high environmental consciousness and non-participants of low environmental consciousness. It would be preferable to know if this occurred and acknowledge it in the results. On the other hand, if the cohorts were similar in terms of their environmental consciousness, this would justify confidence that selection bias had been avoided.

This problem was resolved by applying a psychometric test called the New Ecological Paradigm scale (NEP), which appears as the last question in the written survey for farmers.³¹² NEP was devised by Dunlap and colleagues in 1978³¹³ and measures agreement with or divergence from ‘a paradigm or worldview that influences attitudes and beliefs toward more specific environmental issues’.³¹⁴ Though Dunlap hesitated to describe it as a score of environmental attitudes *per se*, it has become one of the most commonly applied tests of environmental attitudes.³¹⁵ The test has been modified several times since Dunlap’s initial 1978 iteration. This study used the version Dunlap refined in 2000 using a 15-item questionnaire and Likert-scale ranging from *Strongly Agree* to *Strongly Disagree* (with a *Don’t Know* option).³¹⁶

NEP is an indication of attitude rather than behaviour. It was not possible to verify interviewees’ reported attitudes against behaviours and practices. However, while a good attitude is not identical to good behaviour, in some situations attitude may be a necessary precursor to behaviour.³¹⁷ Given the primary concern of this study was environment and natural resources, no equivalent psychometric scale was

³¹² See FS Q34.

³¹³ Originally called the New Environmental Paradigm scale: R E Dunlap and K D Van Liere, 'The New Environmental Paradigm' (1978) (9) *Journal of Environmental Education* 10.

³¹⁴ Riley E. Dunlap et al, 'Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale' (2000) 56(3) *Journal of Social Issues* 425, 428.

³¹⁵ A meta-analysis of the history, application, and validation of the NEP is found in Lucy J Hawcroft and Taciano L Milfont, 'The Use (and Abuse) of the New Environmental Paradigm Scale Over the Last 30 Years: A Meta-Analysis' (2010) 30 *Journal of Environmental Psychology* 143.

³¹⁶ Dunlap et al, above n 314.

³¹⁷ Ibid.

administered for attitudes to animal welfare, though this could be investigated in a future study.

3.2.8. Methodological Risks and Biases

The selected methods are subject to a number of well-known risks and biases. Patton refers to the risk in qualitative research of the researchers becoming so absorbed in the local context of the phenomenon being studied that they ‘go native’ or ‘lose sensitivity to the full range of events occurring in the setting.’³¹⁸ This was mitigated by adopting a position of ‘empathetic neutrality’ (‘caring about and interested in the people being studied but neutral about the content of what they reveal’).³¹⁹

Surveys can be subject to a response bias, in which respondents answer mindlessly.³²⁰ This did not appear to be so in this study. The researcher was present for the completion of twenty of the twenty-two completed survey forms and witnessed a high degree of diligence by respondents in completing the forms. NEP questions were staggered to avoid response bias.

A number of risks to reliability are connected with self-reporting methods such as interviews and surveys. Interviewees may attempt to please the interviewer by giving answers they think the interviewer wants to hear (deference response or acquiescence bias).³²¹ Interviewees may attempt to second-guess the end-uses of the research, and answer in a way they assume will lead to politically favourable results. These risks were mitigated by drafting interview and survey questions in a neutral, non-leading tone, but the possibility of bias remains. Interviewees’ answers may be tempered by the presence of the interviewer, tending to cast the interviewee in a rosy light (third-party-present effect and social desirability bias).³²² This was mitigated by assuring them that candid responses were desired and that their anonymity would be maintained but, again, this possibility remains.

³¹⁸ Patton, above n 295, 568.

³¹⁹ Ibid 569.

³²⁰ D L Paulhus, 'Measurement and Control of Response Bias' in J P Robinson, P R Shaver and L S Wrightsman (eds), *Measures of Personality and Social Psychological Attitudes* (Academic Press, 1991) 17.

³²¹ Bernard and Ryan, above n 279, 33.

³²² Ibid 34; J M Neale and R M Liebert, *Science and Behavior, an Introduction to Methods of Research* (Prentice Hall, 1980) 49.

The study used varying sources and methods to triangulate inferences from several viewpoints. Different independent sources of data were used (e.g. documents and people), as well as different methods for the same source (e.g. interviews and surveys). Participant perspectives were balanced with ‘disconfirming’ perspectives³²³ of non-participants and external stakeholders.

3.3. Summary of Methodology

Figures 3.8 to 3.11 consolidate the entire methodology, showing the relationship between the elements of the conceptual framework, the associated research question, whether that question is investigated using the design or farmers’ perceptions perspective, the methods used, and references to the questions in the farmer interviews and surveys (abbreviations are shown under the figure titles). Also shown are the two research questions that require recourse to a separate set of criteria: Research Question 3 is tested against the fourteen attributes for internalization in Table 2.2; and Research Question 6 against the 11 ideal features of VSPs desired by interviewed external stakeholders shown in Table 4.2. The whole framework was used to evaluate each of the three VSPs. Appendix 7 shows the same information in a tabular format.

³²³ Or ‘negative case sampling’: Ray Cooksey and Gael McDonald, *Surviving and Thriving in Postgraduate Research* (Tilde University Press, 2011) 463.

Conceptual Framework	Research Questions	Design or Perceptions Perspective	Methods
1. Landholder follows the program's procedures	1. Does the VSP help farmers follow good management procedures?	<p><i>Design:</i> VSP's opportunities and support for participants to learn procedures.</p> <p><i>Farmers' perceptions:</i> perceptions of participation generally, and of goal setting, and monitoring.</p>	<p>DA, TI.</p> <p>FI: Qs 4&5 FS: Consolidated BH</p>

Figure 3.8: Summary of methodology – Part 1 – Research Question 1

(DA=document analysis; TI=trainer interview; EI=external stakeholder interviews; FI=farmer interviews; FS=farmer surveys; BH=Bennett's Hierarchy)

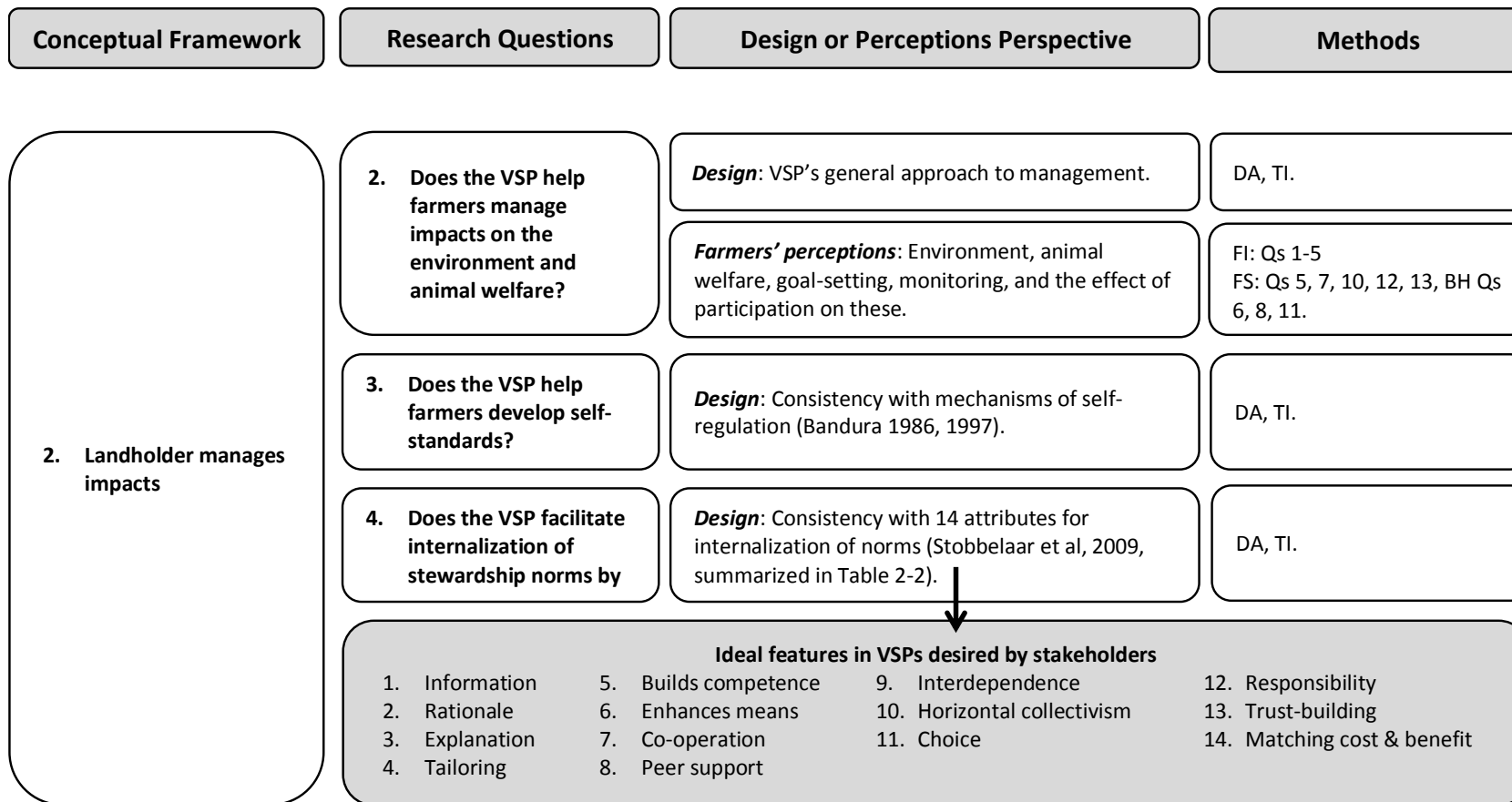


Figure 3.9: Summary of methodology – Part 2 – Research Questions 2-4

(DA=document analysis; TI=trainer interview; EI=external stakeholder interviews; FI=farmer interviews; FS=farmer surveys; BH=Bennett's Hierarchy)

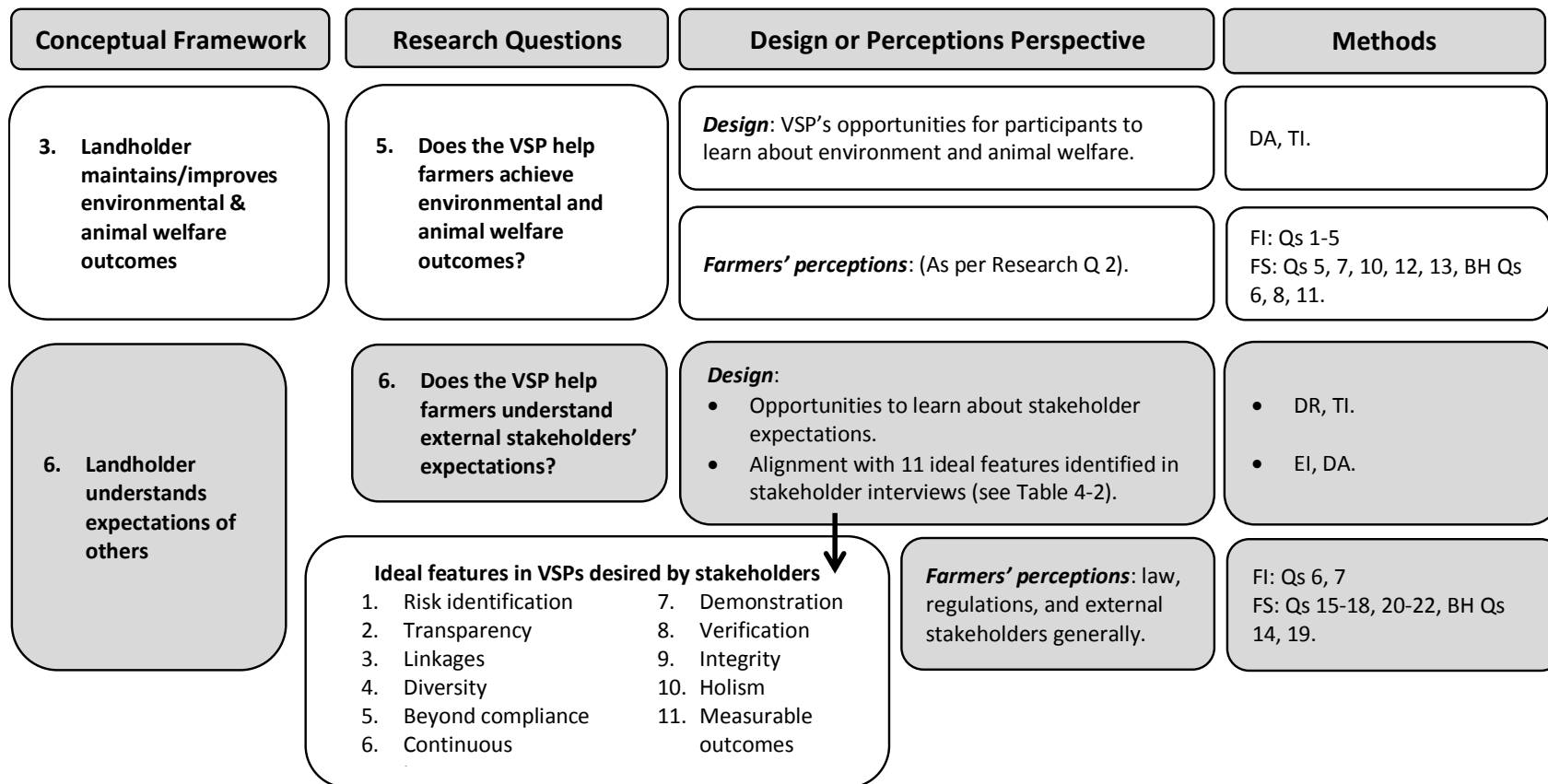


Figure 3.10: Summary of methodology – Part 3 – Research Questions 5 & 6

DA=document analysis; TI=trainer interview; EI=external stakeholder interviews; FI=farmer interviews; FS=farmer surveys; BH=Bennett's Hierarchy)

Conceptual Framework	Research Questions	Design or Perceptions Perspective	Methods
7. Landholder demonstrates outcomes	7. Does the VSP help farmers demonstrate outcomes?	<p><i>Design:</i> VSP's platform for demonstration and its integrity measures.</p> <p><i>Farmers' perceptions:</i> planning, auditing, certification, and demonstration.</p>	<p>DA, TI.</p> <p>FI: Q 8 FS: Qs 23-25, 27, BH Q 26.</p>
Benefits for: 4. The environment and animals 5. Others 9. The landholder	8. Does the VSP facilitate the creation of mutual benefits for non-farmers and farmers?	<p><i>Design:</i> VSP's platform for a transfer of benefits between non-farmers and farmers.</p> <p><i>Farmers' perceptions:</i> public and private benefits, and VSP's links with other programs.</p>	<p>DA, TI.</p> <p>FI: Q10 FS: Qs 9, 32, 33.</p>
8. Recognition by others	9. Does the VSP facilitate recognition by non-farmers of the reciprocal responsibility of stewardship?	<p><i>Design:</i> VSP's platform for recognition.</p> <p><i>Farmers' perceptions:</i> recognition.</p>	<p>DA, TI.</p> <p>FI: Q 9 FS: Qs 28-31.</p>

Figure 3.11: Summary of methodology – Part 4 – Research Questions 7-9

(DA=document analysis; TI=trainer interview; EI=external stakeholder interviews; FI=farmer interviews; FS=farmer surveys; BH=Bennett's Hierarchy)

3.4. Testing and Sampling

3.4.1. Testing

The interview and survey questions were initially reviewed with an AgLaw Centre colleague who had recently completed a major natural resources evaluation project involving in-depth interviews with farmers. Questions were revised and tested a second time with two colleagues, one of whom was a farmer, and finally they were tested with the CLM contact person (also a farmer).³²⁴ Changes were made as a result of feedback. The number of questions was reduced. The interview questions were made more open-ended to increase the interviewee's ability to set the priorities for discussion. Likert-type scales were added in the survey to allow more nuance. Feedback suggested the original questions were too subtle and likely to confuse. The original questions on elements 2 and 3 of the conceptual framework distinguished between 'managing impacts on the environment' and 'achieving environmental outcomes' but in the test phase this was perceived as duplication. Consequently, the tenor of the questions was simplified to a broad discussion of environmental issues and farmers' approaches to managing them.

3.4.2. Sampling

3.4.2.1 Selection of Cases

The sampling strategy followed Pettigrew's advice for selecting cases, which includes choosing highly visible cases, choosing cases with a long track record of experience with a process and choosing cases on the basis of who will co-operate with the research project, rather than on the basis of optimum sampling.³²⁵ Stake notes that, as a qualitative technique, the choice of case is not bound by the need for representativeness; the intention is learning and insight, rather than statistical deduction. Stake recommends choosing:

[T]hat case from which we feel we can learn the most. That may mean taking the one most accessible, the one we can spend the most time with ... Even for collective case studies, selection by sampling of attributes should not be the

³²⁴ The role of the contact person will be explained later in the chapter.

³²⁵ A M Pettigrew, 'Longitudinal Field Research on Change: Theory and Practice' (1990) 1(3) *Organization Science* 267, 275-7.

highest priority. Balance and variety are important; opportunity to learn is of primary importance.³²⁶

It was possible to achieve some homogeneity by establishing a set of case criteria, which a VSP needed to meet. Diversity was achieved by selecting contrasting enterprises, geographic locations and VSPs. The case criteria were:

- The VSP would be a non-government program. This was consistent with the definition of collaborative governance discussed in Chapter 1, which contemplates collaboration between government and non-government parties.
- The VSP would be ‘voluntary’; that is, participation was not mandated by public law, again in accordance with the notion that collaborative governance contemplates collaboration between government instruments of governance (including public law) and non-government instruments.
- The VSP would explicitly attempt to address public interest issues. Again, this references the discussion in Chapter 2. The primary public interest issue in this study was natural resource condition, but animal welfare was also included for reasons discussed in Chapter 2.
- The VSP would attempt to bridge the integrity gap identified in Chapter 1.³²⁷ Independent auditing was identified as a measure that might mitigate the integrity gap and engender trust and confidence in potential governance collaborators. Independent auditing is a strand of the larger process of certification in which the VSP’s managing body certifies that the participant has met the standard of the VSP upon verification by an independent auditor.
- The VSP would have a relatively long track record, in line with Pettigrew’s recommendations.³²⁸ A new VSP would not have the benefit of experience, may not have attracted many or any participants, and would be less likely to provide insights about the lag time between participation and observable effects discussed previously in this chapter.

³²⁶ Robert E Stake, 'Case Studies' in Norman K Denzin and Yvonna S Lincoln (eds), *Strategies of Qualitative Inquiry* (SAGE, 2nd ed, 2003) 152, 153.

³²⁷ See the discussion on the shortcomings of purely voluntary approaches to governance.

³²⁸ Pettigrew, above n 325, 275-7.

- The managers of the VSP and/or farmer participants would be accessible and willing to co-operate, in accordance with Pettigrew and Stake's advice.³²⁹ The research project needed to identify potential cases quickly, and the farmers participating in the VSP needed to be amenable to participating in the research. Securing the support of the VSPs and access to willing farmers required discussion and engagement, and an appreciation of the challenges farmers face in delivering environmental and animal welfare protections.

Combining these criteria, the targeted VSPs can be described as accessible, long-running, voluntary, non-government, environmental certification schemes for farmers. CLM was primarily concerned with dryland beef producers in the Maranoa district of south-west Queensland. This contrasted with irrigated broadacre cereal production in the Lowbidgee Floodplain (southwest NSW) for FOGG, and irrigated intensive mixed fruit and vegetable production for the two ACO interviewees from the Lockyer Valley of south-east Queensland and the Swan Hill district of north-west Victoria.

Appendix 8 sets out the similarities and contrasts of the cases, which are discussed in more detail in Chapters 5 and 6. Overall, a rich picture was expected to emerge from the contrast of dryland with irrigation; extensive with intensive; pastoral with cropping; a northern climatic influence (sub-tropical, summer dominant rainfall) with a southern climatic influence (temperate, winter/spring dominant rainfall); and highly developed and altered agricultural landscapes (irrigation and cropping) with less altered (pastoral).

As explained in Chapter 5, there was an opportunity for more intense investigation of CLM than the other two cases, though ACO and FOGG contact persons and participants were unfailingly generous and helpful. CLM is fundamentally different from ACO and FOGG. The latter two shared the common foundation of the national organic export standard. CLM is not an organic standard – it could be used by organic or conventional producers – and has an environmental management systems (EMS) foundation. In the case of CLM, it was possible to interview non-participants, which was not feasible in the other two cases. The CLM case study is the *primary* case study – it was the first to be designed and had the largest number of interviews – and thus

³²⁹ Ibid 275-7; Stake, above n 326, 152, 153.

influenced the treatment of the other two cases. For ease of analysis, the three VSPs are arranged into two case studies: a stand-alone case study of CLM, (involving both participants and non-participants); and a combined case study of the two organic cases (involving participants only).

3.4.2.2. Selection of Interviewees/Respondents

Selection of research participants from the three broad categories – VSP personnel, external stakeholders and farmers – followed a purposeful sampling strategy, where particular individuals are deliberately selected, as opposed to random sampling, where individuals are selected by chance.³³⁰ The aim was to select individuals from whom the researcher could expect to learn the most.³³¹ Purposeful sampling allows the researcher to acquire a rich and relevant data set, but individuals interviewed or surveyed cannot be regarded as representative. Purposeful sampling does not allow for statistical analysis; patterns are indicative only.

Unlike probability sampling, there is no metric for the optimum number of purposefully selected interviewees: ‘what is important is not *how many* you talk to, but *whom* you talk to’,³³² though Bernard and Ryan suggest interviews with 20 to 60 knowledgeable people is usually enough to explicate a social phenomenon.³³³ In this study, 31 people were interviewed.

The labour-intensive nature of qualitative analysis and the resource and logistical limitations of the research project required prioritization. In the case of VSP personnel, a decision was made to contact a CLM trainer for interview on the basis that CLM’s design was the most difficult to analyse through desk-top analysis of documents. In the case of external stakeholders, priority was given to stakeholder groups with an ostensible public interest charter, given that collaborative governance was defined in Chapter 2 as a sharing of governance roles for public interest outcomes. The public interests of relevance to this study were environmental protection and animal welfare. The selected stakeholders are described in Chapter 4.

³³⁰ Patton, above n 295, 230. Also called ‘purposive’ sampling: Bernard and Ryan, above n 279, 365.

³³¹ Patton, above n 295, 233.

³³² Cooksey and McDonald, above n 323, 466.

³³³ Bernard and Ryan, above n 279, 360.

Selection of farmer-participants in each VSP was facilitated by a contact person who was not formally interviewed as a part of the study. The contact person in each case had a high level of experience with the VSP, was very knowledgeable about its processes and standards, was familiar with the farmers targeted for interview and trusted by them. The contact person acted as a go-between for the researcher and the farmer-participants, which was vital in securing the landholders' confidence.

Before selecting farmers for interview, inclusion criteria were discussed with the contact person, who then contacted prospective interviewees. If the prospective interviewee indicated interest in participating, the contact person asked the prospective interviewee to phone or email the researcher to make arrangements. In the CLM case study, the contact person did the same for non-participants, based on his knowledge of farmers who knew about CLM but had declined to participate in CLM.

The inclusion criteria for selection were:

- Mixed demographic profile: mixed ages, women and men, small and large operators, and diverse management styles.
- *Within* each VSP, broadly comparable enterprises, though enterprises could differ *between* VSPs.
- Interviewees would have an on-ground role in farm management (no absentee landlords).
- The interviews could be with individuals or small management teams in the one interview, according to the interviewees' preference (e.g. husband and wife teams, or parent and children teams). However, each interviewee would complete the survey as an individual (no group surveys).

The contact person smoothed the process of recruitment immeasurably. Having the contact person personally introduce and recommend the researcher to prospective volunteers was critical to securing their trust and confidence, and reduced the time needed to identify and contact landholders.

Contact persons were close to the respective VSPs and could be regarded as supporters or champions of their VSP. Consequently, it was assumed that the contact persons would be inclined, consciously or unconsciously, to recommend farmers whom they regarded as good operators or positive exemplars of the operation of the VSP. This

was not a fatal flaw given the purposes of this study. Purposeful sampling does not aim to be representative: the selected farmers are not regarded as average participants or representatives of the VSP, nor of farmers in general. Insightfulness was more important than representativeness. The possibility that the farmers selected might be regarded as model VSP participants and better-than-average environmental performers was advantageous to the study, and relevant to the discussions in Chapter 2 on crowding-out of virtue-driven motivations and the non-neutral effect of law on non-target farmers.

Selection of non-participants for interview in the CLM case study was facilitated by the contact person, who was requested to nominate non-participants that he regarded as having a reputation for being good operators in an agricultural and environmental sense – in other words, the sort of farmer ALMG itself would like to see participate in CLM.

A summary of all interviewees and respondents, and the number of separate farm businesses canvassed is shown in Table 3.2. A more detailed breakdown is shown in Appendix 9.

Table 3.2: Interviewees, survey respondents and farms

Method	Unit of analysis	CLM Case Study			Organic Case Study			Grand totals
		CLM	Non-CLM	Total	ACO	FOGG	Total	
Interview	VSP personnel	1	--	1	--	--	--	1
Interview	Farmers	6	12	18	2	3	5	23
Survey	Farmers	6	11	17	2	3	5	22
No. farms		5	6	11	2	3	5	16
Interview	External stakeholders	Relevant to all cases						7
Total interviews		All categories						31

3.5. Conducting the Research

The conduct of the literature review has been discussed earlier. VSP documents were identified and obtained for document analysis. The CLM Manual and Monitoring Manual were obtained from ALMG and all other documents were available online.

Interview protocols and survey instruments were approved by the UNE Ethics Committee.³³⁴ In summary, the relevant conditions for the research were as follows:

- Informed, written consent of all interviewees/respondents was sought prior to conducting the interview/survey.
- All interviewees/respondents were promised that they would not be identified, other than by pseudonym.
- Recordings, transcripts, and completed survey hard copies are to be stored for five years in a locked cabinet or on a password-protected computer.
- The interviews were audio-recorded and transcribed. A copy of the transcription was returned to each interviewee, who was invited to correct mistakes in the transcription.

When confirming the interview arrangements with each interviewee by phone or email, the aims of the study and the interview/survey procedure were explained. Before each interview, interviewees were provided with an information sheet and consent form.

For each farm business one interview was conducted. Allowance was made for one-on-one or several family members simultaneously.³³⁵ The potential risk of bias in group interviews (where interviewees are influenced by the presence of other interviewees) was considered small compared with the richness of responses that might emerge.

With one exception, all interviews were face-to-face at a place of the interviewee's choosing. The exception was an interview with a researcher (part of the external stakeholder category), which occurred by phone as a matter of convenience to the interviewee. Farmer interviews usually occurred at their kitchen tables but in two cases in a local café. Interviews for the CLM trainer and the other external stakeholders occurred at their offices. All interviews were audio-recorded.

Interviewed farmers were given the option of completing the survey in the researcher's presence after the interview, or completing it at their leisure and posting it later. Except

³³⁴ Approval numbers HE13-204 and HE13-260.

³³⁵ This explains the difference between number of farmers and farms in Table 3.2.

for one husband and wife team who posted it at a later date, all other respondents to the survey elected to complete it in the researcher's presence immediately after the interview. This probably accounts for the high response rate (22 out of 23 farmers interviewed).³³⁶ In five cases, respondents requested that the researcher read the survey questions aloud to them and record their responses, and such requests were recorded on the audio-recording.

The interview with the CLM trainer lasted for nearly three hours, and those with external stakeholders about an hour. Interviews with farmers lasted about an hour to an hour and a half, and completion of the survey a further 40 minutes to an hour. The completion of the survey took longer than anticipated in the test phase because all respondents approached the task earnestly and gave much consideration to their answers.

3.6. Data Recording, Storage and Analysis

3.6.1. Document analysis

VSP documents were analysed by reviewing them against the elements of the conceptual framework and associated research questions. This was automated to an extent for the softcopy documents (e.g. the ACO and NASAA organic standards), which were uploaded to a qualitative analysis software – MAXQDA – for archiving, coding and retrieval.

3.6.2. Interviews

Audio-recordings of all interviews were transcribed by professional transcription service, proofread and forwarded to the interviewee for correction. All transcripts were uploaded into MAXQDA for archiving, coding and retrieval. The transcript of the interview with the CLM trainer was open-coded (i.e. no pre-set structural codes) according to the issues and processes that arose in the course of the interview. The transcripts of the interviews with external stakeholders and farmers were coded into

³³⁶ See Edith D de Leeuw and Joop J Hox, 'Self-Administered Questionnaires: Mail Surveys and Other Applications' in Edith D de Leeuw, Joop J Hox and Don A Dillman (eds), *International Handbook of Survey Methodology* (Lawrence Erlbaum Associates - Taylor and Francis Group, 2008) 239, 240-241.

themes broadly following the coding process described in Bernard and Ryan.³³⁷ Firstly, the coding was arranged around a set of structural codes, as follows:

- For external stakeholders the structural codes comprised their perceptions of the public interest problem (e.g. environmental or animal welfare), the public policy dimensions of the problem, the potential roles and limitations of VSPs in dealing with the problem, and the ideal features of a VSP.
- For farmers, the structural codes corresponded to the general set of interview questions.³³⁸

Within each structural code, theme codes were developed using an open-coding approach – that is, codes and sub-codes were added to the codebook as new themes were encountered in the data. Codes and themes were then reviewed for linkages, consolidated, and organized into conceptual clusters or major themes. Finally, instances were selected from the transcripts that illustrated major themes.

3.6.3. Survey Data

All survey data were transferred to excel spreadsheets for analysis. The basic demographic and enterprise information was subjected to simple counts, consolidated and described for each case study. General perceptions of the elements of the conceptual framework were analysed as counts and simple majorities, consolidated into three groups – CLM Participants, non-participants, and organic respondents (ACO + FOGG). Given the small data set and non-probability sampling strategy, no further statistical analysis was conducted.

The modified Bennett's hierarchy profiles for all survey respondents were consolidated for each cohort. The NEP scores were calculated using the method described in Hawcroft and Milfont,³³⁹ and averaged for each cohort. The whole NEP data set was tested for internal consistency (Cronbach's alpha) as per Hawcroft and Milfont,³⁴⁰ using SPSS Statistics software.

³³⁷ Bernard and Ryan, above n 279, see chs 3 and 4, 53-105; see also W Lawrence Neuman, *Social Research Methods - Qualitative and Quantitative Approaches* (Allyn and Bacon, 5th ed, 2003) 441-447.

³³⁸ See Appendix 2.

³³⁹ Hawcroft and Milfont, above n 315.

³⁴⁰ Ibid.

3.7. Reporting of Results

Results are reported in Chapters 4, 5 and 6. Chapter 4 records the analysis of the external stakeholder interviews. The views of each stakeholder are discussed first and then the analysis culminates in a set of 11 ideal features that, in the study's interpretation of the data, are seen by external stakeholders as essential conditions of their support. These were used in the evaluating the extent to which the design of each of the three VSPs helps farmers understand external stakeholder expectations (Element 6 of the conceptual framework and Research Question 6).

Results of the CLM case study appear in Chapter 5 and of the organic case study in Chapter 6.

CHAPTER 4: EXTERNAL STAKEHOLDERS' PERCEPTIONS

The chapter comprises three sections:

- Section 4.1 Provides a summary of how each interviewee framed the problem of environmental and animal welfare governance on farms, their thoughts on the roles for VSPs to advance their objectives, as well as the potential for collaboration between their organizations and VSPs such as CLM and organic certification.
- Section 4.2 Consolidates a list of ideal design features that external stakeholders would expect to see in VSPs. This list is used in Chapters 5 and 6 as a set of criteria against which the designs of the selected VSPs are evaluated.
- Section 4.3 Draws some overall insights from the external stakeholder interviews.

4.1. Summaries of Stakeholder Interviews

Seven external stakeholders from groups with a public interest character were interviewed for this study, as follows:

- Kirsty,³⁴¹ a representative of a major Australian animal welfare NGO, who had a professional interest in farm animals and knew of CLM.
- Eric, a representative of a major environmental NGO with national and international operations. Eric had a professional interest in the impacts of agriculture on iconic ecosystems and knew of CLM.
- Kevin, a representative of the Queensland Murray-Darling Committee (QMDC), the regional NRM body for the Maranoa district (where CLM case study farmers operated). He was recruited by approaching QMDC directly for a nominee.
- Two Commonwealth government officers: Will, whose roles focussed on biodiversity and nature conservation under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act'); and Adam, whose job

³⁴¹ Names for all interviewees are pseudonyms.

involved liaison between the government and the agricultural sector on natural resources issues. They were sourced using AgLaw Centre contacts.

- Two academic researchers involved in researching impacts of agriculture on ecosystems: Damien, a river ecologist with expertise in the impacts of irrigation systems on riverine ecology, and Cameron, whose interest was in using VSPs as a tool of water resources governance.

Table 4.1 summarizes the external stakeholder interviewees, and key issues from each interview are discussed below.

Table 4.1: External stakeholders interviewed

Name	Stakeholder group	Interviews (no. persons)
Kirsty	Animal Welfare NGO	1
Eric	Environmental NGO	1
Will and Adam	Commonwealth Government – environment- and agriculture-related	2
Kevin	Regional NRM body	1
Cameron and Damien	Academic researchers – water and environmental governance	2
Total		7

4.1.1. Animal Welfare NGO

Glasgow summarizes some of the distinctions in the animal interest debate; for example, between animal welfare ‘concerned with the humane regulation of animal use’ and an animal rights approach that accords animals legal personhood, as well as other approaches, such as care ethics, an eco-centric perspective that favours the integrity of ecological functioning over individual animals, and Nussbaum’s capabilities approach.³⁴²

Kirsty’s organization was one of a number of Australian civil society groups that have a position on animals on farms. Hers took a welfare perspective and her professional responsibilities related to animal welfare on farms. She was familiar with CLM.

Kirsty distinguished animal health from animal welfare:

³⁴² David Glasgow, 'The Law of the Jungle: Advocating for Animals in Australia' (2008) 13 *Deakin Law Review* 181, 186-188, 191.

Often you'll hear the comment that farmers say that they do the right thing ... If you don't have an animal in good condition, that's treated well, then it's not going to produce for you. That might well be the case in some instances, but in other cases you could have a reasonably healthy animal, but welfare could be poor ... The two don't always go together.

Her main welfare focus in relation to cattle was avoiding pain for the animal, via medicinal pain relief or gradually phasing out the painful practice altogether (e.g. phasing out de-horning by introducing poll genetics). Kirsty's organization has an aspirational statement, setting out its expectations of beef producers over the long term. She suggested that the continuous improvement paradigm is highly compatible with the aspirations statement, because her organization did not expect cattle producers to implement all provisions of its aspirations statement immediately – it could occur in a staged process, with a plan for action over time:

There's a realisation it needs to be achievable. There are some schemes that are beyond compliance to the extent that you're just focusing on niche markets and that's not what I'm talking about at all. I'm still talking about the majority of producers being able to achieve this and a means of getting rid, or raising the bar, in that bottom 5%, rather than setting your scheme so that the bottom 5% can achieve it too.

The aspirations document is a way of informing the cattle industry of the issues her organization intends targeting in the future: 'research needs to be focusing on addressing those areas where the risk of rejection is highest'.

The priorities of Kirsty's organization lie more with intensively farmed animals – laying hens, meat chickens and pork – than grazing livestock. In her view, the grazing industries have serious welfare issues to confront but are generally not as risky as the intensive industries. Furthermore, there is a resourcing problem: cattle production is widely dispersed across the country, sometimes in remote locations, with many types of husbandry practices (e.g. castration and dehorning) occurring at different times, which made it difficult to monitor.

The organization has its own voluntary schemes for the intensively farmed animals where farms are approved as compliant with the organization's standards. This involves initial assessment, formal approval, twice-yearly audits, and a marketing logo

referring to the organization. At the time of interview, the assessors are paid by Kirsty's organization rather than by the farmer. In any case, often it is not the farmer who instigated the process but the retailer.

In the case of the extensive animal industries, such as grazing beef cattle, the organization did not at the time of interview have any approved-farm scheme, though Kirsty reported some demand from producers. In the meantime, the organization developed a kind of competition for cattle producers, in which producers demonstrate how they are meeting the provisions of the organization's aspirations statement, culminating in a public awards ceremony. At the time of interview, the organization played no direct role in assessing compliance with its beef cattle aspiration statement, but there may be a role for schemes outside the organization to take on that function.

In Kirsty's view, there are increasing pressures on suppliers to incorporate multiple values – environmental and animal welfare – into their products, but she challenges the way agricultural produce is valued and marketed:

One would hope that in the future what we're talking about now is basically conventional production in Australia: that everything is ethical and sustainable and responsible farming, essentially. That's what I would hope for. All this sort of commodity-based farming that we do now, that everything has to go out in bulk and it's basically just beef and it's going out, we need to stop doing that. Everything that goes out is valued and valuable.

She lamented the possibility that numerous brands would multiply confusion, as well as burden producers with multiple schemes and auditing requirements. It is possible for an already existing program such as CLM to include an animal module consistent with the provisions of the aspiration statement, without requiring formal recognition from her organization. If formal recognition were desired, Kirsty was open to the possibility of collaboration with other voluntary programs to streamline the on-farm auditing process, but her organization proceeds very cautiously to guard its reputation. Instead Kirsty suggests there is a need for a broader collaborative project looking at a credible joint brand incorporating a suite of values. The actual mechanics of such a scheme were difficult to articulate, but she regarded CLM as forward-looking in this regard.

4.1.2. Environmental NGO

Eric was an employee of a global environmental NGO, with a local Australian branch. His professional responsibilities related to the environmental impacts of grazing animal production, and he was familiar with CLM. Eric's NGO is involved with an international alliance looking to develop an internationally recognized approach to sustainable beef production. The beef alliance includes globally significant corporate brands, as Eric explains:

[W]e need to have a recognition globally of a system and the reason being that is that our biggest customers, take McDonalds for example, buy 180,000 tonnes of beef, that's ten times more than we sell to Europe out of Australia. They buy beef globally and they want to be able to tell consumers that, 'We buy beef that is responsible, ethical, sustainable' ... and know that it meets a global framework ... Will it look like FSC, MSC?³⁴³ Probably not. Will it play a similar role? Hopefully.

Eric's organization had a policy of not lending its logo for direct endorsement on a commercial product, so it not involve itself in marketing the processes coming out of the international alliance. Instead, it worked with the alliance, 'so that when they endorse a system it is environmentally credible'.

Like Kirsty, Eric has a view on valuing the product Australian farmers produce and how an Australian marketing strategy should position itself:

[W]e have to start valuing the way we produce products and systems like CLM, the other companies [in the international alliance]; start finding a way to value the way we produce it, not just what we produce.

For Eric, the focus of stewardship programs should be on the wide swathe of middle to lower environmental performers in the beef industry, not the top performers. Eric argued this target audience needs a simple approach, rather than what he regarded as the niche approach of CLM that, in his view, was more complex, costly, process-oriented, and suited to higher environmental performers. In Eric's view, his

³⁴³ Forestry Stewardship Council, Marine Stewardship Council.

organization's preference is for the low-bar-high-numbers strategy, whereas CLM (in his view) uses high-bar-low-numbers strategy:

We want to find motivators to change poor management and recognition in the market is hopefully one of those motivators, but doing a costly system, a long-process system isn't going to attract the bottom end we want to change, because we know that's the end that's impacting.

For his organization, a performance measure is preferable to a process strategy for the poorer performers, and he regarded the land condition scoring system previously developed in the *Grazing Land Management* package as sufficient to meet the objectives of his NGO, whereas CLM:

[I]t's well ahead of where a global standard needs to be ... Whenever an accreditation system comes in, it will get a tick.

Eric's NGO tackled sustainability in agriculture using a specific sector approach. When asked about the benefits of CLM's whole-of-farm approach and the risks of fragmenting the operations on a single farm into separate sectors, Eric was unapologetic. While not discounting the value of a whole-of-agriculture approach, his organization has positioned itself pragmatically, seeking to influence – and use the influence of – the big global players:

[I]n terms of getting things happening quickly and fast and working with the markets, so McDonalds aren't hiding from the fact they're driving a lot of this. They want to be buying responsible beef and they buy beef, they don't buy beef *and* grain, they buy beef and then they just buy their bread from somewhere else.

Eric explains the unique influence of these players in the beef industry:

The beef industry's slightly different [from other sectors], because we don't pool the commodity. Once the carcass gets cut up, a little bit of it goes to McDonalds ... If they want their cheapest part of the carcass ... to be responsible, then everything has to be responsible; which makes it a really interesting game to play, because you can get a lot of market pull by one or two players ... [McDonalds are] such big buyers of the small part of the carcass that it's almost every beef producer would have to be accredited to play in their space ... it's a big market power they have.

Eric did not dismiss the potential for collaboration on environmental governance between his organization and CLM:

[W]e would love to work with niche groups and we work with groups like these in developing case studies ... I really don't want to make it sound like we don't support and want to work with CLM.

In Eric's view, the two organizations are tackling a common goal from different ends of the spectrum of environmental performance in the beef sector and CLM's approach is as good if not better in Eric's view than other approaches in the cattle sector, such as *Grazing Best Management Practice* (GrazingBMP).³⁴⁴ Like Kirsty, Eric noted that consumers are looking for a suite of values in beef:

[O]ur retailers are telling us, 'We don't buy environmentally sustainable beef, we buy a responsibly, ethically produced beef and our consumers expect animal welfare to be part of that'.

... and in Eric's view, CLM is a leader in this regard.

4.1.3. Regional NRM body

Kevin was an officer of QMDC and was familiar with CLM. According to its website, QMDC is 'a community-based, not-for-profit organisation that delivers NRM and environmental services across the Queensland Murray-Darling Basin'.³⁴⁵ It is the body through which the Commonwealth channels a major portion of its direct public investment in rural NRM.³⁴⁶

In Kevin's view, the problem of NRM in Australian agriculture starts with the natural and induced agronomic limitations of the resource base, including nutrient deficiencies in the soil, carbon levels and soil biological activity. Australian agriculture has

³⁴⁴ Under development at the time of interview: GrazingBMP, <<https://www.bmpgrazing.com.au/#&panel1-2>>.

³⁴⁵ QMDC, *About QMDC* <<http://www.qmdc.org.au/about-qmdc.html>> .

³⁴⁶ It should also be acknowledged that most NRM on farms is resourced and funded by farmers themselves: J Williams, 'Tamar Valley Farmers Public Good NRM Contributions 2011-2012' (Australian Centre for Agriculture & Law, 2015); P V Martin, J A Williams and C Stone, 'Transaction Costs and Water Reform: The Devils Hiding in the Details' (Technical Report 08/08, CRC for Irrigation Futures, 2008).

operated on an extractive paradigm rather than a regenerative or conservation paradigm:

Australia has a history of ... sophisticated shifting agriculture. We just put a level of sophistication on shifting agriculture. If you look at our history, we've been able to stay in a region for 70 or 80 years.

... which leads to a downward spiral:

We extract the goodness out of the soil from a cropping use, that also then goes to a grazing use that goes to a marginal grazing use. That goes to a grazing use where landholders are really struggling economically, where most of them are in negative. The only thing that's keeping them afloat is the real estate boom. That boom is over ... [T]he drought has triggered that ... and we've got equity dropping 30 and 40 per cent and we have suicides and we have a lot of social consequences from that.

Natural climate variability will in Kevin's view be exacerbated by climate change. The public institutions to help manage the public risks are declining:

[T]he traditional extension provision has evaporated with the State agencies.

The unique circumstances of rural natural resource management means it is hard to maintain a strict distinction between public interest environmental problems and private interest commercial problems, nor between public and private interest solutions:

[W]e have funded some non-traditional sub-catchment activities ... An example is telemetry with our watering points. Now normally we have these watering points and then you say, 'Well telemetry, so that's more for the benefit of the landholder'. Well it is but the reality of the situation is there is not as much labour now as there used to be and if a landholder's going to give us a good NRM outcome, he's going to need time to do that instead of spending half his day checking his waters. So you've got to take a slightly wider vision of this private/public benefit.

QMDC had a close relationship with ALMG in the construction and evolution of CLM because the EMS basis of CLM was considered complementary to the objectives of QMDC:

[T]he idea of managing risk on properties was the reason we wanted to go down the EMS line but also we wanted some accreditation, so needed it to be ISO compliant.

Over the course of the interview, Kevin touched on four areas where he believed CLM complements the objectives of the regional NRM body:

1. Though CLM works at the level of the individual and was not of itself a catchment planning process, it was entirely compatible with QMDC's catchment planning, which aimed to facilitate collective action across landscapes at a scale larger than individual farms.
2. CLM acts as a demonstration framework.
3. CLM may not as yet attract a market advantage but that is because markets are content to externalize environmental degradation, and CLM helps landholders manage externalities. In Kevin's view, CLM did this better than other initiatives such as *Grazing BMP*, which, in Kevin's view, 'makes no pretence of trying to identify the individual property's risk'. Similarly, in Kevin's view, *Grazing Land Management (GLM)*³⁴⁷ does not have a process of identifying environmental risks as good as the EMS process embedded in CLM. However, CLM and GLM are entirely complementary in Kevin's view: CLM helps a landholder identify risks and, once identified, GLM provides practical, on-ground techniques to ameliorate the risks.
4. CLM builds capacity in landholders, allowing them to overcome constraints to innovativeness:

[I]t brings some of the guys who are thinkers but have constraints, be it time, be it money, be whatever. It allows those sorts of guys to move into the innovator group of landholders. So I think it's a good succession planning of landholders.

Time and cost were cited by Kevin as barriers to participation in voluntary stewardship, though he was sceptical about their merit as excuses:

³⁴⁷ For more details, see *Grazing Land Management* (15 June 2015) <<https://futurebeef.com.au/knowledge-centre/grazing-land-management/>>.

I find that a hard one to swallow because if that's your business and your property's worth many millions of dollars, you think you'd get up to date with the latest standards but anyway, that's been put up as a limitation.

In Kevin's view, for better NRM and governance on farms, collaboration was imperative amongst regional NRM bodies, government, industry, commercial supply chain players, and VSPs. Regionalism could be a vehicle for such collaboration and various public interest issues and marketing angles could be accommodated, such as food safety, green miles, buying local and buying healthy. For Kevin, it was the very fact that CLM attracted progressive landholders despite the lack of immediate market advantage that made CLM and participants ideal collaborative partners:

[M]ost of the landholders that are doing [CLM] ... are leaders in their own little area and like the logic, like the thinking element of it ... [I]t's a much more rigorous process and so the people that do this are ... less likely to be money-grabbers because they have to commit time and effort to do this.

This suggests that participation could act as a filter for prospective governance collaborators, such as government or regional NRM bodies, when seeking out individual farmers and groups to form partnerships within collaborative governance arrangements.

4.1.4. Commonwealth Government

Will was a Commonwealth officer concerned with biodiversity, nature conservation, and the operation of the *EPBC Act*, which is the Commonwealth's central piece of environmental legislation, providing 'a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places'.³⁴⁸ Adam's job involved liaison between the government and the agriculture sector on natural resources issues.

In separate interviews, Will and Adam outlined a number of challenges for governments in governing and managing natural resources in Australia. Adam raised the complexity for citizens of dealing with multiple layers of governance:

³⁴⁸ Department of Environment (Cth), *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* <<http://www.environment.gov.au/epbc>>.

[T]he less you know about government the more confusing it is, the triple layers of representation. Stakeholders can just think of government as just one entity, and often will have a state issue or a commonwealth issue and don't know which is the best department to represent it.

Native vegetation was a typical example for Adam:

[I]n the native veg space, there is double listings, listing at a state level, listings at a Commonwealth level, two different agencies working two different things, different acts, overlaying acts, different relationships between acts and different compliance responsibilities and connections that can be really confusing.

This complexity is a barrier to engaging with landholders:

And often if it's too confusing they won't engage. Sometimes in the water space – there can be three or four different water agencies dealing with water at a Commonwealth space, and then there's state on top of that. Very confusing, and seeing that as a stakeholder, where do you engage?

Will confirmed the capacity of government to monitor for compliance and breaches is limited:

We monitor what farmers are doing if we provide them with a grant, or if, in the extremely rare instance that someone did refer an agricultural activity under the Act, and we have conditions on that, then we might monitor the conditions, but we don't as a general rule monitor. On the one hand, we'd be pleased to hear that landholders were even trying. That'd be a positive in itself, but the reality is that we wouldn't be following up on it.

Both government officers highlighted the general and seemingly inexorable decline in government funding for NRM. Will reflected on a potential role for voluntary programs in this environment:

[T]here's no doubt that we're entering a period where there will be less Commonwealth Government funding available for biodiversity initiatives and NRM work and that's continuing on a trend that's been happening over a number of years, so I'm very interested in the potential for these voluntary schemes helping. The problems aren't getting any smaller, but the resourcing is becoming more and more challenging.

However, Adam highlighted the need not to under-estimate the resources necessary to allow voluntary programs to add value to regulatory processes:

I really like the aspects of voluntary programs, I think there's a lot of value to them. It needs a long term vision for these programs to be in place, long term funding, surety and assistance ... It also needs to be in conjunction with compliance regimes I imagine. And it has to be on a state and Commonwealth level.

4.1.5. Academic Researchers

Cameron combined research expertise on water resources and involvement with the development of a voluntary program for large-scale water users called water stewardship, which at the time of the interview, was still under development and not open for general participation, though it was being pilot-tested in the dairy industry. Cameron highlighted the political trade-off at the heart of the three pillars of sustainability:

Clearly if you are ploughing up some floodplain you're ploughing up some biodiversity ... and there's a value judgement to be made by society in terms of how much of those floodplain eco-systems we want to keep versus how much we're willing to sacrifice.

He was sceptical about the prospect of governance that relied on landholders' voluntary action alone, and circumspect about an unqualified concept of co-regulation:

Clearly co-regulation is a spectrum from those that are just greenwashing ... through to the sort of system ... where there is the potential for an agricultural sector to be able to describe and measure changes in behaviour from their members on the ground ... So I guess there's co-regulation and there's co-regulation. And being somebody who loves a bit of regulation I favour the tougher end of the spectrum.

Government regulation was the default position for Cameron:

I've worked as an environmental advocate for a lot of my career and so I'm always in favour of regulation; I love regulation.

But he recognizes the limitations of regulation, especially in implementation:

The regulatory schemes though clearly have difficulty in being implemented as precisely as we would all hope on the ground. And I talked earlier about ... regulations that were simply ignored and not enforced.

In Cameron's view, VSPs should augment rather than replace regulation, working with a range of motivating factors, including peer pressure, social licence, and farmers' internal motivations. Social licence and law interact over time, shifting the perception of the behaviours the law should encompass. VSPs are a vehicle for gradually tightening standards and improving overall environmental performance over time:

[H]opefully it lowers compliance costs for government but more importantly can provide the justification for governments to raise the bar on those that don't meet the standard.

Talking about his role developing a water stewardship standard, Cameron noted the aim is to develop a consistent international normative voluntary framework that can be adjusted to account for national idiosyncrasies, and that should provoke or encourage participants to go beyond compliance with regulation, 'where regulation is a minimum standard that everybody much achieve'.

From his experience working on other stewardship programs, such as marine stewardship and forestry stewardship, creating a price premium for compliant producers was not the main market advantage:

[T]he benefit for the growers or producers tended to be in having longer term supply contracts with processors or retailers.

Voluntary stewardship can potentially provoke collective action where a whole sector is dependent on members' compliance, as evidenced in marine stewardship certification:

In the fishing sector they have tended to certify a whole fishery, so the Western Australian Rock Lobster Fishery is certified, not Joe Smith's cray boat. And so that's created an incentive for the whole fishery to get together and lift their game.

Water stewardship – like the other global stewardship initiatives overseen by international environmental NGOs, such as forestry stewardship and marine stewardship – is not directed at small-scale individual producers. In the irrigated dairy sector, the milk processing factory would, in Cameron's view, be an appropriate

mediator between the water stewardship program and individual farmers, and the factory could use its scale and bargaining position to utilize its water stewardship status in commercial deals that would benefit individual producers. At the same time, water stewardship would complement, not replace, the regional NRM process by linking farmers to their regional body's planning instruments.

While Cameron is convinced of the value and effectiveness of rigorous VSPs, he challenges the assumption that they constitute a cost-saving measure for government and industry:

There's often a thought in the minds of some industry or government that these sorts of voluntary schemes are going to be quicker and faster without the bureaucracy of government ... But the reality is they take years to build up the knowledge, the buy-in to be established and it takes a lot of money to do these things, they're not a quick fix.

Damien was a researcher in river ecology, and was familiar with the ecology of the Murrumbidgee River, one of the most hydrologically regulated rivers in Australia. His view of the system of the FOGG landholders interviewed for this study was mixed: he was positive about its operational side but negative about its early days in the 1980s. He agreed that the system links biodiversity and commercial production and that the FOGG landholdings are magnificent reserves for waterbirds. However, the initial phase of irrigation development, combined with less flow coming down the river because of upstream development and extraction for agriculture, had significantly changed the natural vegetation systems and hydrological patterns. The complexity and richness of the natural system has been replaced with a simpler and less diverse substitute. He is unequivocal about the damage caused in the conversion from grazing enterprises to irrigated crops:

[M]y overall view is that the development that occurred was detrimental to the system and detrimental to the waterbirds.

He acknowledges the connection and sense of place that the landholders have to their land:

They also do seem to have a strong affinity with the waterbirds and the wetlands... They obviously do care about the environment ... They see themselves as being stewards of the environment.

However, the dissonance between their intrinsic environmental values and their hard-nosed economic outlook was hard to ignore:

I don't think they're able to really reconcile what they've done to the system and their positive views about the environment.

In Damien's view, this is a function of misunderstanding about the fragility of ecosystems, the production-oriented worldview of commercial farming, and economic pressures and government policy that drove the FOGG landholders in their belief that they had to develop their land and water resources, or lose them:

I don't blame them. I think there are huge cultural drivers and subsidies by government. For start in particular that system was driven by a water agency and a new individual in the water agency who wanted to develop a system for irrigation ... [T]he critical ingredient for [the FOGG landholders'] living is being developed upstream, so they were getting less water and they were still paying more on their rates because they were on flooded land. So there was a whole range of drivers that inevitably pushed them down that path.

This negative view of the initial phase contrasts with a positive assessment of the operation of the FOGG system compared with any other system of irrigated cropping that the landholders might have adopted. In other districts, irrigators hold water in large, deep impoundments, which are efficient for storage and prevent evaporation losses but are poor in terms of biodiversity. Unlike conventional large-scale irrigation systems around Australia, FOGG landholders did not store large volumes of water in classic dams. After it flooded their fields:

They would move it down the system. They don't actually have any storages. They have a complex channel system and when the water does come down, and the natural floods that occur as well, that's the way they manage it.

When compared with other irrigation systems, the FOGG system was:

I think undoubtedly better than the other irrigation systems I'm aware of. We do aerial surveys over large growing areas. We do aerial surveys over cotton

growing areas and there'd be no comparison between the way water is managed and irrigated in those areas in terms of large open storages or very shallow rice growing areas, which provide no real habitat for waterbirds at all. And presumably for all the other things that are important in the environment.

This style of flood irrigation was criticized in some quarters as being inefficient, but in Damien's view, these criticisms do not take into account the ecosystem benefits of the FOGG approach, which would have been lost in a conventional system focussed purely on water-use efficiency:

They were getting a lot of criticism for using a lot of water as I understand on their crops. But that had a positive benefit on the water birds and the ecology because the water stayed around for a long time and created enough of an ecosystem.

The ecosystem benefits of the FOGG operations are a product of a combination of factors. In addition to the topography of the floodplain and the unique irrigation process, Damien mentions the organic farming system:

[T]he environment they were irrigating is a lot more complex in terms of an irrigation area, therefore much, much richer in terms of food items that were there, probably because there's less chemicals and because they left the water on for longer. So we regularly find very high densities of water birds on those irrigation bays, much higher than anywhere else where there's irrigation.

... combined with the values of the landholders:

[M]ost of those people have a strong environmental affiliation. They do watch and observe the environment and they're very knowledgeable about timing and in a sense, because they're there all the time, they notice things that are happening. I think some people that observe nature tend to think more deeply about sustainability in nature than people who don't have that affinity and don't really care about it.

As a general public policy principle, Damien agrees with the notion that we should reward good environmental performers and sanction the bad, and certification conceivably could play an important role in that regard:

There is less government money coming into biodiversity and I do think we need to try and incentivise farmers and reward them for good practice. I think currently we don't do that very well ... So I think if we have better certification that can then feed into marketing so that farmers do get rewarded financially for good practice, I think that's really, really important. Equally, we should be making sure that those farmers who don't have good practices, are penalised in some ways. I'm not saying in a punitive way, but in the market for not producing a sustainable model.

Organic certification is, therefore, positive in terms of environmental management in the operational phase of an agricultural enterprise but it has limited ability to prevent ecological damage in the development phase. In his view, it is a good system for the operational phase of agricultural enterprises, but is reactive; that is, it is not able to prevent the significant ecological damage that occurs around major enterprise shifts:

[T]here was a big, fat footprint down on that land. I mean it was completely restructured and reformed and the channel changed, the flow regimes were changed. We don't really know how much that affected feeding and breeding, but given the significant decline, it's obviously made a major impact ... I think organic certification is a good context. I just would like it to be more broad so that it's about environmental stewardship as well and we work out standards and metrics that help identify whether it's working or not.

Like Cameron, Damien reflects on the political trade-off implicit in so-called sustainable development:

I think inevitably there is a win/lose equation with irrigation because the waters are dictated for irrigation are primarily water that the environment will use in a floodplain. Therefore, it depends how much irrigation you want and how much environment you want to lose, is as simple as that.

4.2. Ideal Features of a Voluntary Program

Over the course of the interviews, stakeholders highlighted integrity and governance features that they believed should be incorporated into VSPs for farmers, and these have been consolidated in this part into eleven ideal design features, as per Table 4.2.

Table 4.2: Features of VSPs desired by interviewed stakeholder

Ideal feature	External stakeholder				
	AWNGO	ENGO	RNRM	G	R
1. Helps landholders identify risks			X		
2. Transparency	X	X			
3. Links to other governance measures			X	X	X
4. Incorporates diverse views					X
5. Beyond minimum compliance	X	X			X
6. Continuous improvement paradigm	X				
7. Framework for demonstration	X				
8. Independent verification	X				X
9. Integrity of auditing	X				
10. Holistic – spatially and temporally				X	X
11. Measurable outcomes		X			X

(AWNGO= animal welfare NGO, ENGO=environmental NGO, RNRM=regional NRM body, G=government officers x 2, R=researchers x 2).

The ideal design features were used in the analysis of VSP design in the case study chapters to follow. The features are drawn from individual interviews and are not claimed to be representative of interviewees or all external stakeholders. Not every stakeholder interviewed raised every issue. Therefore, the list of features is not presented as a universal account of external stakeholder expectations but as a non-exhaustive wish-list of the possible considerations from a range of external stakeholders. The features are not listed in any particular order of importance in Table 4.2.

Helping Landholders Identify Risks

For Kevin, a key to improving environmental outcomes of farms was ensuring farmers had:

[A] way of organizing information whereby you could identify what the environmental risks were but potentially take that further and quantify that economically and putting the context of environmental risk into the overall property management context.

Transparency

For Kirsty, the aim of transparency is to engender community trust, and the hallmarks of transparency include openness to scrutiny and frankness about the production

systems, especially about the difficulties of meeting stakeholder expectations. Certification schemes with a continuous improvement approach are useful because meeting expectations can be a long process. Eric noted that transparency is a way of being on the front-foot, as a lack of transparency leaves space for detractors to fill the gap.

Linked to Other Governance Measures

For Will and Cameron, VSPs should complement the existing regulatory regime, and be consistent with the policies and guidelines established under that regime:

[A] good scheme should also be linking with and reinforcing good quality public natural resource management institutions³⁴⁹

Kevin spoke about the need for voluntary programs to fit within an integrated governance trilogy of education, incentives and regulation.

Going Beyond Minimum Compliance

Kirsty, Eric and Cameron saw legislated requirements as the default position or minimum standard for environmental conduct:

[R]egulation is a minimum standard that everybody must achieve ... [E]xisting regulation is the minimum standard but a good standard should be going beyond regulation and rewarding innovation. So this is about showing what can be done, not minimum compliance.³⁵⁰

Involves a Diversity of External Stakeholders

Whilst law and regulation are within the governance domain of government, social licence is the domain of alternative regulators, such as civil society, market and media. In Cameron's view, the interests of these stakeholders must be acknowledged by VSPs, if they want to be taken seriously:

[I]t's about managing risk and social licence to operate. So one basic thing is that it actually has to meet the needs of key stakeholders outside of industry. So it can't just be industry self-regulation, it has to be a negotiation with key stakeholders in the industry about what the standard should be.

³⁴⁹ Cameron.

³⁵⁰ Cameron.

One of the roles VSPs play is to collate and consolidate the expectations of stakeholders, for the benefit of participating firms:

All of us have our specialities and don't know about other areas and so a stewardship standard is partly about risk management for those water users testing themselves to see whether they really have understood a globally accepted norm in terms of biodiversity conservation or social impact that might not be their first area of knowledge.³⁵¹

Continuous improvement paradigm

Kirsty highlighted two reasons for incorporating a continuous paradigm: firstly, programs should support producers' *transit* to improved performance and sometimes this transition cannot be managed instantaneously. Secondly, community expectations and the standards desired by the community change over time, usually becoming more stringent.

Framework for Demonstration

Kirsty was circumspect about the value claims made in Australia in relation to animal welfare:

Australians always like to be able to say that they're the best in the world at something. Every time you listen to the radio and no matter what the issue is, Australia's always the best in the world. It's good to believe that, but I don't know whether it's true.

... and confirms the importance of demonstration:

Every time there's an incident that's in the media, everybody's out there saying, 'Oh, but we don't do that. We care for our animals, blah, blah, blah'. It's all very well to say that, but can you prove it? I think that's where the industry could do a lot more to help their members too – to provide a system for them that they can prove that.

Independent verification

Cameron saw independent verification as a complement to a demonstration framework:

³⁵¹ Cameron.

[T]he credibility ... comes from the independent certification. If it's just the industry certifying itself I don't think that's good.

Kirsty's preferred mode of independent verification was for on-farms audits.

Integrity of Auditing

Kirsty noted that the auditing process itself needed to be bound by a governance framework to ensure credibility:

[W]e don't want desktop audits and, 'Oh, send us your forms', because we know that what people put in their forms is not always reflective of what's happening on-farm. So we want a genuine audit.

This was reiterated by Cameron:

[I]ndustry is one of two or three stakeholders that set the rules and the rules are set by consensus. But industry doesn't judge whether or not their members have complied with them, that is independent certifiers are brought in to apply those standards.

Holistic – Spatially and Temporally

For Will, Cameron, and Damien, it was important to take a broad temporal and spatial view of the environment and avoid a narrow emphasis on specific issues:

[T]hey need to be credible in the sense that they need to be representative of the processes that are happening at a broad scale, not just in your little tiny patch, that's ignoring perhaps the impacts that you might be having on a broad scale.³⁵²

Measurable Outcomes

An empirically observed outcome was critical for Damien:

[W]e need a lot more professionalism in terms of the way we deal with the environmental part of the equation, we need to have some indicators that we can say what's actually going on.

³⁵² Damien.

Eric believed it was important to utilize an ‘end-of-system metric’, meaning a parameter that can be measured and sums up the whole of the landholder’s environmental management prowess.

4.3. Discussion

A general public policy principle of rewarding good performance and sanctioning bad performance was endorsed by some interviewees, but the extent to which external stakeholders are willing to reward high performing farmers for environmental or animal welfare excellence is uncertain. This lack of commonality of interests and positions between VSPs and external stakeholders was the most serious strategic issue emerging from the interviews. For some external stakeholders, high performing landholders are not even within the scope of their interests – the objective for these stakeholders is poor performers. The downside of this approach is that it relies on high performers ‘to do the right thing’ with no outside support, which does not seem to address the question of the landholders’ ethical responsibilities and when they can expect a reciprocal flow of benefits from external stakeholders.³⁵³

Like all governance players, external stakeholders are constrained by limitations of resources. Interviewees from the environmental and animal welfare NGOs and government spoke of their organization’s prioritization processes, which may or may not coincide with locations or sectors where farmers are performing well due to participation in VSPs. Prioritization raises questions about unintended consequences. For example, does a welfare-friendly certification mark on intensively farmed pork subtly influence a shopper to believe that this pork is ethically superior to uncertified, pasture-fed beef produced in a sustainable grazing system?

Whilst many interviewees referred to the need for holistic treatment of environmental issues, and some linked animal welfare and environment in the concept of ethically produced farm products, few seemed willing or able to attend to the actual integration process. So we are left with distinctly animal welfare initiatives, or biodiversity initiatives, or water initiatives, or sector-specific initiatives (cattle, sugar, cotton, etc.).

³⁵³ Tennent and Lockie, above n 136, 17.

Finally, the interviews raise a question about whose interests are favoured in the initiatives pushed by external stakeholders, and to what extent the expectations of external stakeholders favour larger corporate models of agriculture to the detriment of smaller family-oriented operations. Large numbers of isolated and widely dispersed small businesses on huge landholdings makes scrutiny difficult for governance overseers with limited resources. A smaller number of large, contained, intensive production systems on small acreages in more easily accessible localities is easier to monitor and, on pure efficiency grounds, has obvious appeal for environmental and animal welfare groups. Furthermore, some external stakeholders actively court the large processors and retailers of agricultural produce to put downward pressure in the supply chain on individual producers in relation to environment and animal welfare. Again, whether it suits McDonalds to deal with a few larger corporate suppliers rather than many small family units may subtly sway the model it pushes in an international forum for sustainable beef.

This is not to say the external stakeholders interviewed are anti-family farming – the effect may be more unconscious. The sorts of governance measures that suit their circumstances and the players they seek to influence unwittingly provide a subtle advantage to a more corporate model of farming. Perhaps a more corporatized farming landscape is an economic trend occurring anyway (quite apart from the effect of special interest stakeholders), and participation in VSPs comes with costs that might more easily be absorbed by larger corporates. But the relevance of this point goes to the discussion raised in Chapter 2 about intrinsic and internalized motivations of landholders to act out pro-social and pro-sustainability behaviours. As was argued in that chapter, family and community responsibilities and a deep sense of place are potentially important components of an ingrained stewardship ethic. If family farmers are to be replaced by remote corporate directors and geographically disconnected shareholders, then governance may need to be informed by a different model of behaviour and motivation.

CHAPTER 5: CLM CASE STUDY

This chapter comprises four sections:

Section 5.1 The process of engagement with CLM as a subject of research.

Section 5.2 An overview of CLM.

Section 5.3 *CLM Design*: the results of the investigation of how the design of CLM helps achieve the elements of the conceptual framework.

Section 5.4 *Farmers' perceptions of CLM*: the results of the investigation of whether farmers believe CLM helps them achieve the elements of the conceptual framework.

5.1. Engagement with CLM

Investigation of the conceptual elements and research questions in Chapter 2 using the interview-based approach selected for this study was always going to require a high degree of engagement with the selected VSPs to facilitate access to participating farmers. As a part of the process of engagement between the AgLaw Centre and ALMG, it was agreed that the AgLaw Centre would undertake a formal evaluation of CLM on a fee-paying basis as a part of a Commonwealth-funded project about the constraints to improving biodiversity conservation on farmland. The AgLaw Centre's brief was to independently evaluate CLM:

[A]s a tool to integrate the environmental and animal welfare requirements of all tiers of government with the responsibilities, requirements and capabilities of landholders, regional government and regional NRM agencies in a way that enables market and other drivers to recognize and reward superior performance.

The completion of the evaluation required regular consultation between the researcher and ALMG management, and the evaluation project was designed to balance the dual but distinct objectives of this study to engage with the research subject and conduct independent research on the potential of VSPs in co-regulatory arrangements. The nature of the evaluation brief and the project funds enabled more extensive access to the CLM processes (including the interview with the CLM trainer) than the other two organic cases, and allowed for a greater number of farmers to be interviewed, including farmers in the same district who had chosen not to participate in CLM.

A contact person at ALMG (who was not the same person as the CLM trainer) was nominated to facilitate contact with potential interviewees. The contact person was a very experienced farmer who had lived in the target district all his life. He had been involved in developing sustainable farming policy at local, regional, state and national levels for some decades and was well qualified to identify landholders regarded in the district as ‘good’ land managers. He also identified non-participants who matched the general profile of participants in terms of being located in the same district, having similar sizes and types of farm enterprise, and having a reputation as good land managers.

The inclusion of non-participants was a unique feature of the CLM case study. Ideally, this feature would have been replicated in the investigation of the other two VSPs, but resource constraints prevented this. The rationale for including non-participants was to build a richer understanding of the phenomenon of participation and why some farmers decline to participate. The recruitment of non-participants, however, raised risks of bias, which are addressed below, as well as in Chapter 3.

In negotiations between the AgLaw Centre and ALMG, it was agreed that the evaluation was to be an arm’s length, evidenced-based, academic assessment. ALMG was agreeable to the confidentiality and anonymity arrangements proposed for interviewees. Negotiations and ongoing communications were handled by the Director of the AgLaw Centre, and the contract between the parties was overseen by the UNE corporate legal team. The contract provided that the results of the evaluation could be used in academic publications and this thesis. The CEO of ALMG was also committed to objectivity and independence of the results.

In line with the study objective to engage closely with the VSP community and to gain a greater depth of understanding about the CLM and ALMG, the researcher participated in two events organized by ALMG – an information day for members and prospective members of CLM in Mitchell, Queensland in February 2013 (before the interviews commenced) and a symposium in Brisbane, Queensland in June 2014 for CLM members, industry representatives, government, and other interested environmental and animal welfare stakeholders in which the results of the Commonwealth-funded biodiversity project were presented.

5.2. Basic Characteristics of CLM

CLM is a membership-based VSP owned and managed by the Australian Land Management Group (ALMG), described on its website as ‘a not-for-profit organisation established by landholders to improve environmental and animal welfare outcomes in ways that enable landholders to benefit from their achievements’.³⁵⁴ It is a whole-of-property (rather than farm enterprise) based system and provides a structured approach to understanding landscape and enterprise characteristics, and a formal management program to achieve specific environmental, animal welfare and production goals set by the landholder. The system has a strong emphasis on integrity and implementation, being structurally based upon the approach of the International Organization for Standardization (ISO) in its *ISO 14001* standard for environmental management systems (EMS). Crucially, as CLM applies to a landholding, participants must be willing to have all activities within their control relating to a piece of land subject to the program. It has been operating for over a decade.

Environmental standards have been classified in four broad categories:³⁵⁵

1. *Process or procedural standards* require the participant to comply with a prescribed process or procedure. The rationale for audit is to verify the participant has followed the process or procedure, rather than verifying the product has a particular quality. The specifications for developing an EMS in *ISO 14001* are largely process standards.³⁵⁶
2. *Production standards* require that the end product comply with specific quality parameters. The rationale for audit is to verify the product matches the quality parameters.
3. *Performance standards* require that a participant meet a specific environmental performance criterion. The rationale for audit is to verify the participant has achieved a required level of performance.
4. *Hybrid standards* are a mix of the above.

The CLM standard is a hybrid of process and performance standards (1 and 3). Using a process-based standard ensures that CLM is applicable to diverse activities along the

³⁵⁴ ALMG <<http://www.almg.org.au/index.htm>>.

³⁵⁵ Mech and Young, above n 123, 7-9; Lockie and Higgins, above n 110, 7.

³⁵⁶ Mech and Young, above n 123, 8.

value chain for a wide variety of land-based enterprises across as many land types and tenures. By aligning with an internationally recognized process-based standard (*ISO 14001*), CLM landholders can be audited in a consistent, globally recognized manner. However, ALMG acknowledges the limitations of a process-driven approach: ‘The problem with process standards is that they don’t provide enough assurance that desired outcomes are being achieved whereas measured outcomes do’.³⁵⁷ To address these concerns, CLM incorporates both the ISO process-based framework and outcomes-based standards for biodiversity conservation, regional catchment objectives, and animal welfare.

CLM adopts the Plan-Do-Check-Review cycle developed by W Edwards Deming,³⁵⁸ reformulated in *ISO 14001* as: planning; implementation; measurement and evaluation; and review and improvement.³⁵⁹ Figure 5.1 sets out the sequence of workshops and activities that comprise the cycle through which a new participant progresses towards CLM certification.

A prospective participant is usually introduced to CLM through an information session, leading into a two-day workshop (the *CLM Start Workshop*), at which new participants are guided by an experienced trainer in several activities, including establishment of an environmental policy; legal issues review; introduction to regional NRM/catchment planning, and biodiversity conservation planning; environmental and animal welfare reviews; and risk assessment.

A key infrastructure of the system that helps landholders undertake these activities is *myEMS* – ALMG’s interactive, web-based management software, which incorporates a database of Australian legislation, and provides pre-set steps to comply with *ISO 14001*.³⁶⁰

³⁵⁷ ALMG, *CLM Features* <<http://almg.org.au/certified-land-management/CLM-features>>

³⁵⁸ W E Deming, *Out of Crisis* (MIT Center for Advanced Engineering Study, 1986).

³⁵⁹ T Tibor and I Feldman, *The Development of ISO 14000: A Guide to the New Environmental Management Standards* (Irwin Professional Publishing, 1996).

³⁶⁰ ALMG, above n 357.

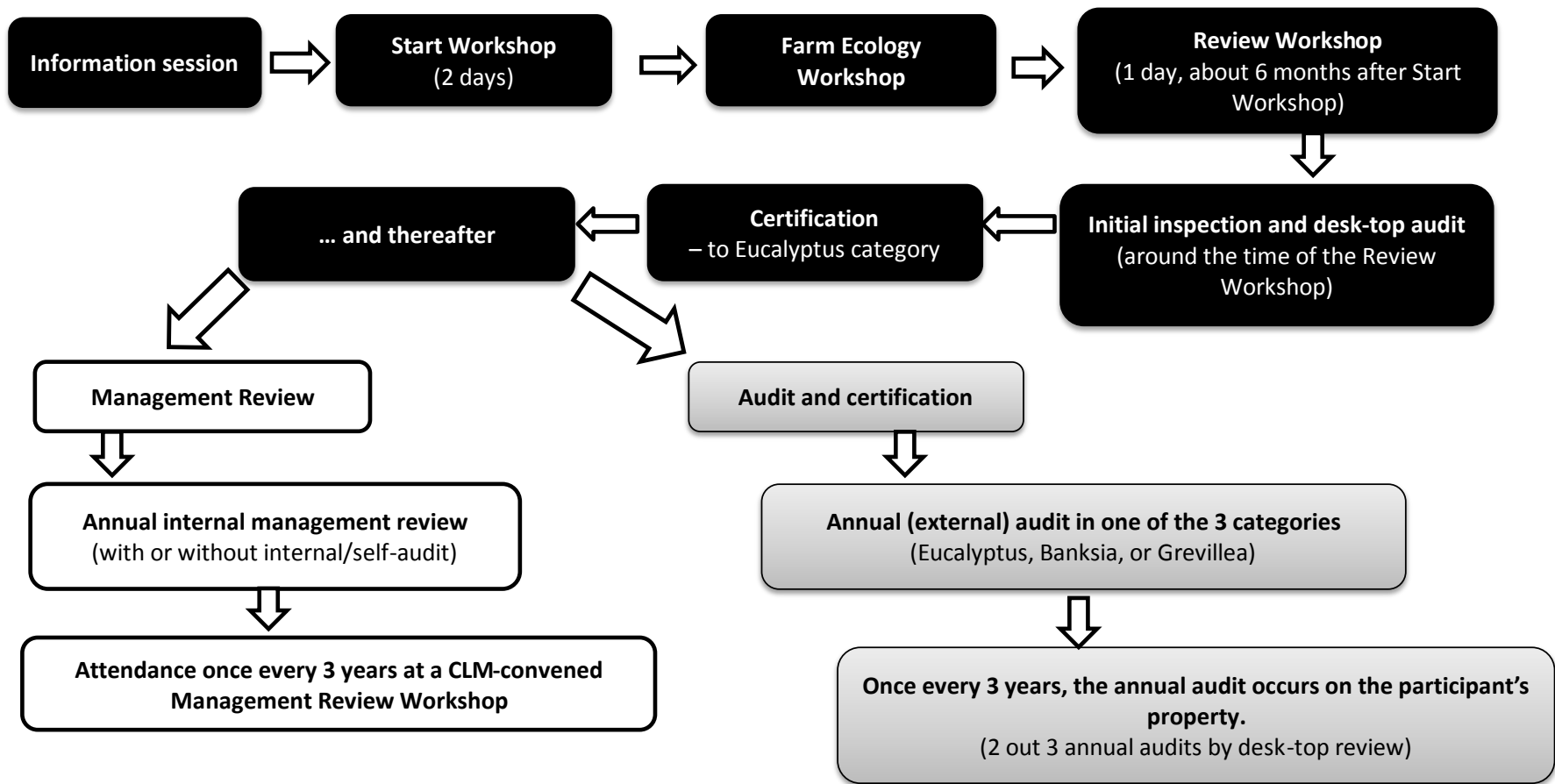


Figure 5.1: Outline of steps to CLM certification

For those impacts scored as significant in the risk assessment, the participant develops a management plan, which combines the activities, aspects and impacts identified in the environmental and animal welfare reviews with an action plan comprising objectives, causes, strategies, SMART targets,³⁶¹ indicators and monitoring procedures/tools. The process of developing a management plan is systematic and directs the landholders to those actions, decisions and behaviours of their operations that impact on environment and animal welfare. To illustrate, the CLM manual sets out a hypothetical scenario for a beef cattle breeding business, as adapted in the Figure 5.2.³⁶²

In the ‘doing’ phase of the continuous improvement cycle, landholders are responsible for implementing their Management Plan, including the monitoring specified in their Management Plan. ALMG provides opportunities for field days and special events on issues of interest. The ‘checking’ and ‘reviewing’ phases begin about six months after the Start Workshop when landholders participate in a one-day Review Workshop, to review and refine their Management Plan. Thereafter participants attend a review workshop once every three years. Part of the check and review phase is auditing and certification, discussed in more detail below. Successful auditing leads to formal certification and the right to use ALMG’s certification trademark.

³⁶¹ SMART = specific, measurable, achievable, relevant, and time-bound, after Bruno S Frey and Margit Osterloh, *Successful Management by Motivation : Balancing Intrinsic and Extrinsic Incentives* (Springer-Verlag, 2002).

³⁶² Peter Crawford and Tony Gleeson, *The Australian EMS Manual - A Guide to Developing and Implementing an Environmental Management System for Australian Land Managers* (Australian Landcare Management System Group, 2007) 42 (*‘Monitoring Manual’*)

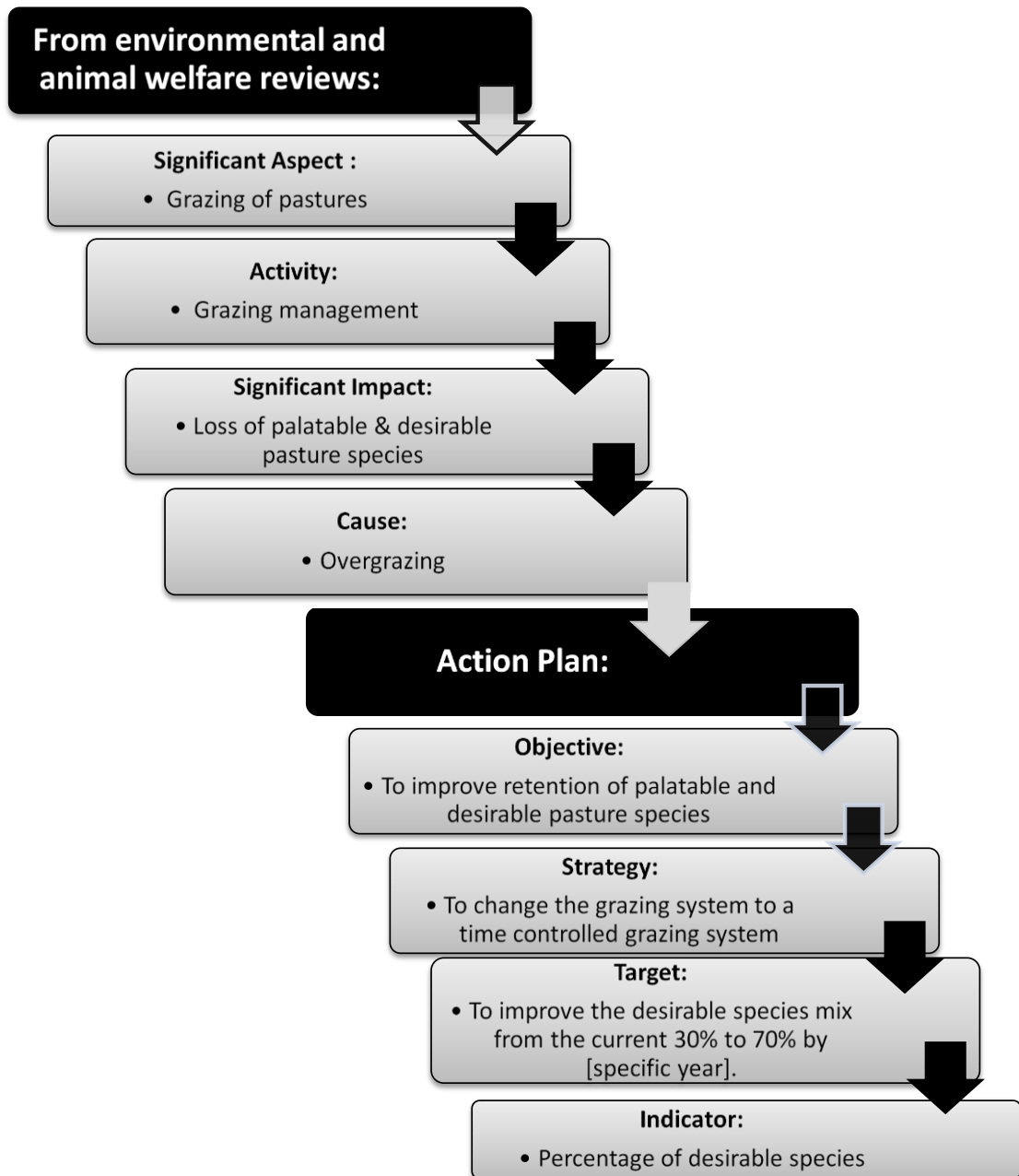


Figure 5.2: Sequence of CLM management planning

5.3. CLM Design

This section investigates whether CLM's design features facilitate participants' achievement of the five elements of the conceptual framework in Chapter 2 that are *within* their management domain, namely:

- Element 1: Following the procedures and making use of the systems promoted by CLM;
- Element 2: Managing their environmental and animal welfare impacts;

- Element 3: Achieving positive environmental and animal welfare outcomes;
- Element 6: Understanding external stakeholder’s expectations; and
- Element 7: Demonstrating outcomes.

Some brief comments are also made about the elements outside of landholders’ management sphere:

- Elements 4, 5 and 9: Mutual benefits
- Element 8: Recognition by external stakeholders.

As outlined in Chapter 2, Elements 2 and 6 respectively require recourse to a list of 14 attributes for internalization,³⁶³ and a list of 11 ideal features desired by external stakeholders.³⁶⁴ To refresh readers’ memories, these lists are reproduced in abbreviated form using keywords in Table 5.1 and Table 5.2.

Table 5.1: Internalization attributes – keywords

Broad group	Attribute
A. Communications	1. Information 2. Rationale 3. Explanation
B. Tailoring	4. Tailoring
C. Capacity Building	5. Builds competence 6. Enhances means
D. Interdependence and peer support	7. Co-operation 8. Peer support 9. Interdependence 10. ‘Horizontal collectivism’
E. Autonomy & self-determination	11. Choice 12. Responsibility
F. Trust-building	13. Trust-building
G. Matching costs & benefits	14. Matching cost & benefit

Given the considerable crossover between conceptual elements, the items in these two lists will occur wherever it is relevant, rather than being confined to the discussion of Elements 2 and 6 alone.

It was beyond the scope of this study to investigate whether realization of the five elements of the evaluation framework within the landholder’s management domain

³⁶³ Drawn from Stobbelaar et al, above n 23. See Chapter 2, Table 2.2.

³⁶⁴ Drawn from interviews with external stakeholders in Chapter 4. See Table 4.2.

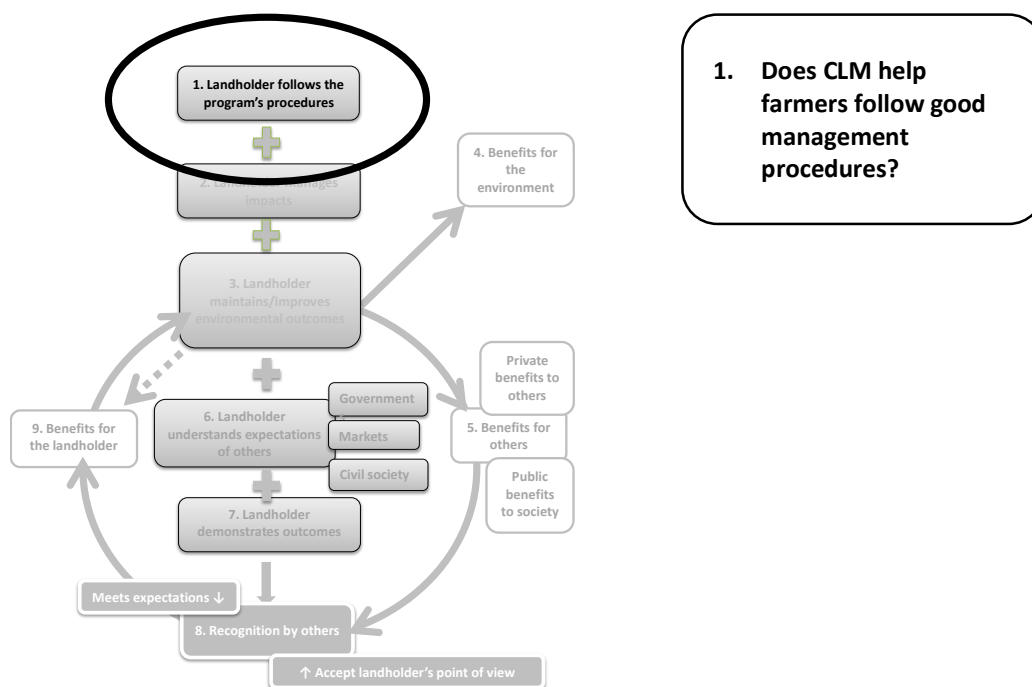
was in fact achieved. The study was limited to whether CLM had design features that make achievement of these outcomes *more likely*.

Table 5.2: Ideal features desired by external stakeholders – keywords

Ideal feature	
1.	Risk identification
2.	Transparency
3.	Linkages
4.	Diversity
5.	Beyond compliance
6.	Continuous improvement
7.	Demonstration
8.	Verification
9.	Integrity
10.	Holism
11.	Measurable outcomes

Two methods were available to undertake this investigation: (1) document analysis of CLM’s key documentation;³⁶⁵ and (2) qualitative interviews with external stakeholders (from which the eleven ideal features are drawn); and with a CLM trainer, Paul,³⁶⁶ who provided a demonstration of the web-based computer software.

5.3.1. Element 1, Research Question 1: Following CLM Procedures



³⁶⁵ Crawford and Gleeson, above n 362; Peter Crawford, 'ALM Group Monitoring Manual' (2010); ALMG, *Biodiversity Monitoring Framework for CLM* (2nd ed, 2012)

³⁶⁶ Pseudonym.

CLM has a number of methods and tools for helping participants follow CLM procedures. ALMG contracts experienced facilitators to guide new participants through the preliminary workshop (*CLM Start Workshop*) and later *Review Workshop* and other steps in the sequences outlined in Figure 5.1 and Figure 5.2 above. For instance, Paul, the interviewed CLM trainer, had a long career dealing with farmers as an extension agronomist in a state department of agriculture before his engagement with CLM and has qualifications in environmental management training.

New participants have the benefit of a number of publications and systems created by ALMG and associates that have been tested with over a decade of experience, including the *CLM Manual*, the *Monitoring Manual*³⁶⁷ and *Biodiversity Monitoring Framework*.³⁶⁸ As participants become more experienced with CLM, they are guided through periodic management reviews to ensure their management plans remain relevant.

Paul explains how participants use the *myEMS* computerized planning tool:

[W]hen they run through the workshop using *myEMS* as their tool, it triggers legislation ... depending on the enterprises and location. Then people start going through, as a base of their initial scan – ‘Do you use groundwater and do you cultivate and do you do certain things?’ – that triggers a whole lot of things that might happen on that farm. And so they then have to go through it, and that’s where they eventually do the *activity* and the *aspect* of that activity so it might be grazing management or it might be mustering or cultivation or whatever. And that takes them through to a whole lot of *impacts* that might be happening. They then select which of those impacts they think are relevant to their enterprise.

MyEMS is interactive and self-generating: when landholders and CLM trainers consider the activities, aspects and impacts, they may devise new ones that can then be added to the database for the benefit of all users. Thus, landholder participants become involved with building the comprehensiveness of CLM systems:

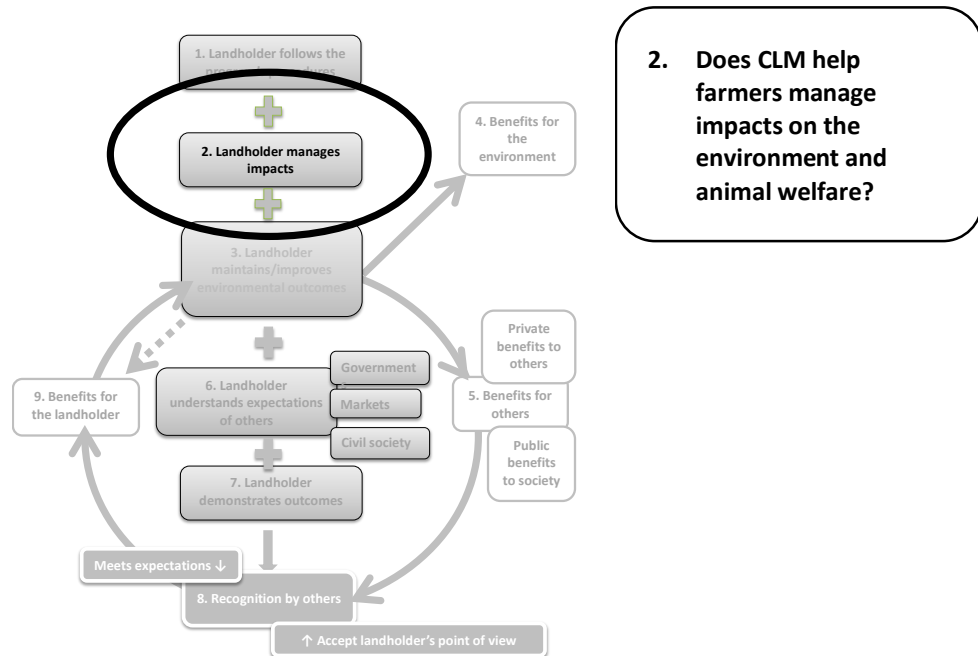
This comes back from the environmental management systems thinking and within *myEMS* what’s in there has evolved over time mainly from farmers ...

³⁶⁷ Crawford and Gleeson, above n 362.

³⁶⁸ ALMG (2012), above n 365.

Originally, we would have had just some basic information put into there and they would have expanded on that.³⁶⁹

5.3.2. Element 2, Research Question 2: Managing Impacts



5.3.2.1. CLM’s general approach to management

A key CLM step in participants developing a management response is the risk assessment process, in which the participant assesses the significance of potential impacts through a risk assessment matrix. This scores likelihood of impact and potential severity to create a numerical risk score, which informs the priorities for an action plan. *myEMS* helps automate the process of risk assessment and prioritization. The CLM training manual³⁷⁰ notes that ‘the score you give to an issue will rely on your judgment, so common sense will need to prevail when scoring your impacts’. The participant determines the score that triggers the threshold of significance, though legal non-compliance (revealed in the legal review) is automatically rated as significant and must be addressed in the management plan.

For those impacts scored as significant, the participant develops a management plan, including the sequential and systematic consideration of activities, aspects, impacts and action plan comprising objectives, causes, strategies, SMART targets, indicators

³⁶⁹ Paul.

³⁷⁰ Crawford and Gleeson, above n 362, 34.

and monitoring procedures/tools. In addition, participants develop a monitoring regime to track whether the elements of the management plan are being met. ALMG has published a *Monitoring Manual*³⁷¹ with protocols for parameters including soils issues (salinity, erosion, structure, pH, organic matter and biological activity), water and stream condition, pasture and ground-cover, native vegetation and biodiversity. It has also published a *Biodiversity Monitoring Framework*, with an overview of Australian agro-ecological regions, the expectations of CLM with regards to biodiversity conservation and certification, and principles for developing performance criteria and indicators.³⁷² Paul explains how a participant might monitor outcomes:

[F]or most landholders [monitoring and demonstration] is probably ... indirect, so it's the things *associated* with what you expect. So for instance, groundcover has been shown to [correlate with] what level of erosion you may have. So groundcover's ... a proxy measure. If we had quite a biodiverse plant community more like in a remnant vegetation type area – most vegetation areas are going to have a low shrub level, a medium size tree and a taller tree level and even a grass community like Mitchell grass complexes – you'd be looking for a mixture or a range of species within it, and if they are there, you're confident that we can handle quite a diversity of insects, plants, birds, etc.

Additionally, participants establish a documentation and record keeping system, to assist internal management and external audits, as well as for demonstration, evidence, proof and traceability purposes.

These features of CLM relating to risk assessment, management and action plans, monitoring and documentation are consistent with the attribute for internalization relating to capacity building,³⁷³ and the external stakeholders' expectation for a risk assessment facility.³⁷⁴

It was not possible in this study to conduct an in-depth analysis of individual landholders' management plans, but the *myEMS* system captures a wealth of data that would make for a worthwhile research project in the future. For instance, as Paul

³⁷¹ Crawford, above n 365.

³⁷² ALMG (2012), above n 365.

³⁷³ Attributes 5 and 6: builds competence and enhances means.

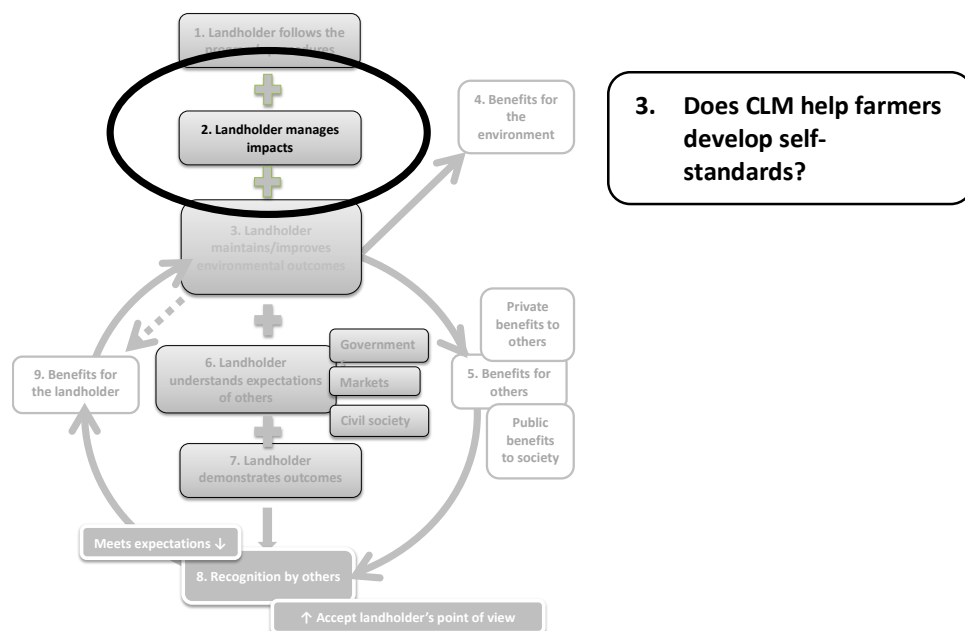
³⁷⁴ Ideal feature 1.

explained by showing a mock-up management plan on the computer that he had developed for training purposes, it would be possible to observe changes to a participant's management plan over time, because each version is saved in *myEMS*:

[S]ee here, there's ... five versions: this is the current one and this is archived. In theory I should be able to go back in here and find the five versions ... So it's a bit like in your word document you made a modification and so you call it version 1, version 2, version 3. They all still exist in your system or your filing cabinet whereas for other people [such as external auditors] only the latest version exists. So we should be able to track back through all that.

The sequential process for goal-setting and goal-achievement, combined with the traceability capacity of CLM, are consistent with the transparency expected of external stakeholders.³⁷⁵ If challenged or questioned about their decision-making, participants are able to show how their decisions are functions of the risk management and action planning processes.

5.3.3. Element 2, Research Question 3: Self-Standards



Recapping from Chapter 2, Bandura posits that a person is characterized by five basic capabilities:³⁷⁶ the *symbolizing capability*, which enables people to form mental

³⁷⁵ Ideal feature 2.

³⁷⁶ Bandura (1991), above n 204.

models from experience and observations; *forethought capability*, which allows people to predict outcomes and set goals; *vicarious capability*, which allows people to learn from others; *self-reflective capability*, which allows for analysis of experiences; and *self-regulatory capability*, which allows individuals to regulate their own behaviour in line with their goals. The foundation of the self-regulatory capability is *self-efficacy* – our belief that we can achieve goals.³⁷⁷ Self-efficacy requires a sense of personal control; that is, a perceived ability to influence outcomes towards goals.

The continuous improvement cycle adopted by CLM aligns well with Bandura's behavioural model, and it encompasses motivation, action, evaluation and reaction, informed by internal and external feedback. CLM supports the self-regulatory capability and fosters self-efficacy in several ways: firstly, CLM allows participant landholders to divide the sustainability challenge into manageable portions, entering into the process at whatever level they assess their own skills and motivations to be.

Secondly, CLM potentially enhances self-efficacy by refining the landholders' sense of control by carefully clarifying the management goal through a variant of systems analysis. This is done by deconstructing the management system into activities, aspects, and impacts. In this way, the task is likely to become clearer and more manageable: The landholder is not expected to manage 'The Environment' which is a vague and overwhelming target liable to deflate the sense of control necessary for self-efficacy to flourish. Instead, CLM landholders manage those aspects of their management practices *that impact on* biodiversity, riparian ecosystems etc.

CLM supports the self-reflective capability in Bandura's behavioural model because it contains in-built mechanisms for reflection at several points in the process, including an initial environmental review early on in participation, monitoring of self-set goals and objectives, audits, and separate periodic internal management reviews. This focuses specific attention on the landholders' own observations and external feedback. In line with Bandura's model; this focussed observation is necessary for generating information for refining mental models and re-orienting behaviour to best achieve goals (i.e. the symbolizing and self-regulatory capabilities).

³⁷⁷ Ibid, 483.

The systems approach – with its emphasis on setting objectives, with clear targets, measured through precise indicators – potentially directs landholders to causes of degradation, as well as preventative measures that pre-empt degradation, rather than symptoms of degradation and reactive measures that address the results of degradation. For example, in relation to pest management, the objective-defining process of CLM should cause landholders to question the effectiveness of various practice options: Is my objective to reduce pest numbers or to reduce pest impacts? The latter results in different practices and indicators compared with the former.

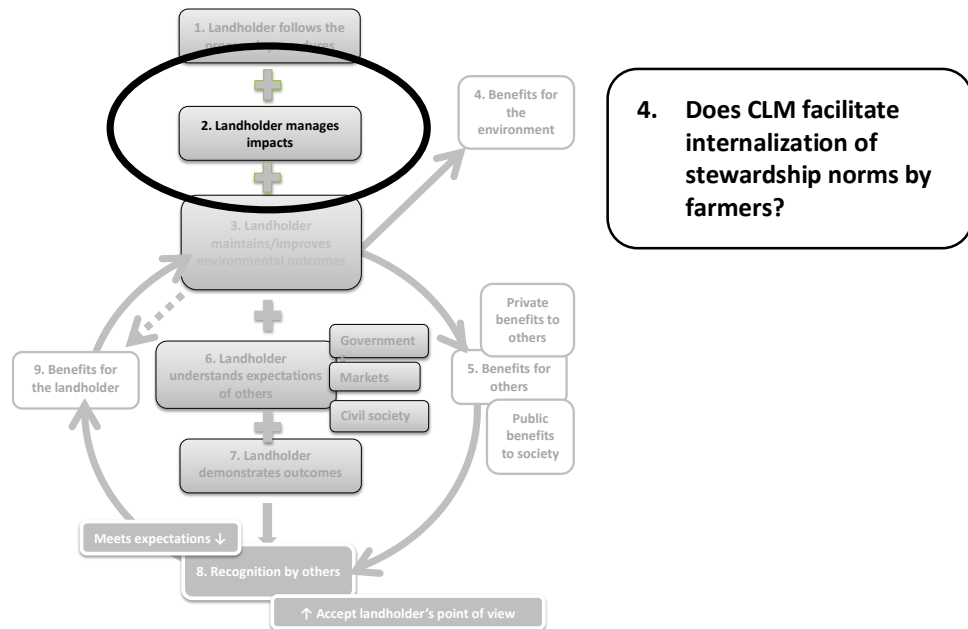
CLM's process for taking landholders systematically through the impactful activities of their operations supports Bandura's forethought capability, and the tendency to focus landholders on causes and not symptoms is consistent with the attributes for internalization relating to communications³⁷⁸ as well as the capacity building attributes.³⁷⁹

Assuming CLM can enhance self-efficacy as described, then Bandura predicts an additive effect: landholders with a strong belief in their ability to achieve environment-related goals invest more time, effort and resources to achieve those goals. And once achieved, they are more amenable to setting even more ambitious goals, are less anxious, and do not give up easily when adverse circumstances arise. Furthermore, the effects are transposed to new areas of endeavour, which is important in relation to the long-term governance relationship mentioned above where society needs to come back again and again with requests for new goals and practice changes. Theoretically CLM facilitates a virtuous cycle of confidence building and achievement, leading to more confidence and more achievement.

³⁷⁸ Attributes 1-3: information, rationale, and explanation.

³⁷⁹ Attributes 5 and 6: builds competence and enhances means.

5.3.4. Element 2, Research Question 4: Internalization of stewardship norms



As mentioned above, some of the fourteen internalization attributes are discussed in relation to other research questions. This section discusses attributes not otherwise discussed elsewhere in the case study.

5.3.4.1 Autonomy and Self-Determination

For the most part, CLM does not impose externally mandated objectives and standards that might otherwise crowd-out these internal motivators. Nonetheless, it is designed around capturing as many incentivizing factors consistent with a landholder’s goals as possible (e.g. market premiums and government incentives) – in other words, it aims to capture incentives that reinforce a landholder’s own standards. As a voluntary measure that places the participant in the seat of responsibility for constructing management objectives, CLM is theoretically able to ‘crowd-in’ rather than crowd-out intrinsic values potentially sympathetic to environmental stewardship, such as love of the land, sense of place, passing the farm onto heirs, and sense of community.

This self-directedness is also important because it is the farmer who must ultimately integrate the disparate expectations of multiple external stakeholders into a single integrated operation. CLM provides a relatively universal framework that crosses enterprise type and management issue. Once again, the emphasis in CLM on the landholder having the prerogative of (and responsibility for) constructing objectives, means that the landholder is enabled to take challenges on board according to the

business's capacity to absorb conflicting expectations from stakeholders. In this regard, CLM satisfies the attributes for internalization relating to autonomy and self-determination.³⁸⁰

5.3.4.2 Catering to Landholder Heterogeneity

CLM is able to handle a high degree of diversity of personal values, ages, enterprises, and business structures. Its emphasis on individuals taking responsibility for management goals means that different landholders can enter the process at different levels of knowledge and motivation, depending on their own circumstances. This is reflected in the CLM's approach to review and certification that enables landholders to choose the system that best meets their needs. This ability to cater to a diversity of landholders suggests CLM satisfies the attribute for internalization relating to tailoring to individual capacities.³⁸¹

5.3.4.3 Peer Effects and Social Learning

The peer effects of the workshop/group learning character of CLM are conducive to a couple of features of the behavioural model. Firstly, other participants (especially experienced and effective land managers) provide examples of modelled behaviour for landholders facing novel and complex challenges, supporting Bandura's vicarious capability. Inexperienced landholders see behaviours acted out in practice, which increases the likelihood of uptake. Learning and experimentation are considered essential to adaptive management of natural resources.³⁸²

Secondly, the group support and social learning aspects of CLM make it more likely that pro-environmental social norms are based on shared values amongst participants that are regularly reinforced. New norms of behaviour can be introduced in a relatively sympathetic and non-threatening social environment. The peer effects of CLM workshops and other group settings potentially allows ideas to be filtered, trialled and reinforced, 'becoming part of the normative concept of "good farm management"'.³⁸³ CLM potentially builds a connected social network of like-minded participants that operates as a sounding board, learning forum, and normative reinforcement of pro-

³⁸⁰ Attributes 11 and 12: choice and responsibility.

³⁸¹ Attribute 4: tailoring.

³⁸² Genskow and Wood, above n 238.

³⁸³ Vanclay, above n 29, 214.

environment values and practices; the task of good land management become less a lonely, solitary pursuit and more a group pursuit.

Both ALMG and CLM, therefore, have design features that are consistent with the idealized attributes for internalization relating to interdependence and peer support.³⁸⁴ This includes an organizational structure that emphasizes ‘horizontal collectivism’, which Stobbelaar et al suggest is a feature of agri-environmental programs that encourage internalization of stewardship norms.³⁸⁵ Such a structure is horizontal in the sense that it refers to ‘practices and norms supporting equality or interchangeability among people’ as opposed to vertical, which emphasizes ‘hierarchical or subordinate social relations’.³⁸⁶ Collectivism refers to ‘the priority placed on the needs, norms, and goals of one’s group or collective’, as opposed to individualism, which emphasizes the individual’s goals and preferences.³⁸⁷ Horizontal collectivism, therefore, is the ‘tendency to see oneself as similar to others and to emphasize common goals, interdependence, and sociability’.³⁸⁸ ALMG is a membership-based, non-government, not-for-profit organisation ‘established by landholders to improve environmental and animal welfare outcomes in ways that enable landholders to benefit from their achievements’.³⁸⁹ CLM participants who maintain their certification and pay their membership dues are voting members of the organization.

5.3.4.4. Costs

The costs charged by ALMG for participating in CLM are shown in Appendix 10. Participants meet ancillary costs themselves, such as attendance at workshops, the costs of implementation of their Management Plans, and auditor’s fees. Although a cost-benefit analysis is beyond the scope of this study, on the face of it, these costs do not seem excessive for businesses of the apparent scale as those operated by the CLM participants interviewed for this study. Whether participation balances the costs with

³⁸⁴ Attributes 7-10: co-operation, peer support, interdependence, and horizontal collectivism.

³⁸⁵ Stobbelaar et al, above n 23, S177.

³⁸⁶ Chirkov et al, above n 216, 99.

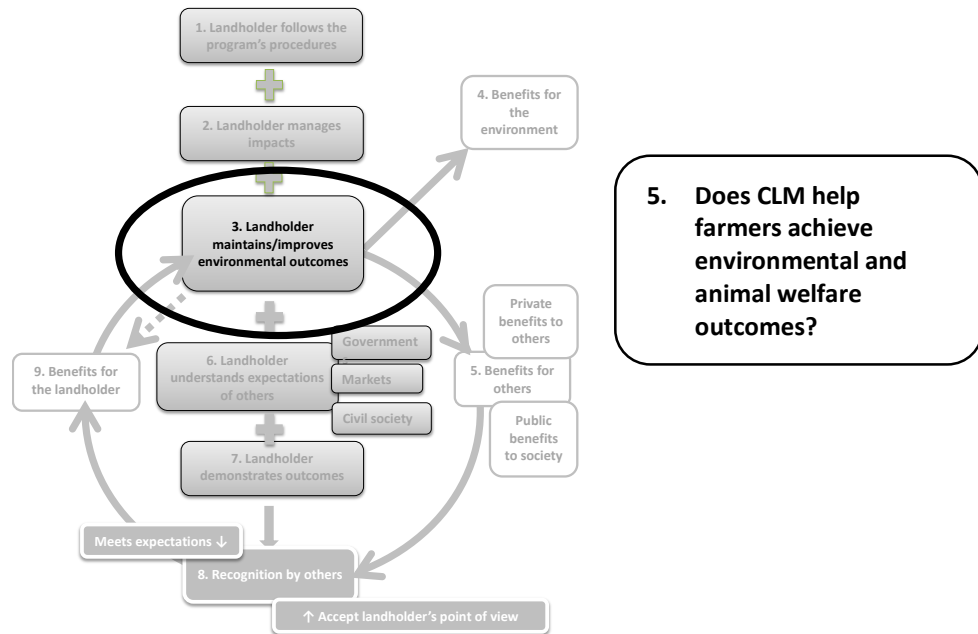
³⁸⁷ Ibid, 99.

³⁸⁸ Ibid, 100. See also Harry C Triandis and Michele J Gelfand, ‘Converging Measurement of Horizontal and Vertical Individualism and Collectivism’ (1998) 74 *Journal of Personality and Social Psychology* 118.

³⁸⁹ ALMG website, above n 354.

the perceived benefits,³⁹⁰ is likely to be a highly individualized concern, as shown in the later discussion on landholder perceptions.

5.3.5. Element 3, Research Question 5: Achieving Outcomes



Experienced trainers guide participants through these activities and participants undertake an environmental review of their property and operations. This exercise allows the participant to identify how their management activities potentially impact on the environment. *MyEMS* gives guidance in this regard by providing a suite of pre-determined matters, activities and impacts, gleaned from the experience of participating landholders and CLM personnel. This database is continually improved based on cumulative experience.

Participants undertake biodiversity conservation planning and must adopt a process for conserving habitat, identifying possible rare or threatened species on their properties, and carrying out farming practices to minimize their impacts on native fauna or flora. Paul explained that this process often links the landholder with local agencies (such as the regional NRM body) who can provide information on the likely conservation values or vulnerable species on their properties.

³⁹⁰ Attribute 14: matching costs and benefits.

Similar to the environmental review, participants answer a number of pre-set animal welfare questions posed by *myEMS*, as explained by Paul:

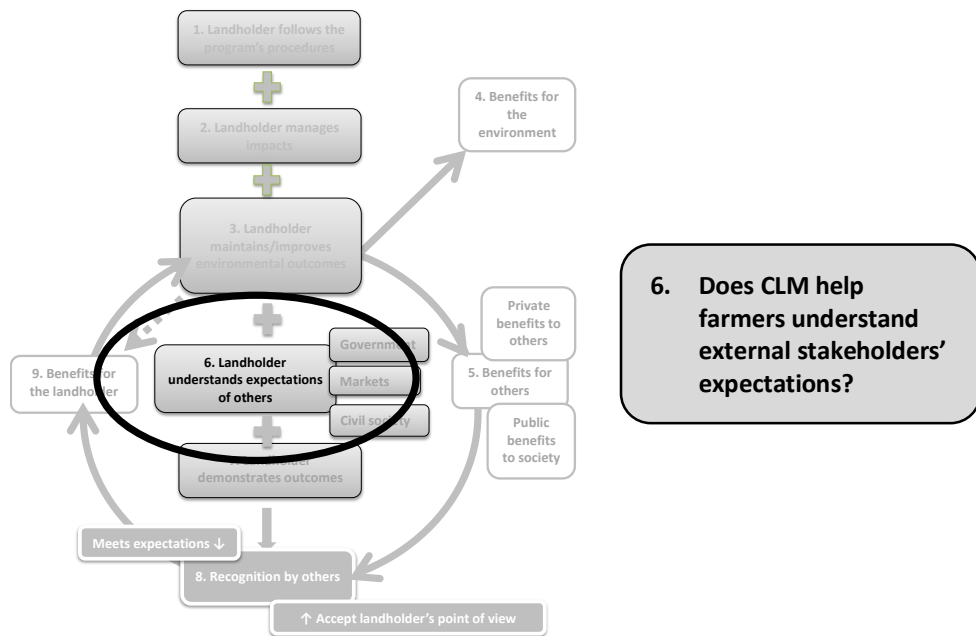
[W]e provide the farmers with the RSPCA's cattle guidelines ... and so, once again, it's [a matter of] farmers being cognisant of what's in the guidelines and likewise what's in the legislation as to how they put in place a plan.

The participants' responses cause *myEMS* to find appropriate pre-existing aspect-activity-impact sequences from its database, which are then subjected to risk scoring in the risk assessment.

In addition to the CLM systems, procedures and formal workshops, including a Farm Ecology Workshop, ALMG provides regular newsletters to CLM participants and organizes occasional information events for the benefit of current and prospective participants. The combination of features – skilled facilitators, guided workshops on process and ecology, manuals, review processes, risk assessments, management planning, biodiversity planning, regional NRM/catchment planning – means that CLM has design features consistent with the attributes for internalization relating to communications and capacity building.³⁹¹

³⁹¹ Attributes 1, 2, 3, 5 and 6: information, rationale, explanation, builds competence, and enhances means.

5.3.6. Element 6, Research Question 6: Understanding Stakeholders' Expectations



As mentioned above, some of the 11 ideal features desired by external stakeholders are discussed in relation to other research questions. This section discusses ideal features not otherwise discussed elsewhere in the case study.

Compliance with other stakeholders' expectations – including government as a stakeholder and its laws and regulations – is not a proxy for the common good or achieving environmental outcomes. It is possible that their expectations could be misinformed or clumsily conceived, and historical examples are available of laws and government policy that encouraged or compelled farmers to apply environmentally damaging practices.³⁹² However, in the context of collaborative governance, consistency with the objectives and instruments of other stakeholders is a rational precursor to collaboration.

CLM provides various direct and indirect opportunities for participants to develop their understanding of the expectations of external stakeholders, including government, the regional NRM body, environmental and animal welfare stakeholders, amongst others. At the CLM Start Workshop, the trainer guides participants through a number of formal procedures and reviews, including, as mentioned, environmental and

³⁹² Ian Noble et al, 'Land Resources' in *Australia: State of the Environment 1996* (Australian Government, 1996), 6-39, 6-50.

animal welfare reviews, and regional NRM and biodiversity planning. In addition, consistent with *ISO 14001*,³⁹³ a participant is required to develop an environmental policy for their businesses: a publically available document, which commits them, among other things, to continual improvement, prevention of pollution, and obeying the law relating to their operations.

There will always be arguments about which external stakeholders should be represented in the processes and design features of a VSP, but the range of stakeholder concerns encompassed by CLM – law and regulation, NRM regional priorities, biodiversity, environmental and animal welfare risk – is evidence that suggests CLM takes account of diverse stakeholder perspectives.³⁹⁴

CLM is not of itself a catchment-planning program. It is directed towards the individual farmer, as the person primarily responsible for natural resources management on the farm. However, the ecological review, the risk management process, the requirement to consider the needs of biodiversity conservation, and the regional NRM/catchment planning module, arguably pushes the outlook of landholders beyond their own farms, consistent with external stakeholder expectations about a long-term, holistic, landscape focus.³⁹⁵

Three independent external stakeholders interviewed who were knowledgeable about CLM and who were asked directly about its efficacy in relation to achieving their organizations' objectives (Kirsty, Eric and Kevin) were positive about CLM. For Kirsty and Eric, the 'difficulty' of CLM was that it was too good in some respects for their purposes, and CLM participants were likely, in their views, to be achieving a standard above that advocated by them for the current political climate. Regional NRM groups in Queensland, at the time of this study, had few roles relating to enforcement of punitive statutes and regulations. Their focus was on incentives, education and encouraging voluntary action. To this end, in Kevin's view, CLM usefully complemented the objectives of the regional NRM group.

³⁹³ *ISO 14001*, cl 4.2.

³⁹⁴ Ideal feature 4: diversity.

³⁹⁵ Ideal feature 10: holism.

5.3.6.1. Regional NRM

In the regional NRM/catchment planning activities, participants are required to take account of local or regional catchment priorities and targets – being aware of them and their relevance and application to the participant’s operations. Paul explained that, as a part of ALMG’s ongoing engagement with regional NRM bodies in the regions in which CLM participants operate, CLM trainers liaise with the relevant regional the NRM group prior to the workshop to provide summaries of catchment planning objectives and targets.

This is evidence of CLM satisfying the attribute for internalization relating to building trust with external stakeholders³⁹⁶ and, in this way, CLM helps operationalize the regional NRM group’s objectives. For two of CLM’s three certification categories (see below under ‘Demonstrating Outcomes’), the participant must come to an information sharing arrangement with the regional catchment authority. CLM’s regional NRM/catchment planning facility is consistent with external stakeholders’ expectations for VSPs to link with other governance institutions.³⁹⁷

The continuous improvement approach is consistent with external stakeholder expectations.³⁹⁸ Continuous improvement implies that participants are open to the possibility that change may be needed as a result of periodic review, and one of its potential advantages is to prime participants to anticipate opportunities to improve business operations through changed practice. Ideally, a participant primed for change will be more adaptable and better able to respond to changing conditions and stakeholder expectations as they occur.

5.3.6.2. Law and Regulation

Participants undertake a review of legal obligations, with the assistance of *myEMS*. Participants input details of their enterprises into *myEMS*, which interrogates the legal database and lists most if not all legislation (State and Commonwealth) applicable to

³⁹⁶ Attribute 13: trust-building.

³⁹⁷ Ideal feature 3: linkages.

³⁹⁸ Ideal feature 6: continuous improvement.

those enterprises, helping landholders to demonstrate the awareness of legal issues required under an ISO-consistent EMS.³⁹⁹

Any legal requirement with which they are not currently compliant becomes a ‘significant impact’ and a priority in the subsequent management plan. CLM’s legal review requires participants to identify laws relevant to their operations and to document the process and results of identification. CLM incorporates the *ISO 14001* requirement⁴⁰⁰ for participants to have a procedure for periodically re-assessing compliance with relevant laws, and for documenting that re-assessment. The legal review is consistent with external stakeholder expectations for VSPs to link with other governance measures.⁴⁰¹

Without *myEMS*, a farmer seeking to establish and implement an EMS consistent with ISO 140001 would need to undertake the entire legal review at their own expense. This could be an expensive and time-consuming process necessitating considerable research and potentially the engagement of lawyers, but ALMG has already researched legislation applying to most agricultural enterprises, made available through *myEMS*.

The design of CLM encourages participants to go beyond the law⁴⁰² in several ways. By illuminating legal obligations for participants through the legal review and *myEMS*, CLM facilitates an understanding of the actual minimum required by law. This is augmented by the exploration of regional NRM/catchment objectives and biodiversity conservation. The environmental and animal welfare risk reviews cover risks generally; that is, the risks that operations negatively impact on environment and animal welfare regardless of whether the participant is acting within the law. The process of constructing a management plan captures both risks that might entail non-compliance with the law and general risks *within* the law. CLM’s processes do not equate the public interest or good environmental and animal welfare management with the law *per se*. Certainly, legal requirements are treated as a fundamental obligation,

³⁹⁹ *ISO 14001*, cl 4.3.2.

⁴⁰⁰ *Ibid*, cl 4.5.2.

⁴⁰¹ Ideal feature 3: linkages.

⁴⁰² Ideal feature 5: beyond compliance.

but CLM focuses participants' attention on the best way of managing a participant's risky impacts, rather than the best way to comply with the law.

5.3.6.3. International Norms

ISO standards have a high degree of international recognition, and are constructed with the assistance of international experts. They have standing in international trade arenas such as the WTO, where a rebuttable presumption applies that compliance with an ISO standard is not a trade barrier that would otherwise invoke WTO sanctions.⁴⁰³ ISO consistency seems a sensible choice for CLM. Australian farmers depend on export markets. Given the export character of Australian farm produce, it would be wise to align with processes that are less likely to be blocked in WTO disputes.

Though Cameron, one of the interviewed external stakeholders, expressed a preference for ISEAL's standards⁴⁰⁴ over ISO's, and there is contention about the environmental efficacy of any of the international standard-setting processes,⁴⁰⁵ using the ISO process goes some way to the transparency expected by external stakeholders.⁴⁰⁶ ISO is a long-established international process and *ISO 14001* is a much-used instrument⁴⁰⁷ that has been developed, upgraded and published since the mid-1990s with international expertise.⁴⁰⁸ In other words, CLM takes advantage of a well-known and discoverable template.

⁴⁰³ Halina Ward and Mai-Lan Ha, *Voluntary Social and Environmental Standards and Public Governance: Reviewing the Evidence and Setting Principles for Standards-setters* (The Pacific Institute, 2012).

⁴⁰⁴ International Social and Environmental Accreditation and Labelling Alliance (ISEAL) <<http://www.isealalliance.org/about-us>>

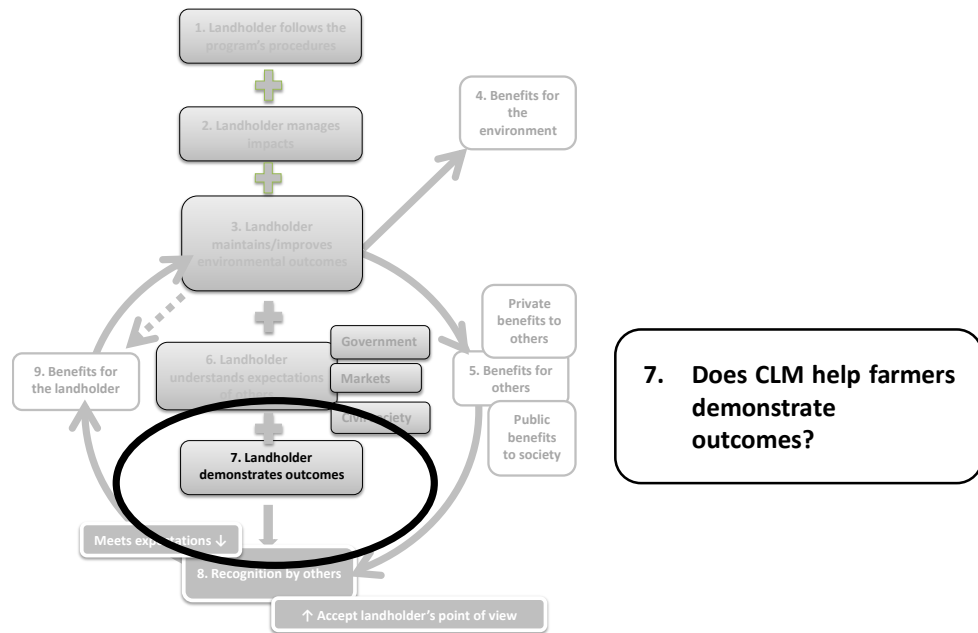
⁴⁰⁵ Allison Loconto and Marc Barbier, 'Transitioning Sustainability: Performing "Governing by Standards"' in Susana Borræs and Jakob Edler (eds), *The Governance of Socio-Technical Systems: Explaining Change* (Edward Elgar, 2014) 86.

⁴⁰⁶ Ideal feature 2: transparency.

⁴⁰⁷ According to ISO, by 2009 about a quarter of a million *ISO 14001* certificates had been issued in 159 countries: ISO, *ISO 9001 Certifications Top One Million Mark, Food Safety and Information Security Continue Meteoric Increase* (2010) <<http://www.iso.org/iso/news.htm?refid=Ref1363>>.

⁴⁰⁸ T Brorson and G Larsson, *Environmental Management: How to Implement an Environmental Management System within a Company or Other Organization* (EMS AB, 1999); R B Clements, *Complete Guide to ISO 14000*, (Prentice Hall, 1996).

5.3.7. Element 7, Research Question 7: Demonstration



CLM goes beyond being an awareness-raising and educational program and beyond self-assessment and self-declaration of good intentions. It has a facility for independent auditing. While CLM encourages internal audits in preparing for management review,⁴⁰⁹ it is a condition of CLM certification that participants complete a successful *external* audit annually.⁴¹⁰ This reflects the requirements of *ISO 14001*. CLM has three categories of external audit that can lead to certification; the distinguishing features of the three categories are shown in Table 5.2. The auditor must be accredited by ALMG, and for the *Grevillea* category, must also be accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), the qualification required for an *ISO 14001* audit.

CLM is consistent with stakeholder expectations about demonstration, independent verification, integrity of auditing, and transparency.⁴¹¹ The combination of auditing, certification, risk assessment process, management and action plans, requirement for biodiversity conservation and regional NRM/catchment planning, monitoring and

⁴⁰⁹ Crawford and Gleeson, above n 362, 91.

⁴¹⁰ Ibid, 87.

⁴¹¹ Ideal features 2, 7-9: transparency, demonstration, verification and integrity.

documentation together increases the likelihood that participants will demonstrate public interest outcomes in line with external stakeholders' expectations.⁴¹²

Table 5.3: CLM categories of certification

	Distinguishing features
Eucalyptus	<ul style="list-style-type: none"> • Successful audit by auditor accredited by ALMG. The auditor may have been involved with training the participant (second party audit).
Banksia	<ul style="list-style-type: none"> • Auditor is independent of the participant and is accredited with ALMG (third party audit); and • Participant must have developed a process for exchanging information with the regional catchment authority.
Grevillea	<ul style="list-style-type: none"> • As for Banksia; and • Auditor must be accredited with JAS-ANZ.

The guidance offered by CLM through the processes of self-audit, management review, and the Eucalyptus category audit by a CLM trainer provide educational opportunities for landholders, as explained by Paul:

[I]f we went there and people are putting all this effort into some water points that changed something or other and you've got these eroding gullies and you've got all sorts of other things going on you'd have to say, 'Listen, I think you've got priorities wrong'.

Paul explains how he would approach a prospective audit of a participant's property:

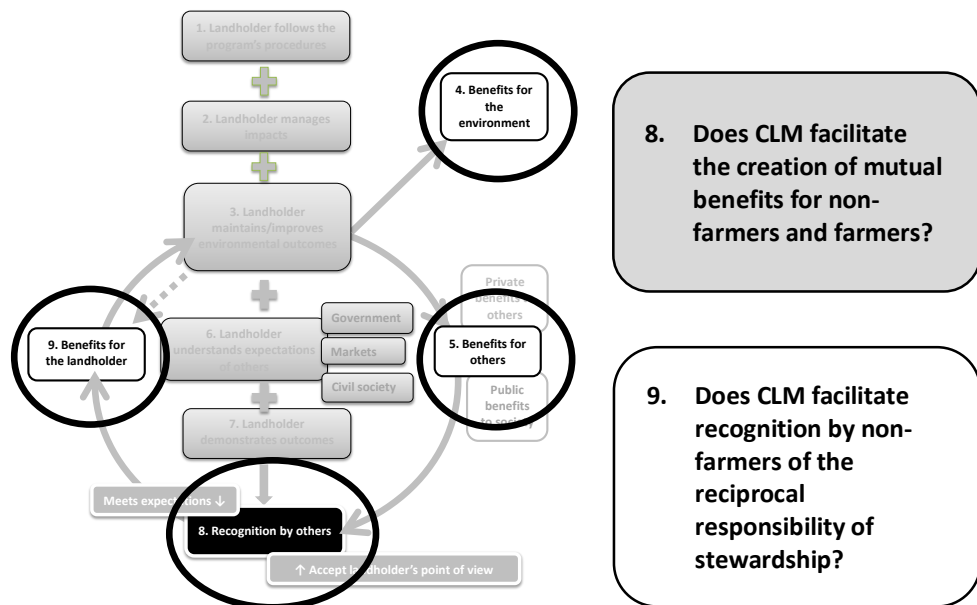
If there was a biodiversity focus ... there's probably going to be a fence that's got to be put in place, and then there's going to be a monitoring site and there's an indicator of what we're looking for. In other words, we want to see an increase in range of shrubs and medium trees because we assume the bigger trees are probably the survivors under the current system. Then maybe, depending on what was driving that from back with the aspects, etc. is there might be more wildlife we are wanting to see evidence of.

A participant is likely to become initially certified around the time of the Review Workshop, when a CLM trainer (who is also an ALMG-accredited auditor) conducts a field review and a desk-top audit of the participants' compliance with their plan. Successful audit and inspection results in certification to the Eucalyptus category. A

⁴¹² Ideal feature 11: measurable outcomes.

participant is required to maintain certification by annual desk-top audit by an auditor and annual report by the participant. Once every three years, the audit must occur on the participant's property.

5.3.8. Elements 4, 5 and 9, Research Question 8: Mutual Benefits, and Element 8, Research Question 9: Recognition



Participants can use their CLM certification to pursue market advantages, access government grants and concessions, and negotiate with concurrent land users, such as mining companies. Certification allows participants access to the CLM brand, a certification trade mark under the *Trade Marks Act 1995* (Cth). Potentially, external stakeholders can use CLM's certification process and brand as a part of their own marketing campaigns.

5.3.9. Summary of Potential Benefits of CLM Design

CLM offers a number of potential benefits, including:

1. Production efficiencies, product differentiation and access to markets, protection of social licence, and access to government incentives and concessions;
2. Mitigating the risk of prosecution, and ensuring ongoing access to natural resources;
3. Individual self-esteem, confidence, a sense of professionalism and ethical accomplishment, and the opportunity to work with like-minded people;

4. Improvement of the biophysical environment on- and off-farm, and improved animal welfare;
5. Operations consistent with the policy of Federal, State, and local governments and catchment authorities or regional NRM bodies;
6. Integrated property planning across differing land types, tenures and enterprises; and
7. Improved communication with outside agencies and concurrent land users (e.g. mining, oil and coal seam gas companies).

Some distinctive characteristics of the CLM system include:

- *ISO-consistent and automated functions*: Interpretation and application of the ISO standard to any enterprise typically requires specialist advice. The CLM system has embedded this in *myEMS* to guide the participant in developing and monitoring their own plans.
- *Activities, aspects, impacts, prioritization, and management plans*: The *myEMS* database provides sample responses for landholders in constructing the sequence of elements necessary for the review outlined in the ISO standard, namely: landholder activities, the aspects of those activities that may have environmental impacts, and the nature of those impacts. These responses can be customized. The landholder ranks the impacts and identifies their causes, leading to management objectives, strategies, targets, indicators and monitoring requirements. To work through this process ‘from scratch’ would entail considerable time and effort, and possibly the use of consultants.
- *Information resources*: Embodied in the system are information resources. Some would be costly and difficult to obtain otherwise. Notable is a comprehensive dataset of legal requirements for farming activities – an aid to self-evaluation of compliance.
- *Peer support*: Participants benefit from group training and individual advice. Participants also have the opportunity for peer reinforcement at regular CLM events.
- *Staged involvement*: The CLM system allows for a staged engagement by participants, to accommodate their circumstances and their capacity. The three

categories of certification allow engagement to be tailored to the needs, capacity and interests of the participant.

- *Biodiversity, animal welfare, catchment planning*: CLM particularly draws participants' attention to biodiversity conservation, animal welfare, and catchment planning targets. Each of these areas has a significant public interest aspect.

5.4. Farmers' Perceptions of CLM

This section investigates participating and non-participating farmers' perceptions of CLM, sourced from the farmer interviews and surveys. In line with the commitment to interviewees, identifying details have been removed or replaced with pseudonyms.⁴¹³ Results for the interviews are reported in narrative style and results from the surveys are summarized on a simple majority basis (i.e. at least four CLM participant respondents, and six non-participants). No other statistical analysis was performed.

Chapter 3 (Methodology) noted the interview and survey questions combined Elements 1 to 3 (Procedures, Managing impacts, and Achieving outcomes, respectively). To preserve the insights, the analysis of Elements 1 to 3 is structured around the major themes of the interview and survey questions, noting how they relate to the three elements, rather than around the elements themselves.

The CLM case study involved cattle producers in the south-west Queensland rangelands (some had mixed pastoral and cropping enterprises). This is a significant type of landscape for nature conservation reasons. The landscapes of pastoral properties are generally less altered than cropping landscapes. Grazing livestock is arguably more compatible with the retention of native vegetation for pasture, shade and shelter, compared with modern cropping enterprises in which native vegetation must be completely removed from the direct cropping site. The economic cost of converting cropland back to functioning native woodland (were it desirable for biodiversity conservation) is much higher than converting or co-managing pastoral lands for the same purpose. This cost includes the higher costs of reclaiming a highly

⁴¹³ Pseudonyms used for CLM participants: Alec, Colin, Jane, Terry, Yvonne and John; for non-participants: Gordon, Ben, May, Chris, Joanne, Josh, Margaret, Donald, Sam, David, Kate and Dan.

altered landscape, and the opportunity cost, given cropping is usually a higher economic use of land than grazing the rangelands. Conversely, given the semi-arid nature of the Queensland rangelands, they tend to be relatively fragile and slower to respond to degradation episodes than the more fertile cropping lands with higher rainfall further to the east.⁴¹⁴

This combination of factors suggests the rangelands may become a specific target of future government and environmental NGO concern – the rangelands landscapes are closer to the ‘natural’ landscape, and can be preserved in this state for far less cost than highly altered cropping landscapes, but at the same time the rangelands are peculiarly vulnerable to the impacts of agriculture. Thus, CLM provided an opportunity to investigate the experience of pastoral landholders using VSPs to make a case that they are good custodians of the rangelands.

All CLM participant and non-participants were principals, partners or staff of their family businesses, mostly resident⁴¹⁵ on their properties in the Maranoa district of Queensland between Morven and Yuleba (see the map, Figure 5.3). All properties ran pasture-fed beef cattle operations, on a dryland broadacre basis (with one operating a feedlot to supplement dryland grazing). Most had additional enterprises, usually broadacre dryland cropping and/or pasture and fodder production. All properties were in the thousands to tens of thousands of hectares with cattle herds numbering hundreds to thousands. The estimated average age⁴¹⁶ was about 50 with CLM participants being on average a few years older than non-participants. The highest educational levels attained by landholders were evenly spread across high school, TAFE/trade/diploma, and university. CLM properties tended to be more westerly, which affects rainfall and enterprise choice (lower rainfall in the west means a greater emphasis on pastoral than cropping activities).

The rationale for the NEP score test is explained in Chapter 3. As the samples were small (6 respondents for CLM participants and 12 for non-participants), and purposefully selected, the analysis does not represent NEPs for CLM participants or

⁴¹⁴ Anita K Smyth and Craig D James, 'Characteristics of Australia's Rangelands and Key Design Issues for Monitoring Biodiversity' (2004) 29 *Austral Ecology* 3.

⁴¹⁵ Ben and May lived in the small town near their property.

⁴¹⁶ Not all landholders provided age details so the average is an estimate based on the researcher's observation in the interviews.

non-participants generally. The Cronbach's alpha for the entire sample (CLM + non-participants + FOGG + ACO) is 0.83, indicating high internal consistency across items. Given the small sample size of each group, it was not appropriate to formally test for statistical significance, but looking at the means (see Table 5.4), the consistency between CLM participants and non-participants suggests that, at least as far as this test can posit, the landholders in the two groups brought broadly similar ecological attitudes to the interview. The NEP results are evidence (though by no means proof) that the sampling procedure did not unconsciously bias CLM.

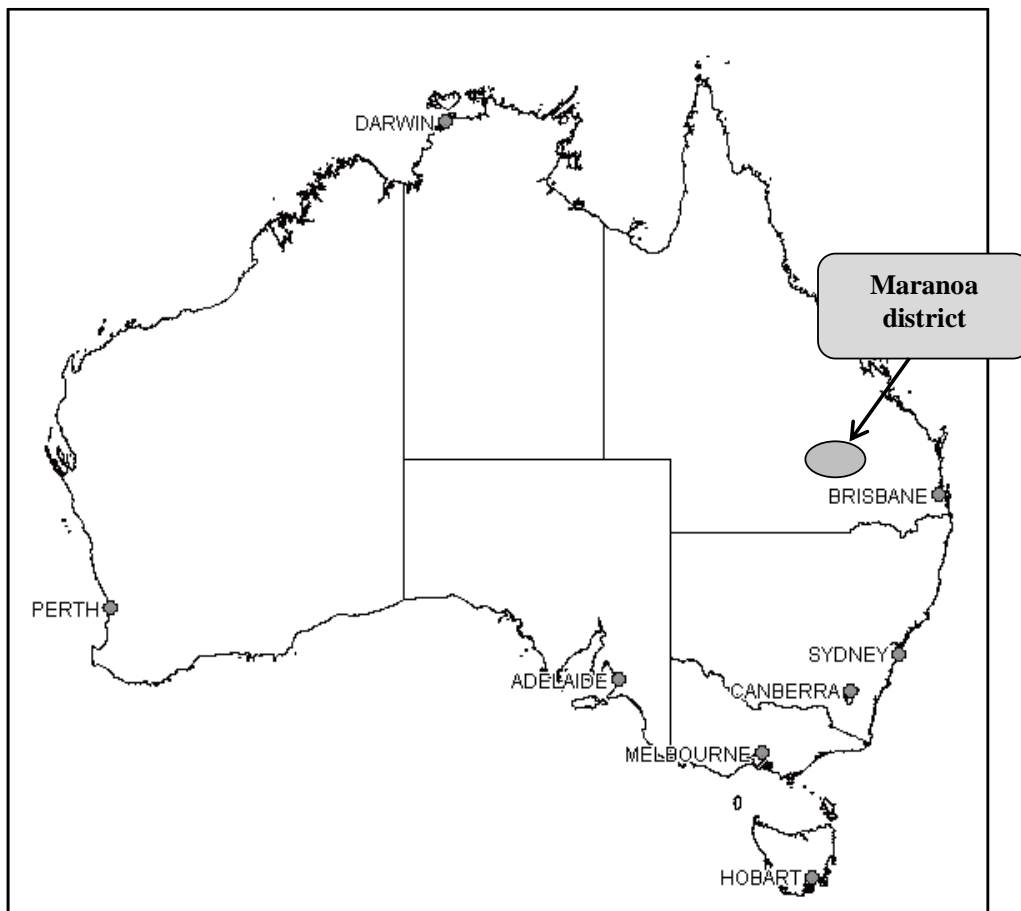


Figure 5.3: Location of CLM case study interviewees

(Base map: ©The University of Melbourne 2001)⁴¹⁷

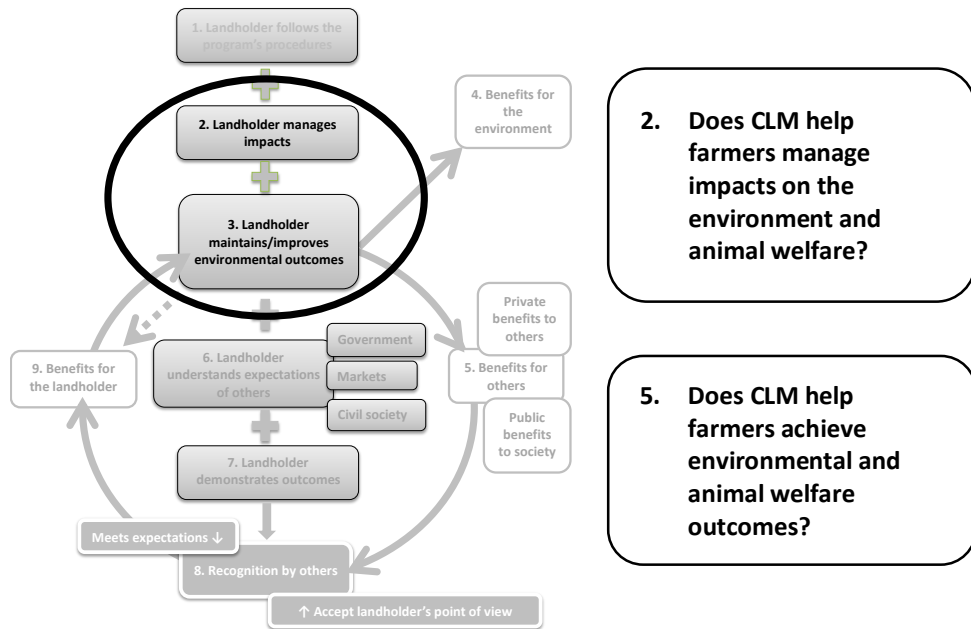
Table 5.4: Mean NEP scores for CLM participants and non-participants

Cohort	Sample size	Gender (% male)	Age (m)	Scale length	Mean NEP
CLM	6	66	56	15	3.61
Non-CLM	12	73	48*	15	3.62

* Estimated mean, as not all respondents reported age

⁴¹⁷ University of Melbourne, *Map Collection - Outline Maps*
<http://www.lib.unimelb.edu.au/collections/maps/digital/outline-maps/>

5.4.1. General Perceptions of Environmental and Animal Welfare Issues: Element 2 and 3, Research Questions 2 and 5: Managing impacts, and achieving outcomes



When describing their enterprises in the survey, most landholders did not regard themselves as having ‘ecosystems services’, ‘environmental management’ or ‘nature conservation’ enterprises, even though all respondents manage significant natural resources as part of their operations.⁴¹⁸ There were three exceptions out of the 18 landholders surveyed for the CLM case study. Only one – a CLM participant – regarded 'environmental management' as one of his enterprises across his *whole* property of more than 30,000 ha. Another CLM participant regarded 'environmental management' as one of his enterprises in several thousand hectares of 'wilderness' covering over a third of his total holding. One non-participant regarded ‘nature conservation’ as an enterprise in an area of almost 100 ha of remnant vegetation (less than 1% of his landholding).

Respondents were asked to rate 12 pre-set environmental issues and four animal welfare issues, with results shown in Appendix 11. The results reveal broadly similar profiles between cohorts, as most issues were important to most respondents in both cohorts. For both cohorts, greenhouse gas issues were not rated strongly. Only three individuals (one CLM participant, two non-participants) rated greenhouse gas issues

⁴¹⁸ FS Qs 1, 5 & 7.

as important or very important. ‘Climate issues’ (which could include rainfall, drought and general climate variability) were important for both cohorts but most landholders in both cohorts generally did not seem to connect climate issues with greenhouse gases and anthropogenic climate change.

The landholders interviewed had a strong sense of the history of their families’ involvement in the district,⁴¹⁹ and many could trace their links to their farms over generations.⁴²⁰ Though the narratives showed a respect for forebears,⁴²¹ interviewees were candid about the degradation caused in the past, albeit with a focus on production, such as soil erosion, rather than issues such as biodiversity loss or off-farm impacts.⁴²² Landholders were keen observers of the natural environment on their farmland,⁴²³ and expressed a sense of the beauty and specialness of their landscapes.⁴²⁴

Landholders had a strong sense of farming being a profession in which expertise accumulated over years of practice, and the application of local knowledge remained crucial.⁴²⁵

Family farming brought with it an intergenerational consciousness and a strong sense of place.⁴²⁶ Family farms have their own challenges in succession planning, but the longer-term perspective that the family element brings was important for riding out tough times.⁴²⁷ Short-term profit was important, but not the only motivation for environmentally focussed action on farms.⁴²⁸

Both CLM participants and non-participants believed that environmental management and profitability go hand-in-hand.⁴²⁹ Both cohorts were willing to undertake pro-

⁴¹⁹ Eg, John.

⁴²⁰ Gordon, Alec, Jane, Terry, Ben, Chris and Josh, David.

⁴²¹ Eg, Gordon.

⁴²² Ben.

⁴²³ Margaret.

⁴²⁴ John, David, Kate.

⁴²⁵ Donald, Sam.

⁴²⁶ Ben, Gordon.

⁴²⁷ Kate.

⁴²⁸ Josh, David.

⁴²⁹ John, Ben, Donald, David.

environment practices that were beneficial for their businesses.⁴³⁰ The overlap of public and private interests means that some farmers refer to some management techniques and practices in environmental terms, whereas an outsider may see them as purely a private interest concern.⁴³¹

Despite the instances of non-profit motives, the economic imperative is never far away for both non-participants and CLM participants,⁴³² and landholder perspectives on the environment have a strong focus on the health and integrity of their commercial production base.⁴³³ Landholders' framing of environmental issues showed deep reflection, observation and research, but is differently constructed from some environmental activists' perspectives, especially on the negative impacts of native plants and animals, as in this conversation with Alec about environmental problems on his land:

First and foremost is the number of kangaroos. It's outstanding – head and shoulders above everything else. As far as it's a landcare issue, it's a land degradation issue of major proportions, to the extent that you wouldn't bother mentioning anything else for fear of taking away some of the impact ...⁴³⁴

The interviews revealed the intricacies of managing land. Management of pastures and grazing animals is complex and decision-intense, requiring skills acquired over many years of practical experience. A manager of livestock must balance financial considerations, meteorological assessments, pasture growth, the preservation of genetic resources accumulated over generations, animal welfare, and critical considerations related to the animal's individual status (pregnant cow, dry cow, heifer, bull, steer, calf). Grazing management is highly contentious, with much room for disagreement about the different techniques, such as rotational grazing and set-stocking, and robust argument amongst the schools of thought.⁴³⁵ Suffice to say, there is no settled system of rules that can be definitively laid down and even landholders regarded as experienced cattle producers and good environmental operators can

⁴³⁰ Jane, David.

⁴³¹ Jane.

⁴³² Donald, Colin.

⁴³³ John.

⁴³⁴ Alec. Similarly for Jane.

⁴³⁵ Gordon.

disagree. This tends to support the assertion that land management is a difficult arena for rule setting by remote interests or centralized government.

Two tropes appeared in the narratives of both CLM participants and non-participants; namely, the dynamism of ecological processes, and ecological imbalance. These themes were often invoked in relation to the landholders' concerns about native macropods and the regrowth of native vegetation, and as a justification for their approach to these issues. The two themes were deeply interconnected – the dynamism of the landscape made it susceptible to imbalance, and imbalance itself created new and unanticipated dynamic effects.

The longevity of the landholders' experience in the district and their strong sense of place put them in a strong position to make observations and connections over a lifetime.⁴³⁶ CLM participant Colin noted he lived in a landscape in flux but CLM helped him cope with the unpredictability of a dynamic landscape:

We're always going to get droughts and bloody floods and bushfires and stuff, but if you've got procedures in place hopefully it'll be less stressful and less damaging to the environment.⁴³⁷

Some landholders⁴³⁸ framed their understanding of the environment in terms of ecological 'imbalance':

I don't know how – we've sort of got a little bit of imbalance here at the moment, because when we first got this place there was a lot of dingoes here and the wallabies weren't as bad as they are now, but because we've cleaned ... the dingoes up, now the wallabies seem to have bred up, because that's what they lived on.⁴³⁹

The factors causing the imbalance were acknowledged to be incompletely understood but some landholders associated the imbalance with the consequences of European

⁴³⁶ Terry.

⁴³⁷ Colin.

⁴³⁸ Alec, David.

⁴³⁹ David.

colonization. CLM participant Alec reasoned that colonial and post-colonial agriculture have increased kangaroo numbers far beyond their pre-colonial population:

[S]o today we provide water for them, we clear the land, we grow buffel grass, they love buffel grass. So from that point of view, white man has created the environment which kangaroos can thrive in.

Other consequences of colonization – intended and unintended – were cited by landholders as upsetting the natural equilibria of the landscape, including the damaging effects of introduced species, such as camels in fragile arid ecosystems, cats and foxes on native wildlife,⁴⁴⁰ prickly pear,⁴⁴¹ and the loss of Indigenous peoples' fire regimes.⁴⁴² Colin describes the interaction of changed fire regimes, over-grazing and changed hydrology:

[A] lot of this country's degraded because of the thickening of the ... cypress pine and the regrowth. And we can argue what caused that, but something we've done caused it. They were prickly pear blocks ... so maybe when the pear moved out there was a bit of a void and the pine moved in, but everyone said just not enough fires. But I really don't think it's just fires because the pine moved out onto box country ... [W]hen the pear moved out they were used to running a lot of cattle because they used to eat pear and they didn't have to water much. And it became a bit bare and too many cattle. That other sort of box country and that eucalyptus type country got a lot drier because we bared it with the cattle and stuff. So the water ran off, it became dry.

Landholders were aware that their connection of colonial and post-colonial agriculture with ecological imbalance caught them in a conundrum.⁴⁴³ Their agricultural practices – such as productive pastures and watering points for stock – are critical to the success of their enterprises, but simultaneously cause problems that are detrimental to their enterprises, such as kangaroo numbers. To resolve the dissonance caused by the dilemma, landholders referred to their role as one of correcting the imbalance, and this

⁴⁴⁰ Donald.

⁴⁴¹ Gordon.

⁴⁴² Ben.

⁴⁴³ Alec, Sam.

role was both a prerogative and a responsibility, as seen in Alec's comments on kangaroos:

[W]hite man has created the environment which kangaroos can thrive in. I really believe that we need to be given the opportunity to control the imbalance that we've created.

Kangaroos were said to be problematic because, *en masse*, they prevent graziers adopting practices that are beneficial for production and environment, such as rotational grazing.⁴⁴⁴ The kangaroo problem also challenges the conception of nature and naturalness because, for some landholders, kangaroos were not just a production problem but a nature conservation problem.⁴⁴⁵

Kangaroos were not a problem for every interviewed landholder. CLM participant Colin explains the interaction between kangaroos, dingoes/wild dogs, disruption of Indigenous hunting practices, and colonial interventions aimed at supporting agricultural development, such as the wild dog barrier fence:

[I]n a lot of places they are [a problem]. Here, probably not so much because we've probably still got a few dogs – inside that netting fence they're more of a problem because they've taken the dogs out. They've taken the two predators out: the Aboriginals and the dingoes actually, and put water and feed around, so they're probably more of a problem inside the netting fence.

This unintended consequence of the wild dog barrier fence was confirmed by those *inside* the barrier.⁴⁴⁶

Whilst the weather, seasons and climate variability were commonly discussed by CLM participants and non-participants, the prospects of anthropogenic climate change disrupting their farming systems was rarely mentioned. The two exceptions were observations by the oldest (Ben, 70 years) and youngest (Josh, 22) landholders interviewed, both non-participants. Ben made the observation while talking about changing the breed of his cattle herd:

⁴⁴⁴ Sam.

⁴⁴⁵ Alec, Sam.

⁴⁴⁶ Alec.

I've changed breeds for one reason, because I am concerned about the environment, the changing climates, and drier summers.

Josh's perspective may represent an intergenerational change, as his views diverged from his parents, who were interviewed with him.

Interviewees commented on demographic factors that impact on the capacity of rural Australians to manage for environment and animal welfare.⁴⁴⁷ Population decline magnifies the problem of environmental and agricultural management with an already low and dispersed population:

[F]arms are getting bigger and they have to, to remain big enough to be efficient and then ... you have a lot of absentee landlords. Then the feral animals get more out of control. You know not as many people around to fight bushfires. There's just less people in the country out here than what there were before.⁴⁴⁸

The discussions on animal welfare mirrored the discussions on environment. Like environmental concerns, both CLM participants and non-participants tackle animal welfare mostly from a production angle.⁴⁴⁹ The critical importance of feed during droughts overshadowed discussions on the possible pain and suffering involved in husbandry practices.⁴⁵⁰ Similarly, the conversations around kangaroo numbers focussed on their perceived threat to the environment and production, and by implication the welfare of domestic livestock, rather than the pain and suffering of culling to kangaroos themselves.⁴⁵¹ Humane treatment of pest animals has been on the agenda of animal welfare organizations for over a decade,⁴⁵² but does not appear from the above results to be on the landholders' radar.

Like the environment discussions, CLM participants and non-participants linked good animal welfare outcomes to production and profitability.⁴⁵³ Both CLM participants

⁴⁴⁷ Gordon.

⁴⁴⁸ Sam.

⁴⁴⁹ Jane, Gordon, Terry.

⁴⁵⁰ Colin.

⁴⁵¹ Alec.

⁴⁵² See RSPCA, 'Kangaroo Shooting Code Compliance: A Survey of the Extent of Compliance with the Requirements of the Code of Practice for the Humane Shooting of Kangaroos' (Report to the Commonwealth Department of Environment, 2002).

⁴⁵³ Colin, David.

and non-participants positioned welfare and cruelty against the backdrop of the harshness of life in the rangelands. For these landholders, cruelty is a relative concept, assessed against all the other unavoidable vicissitudes and hardships that animals and humans confront in that environment:

[S]omething like dehorning is traumatic to an animal but they seem to get over it pretty quick ... life's tough for all of us sometimes. I don't think you want to be cruel.⁴⁵⁴

5.4.2. General Perceptions of CLM: Element 1, 2 and 3, Research Questions 1, 2 and 5: Following procedures, managing impacts, and achieving outcomes

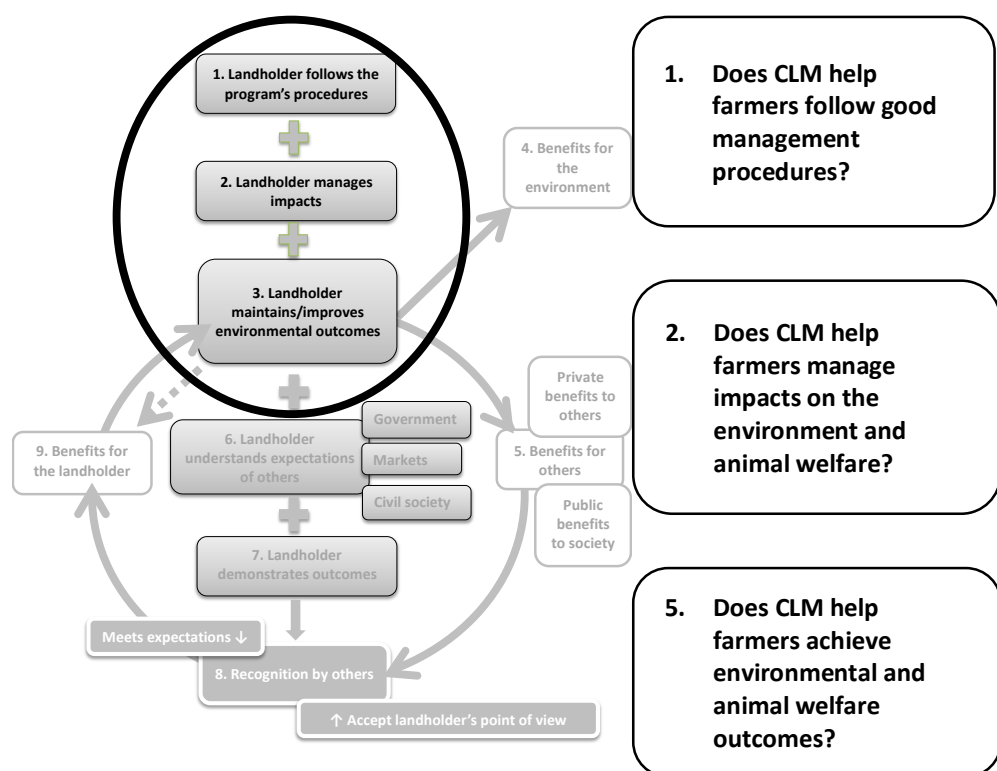


Table 5.5 consolidates landholder profiles using the matrix shown in Appendix 6, which covers the modified Bennett's hierarchy across the six domains described in Chapter 3.⁴⁵⁵ As noted in Chapter 3, results are not strictly comparable given that a different question was asked of participants and non-participants, and comparison is indicative only.




⁴⁵⁴ Dan.

⁴⁵⁵ FS Qs 6, 8, 11, 14, 19, 26.

The overall picture shown in the table is of a positive perception of participation in CLM, with improvement in the first four levels of the hierarchy, and a fairly positive picture of practice change (both intentional and actual). The support for CLM is particularly strong in relation to the domains of *Environmental Management* and *Demonstrating Outcomes*.

Table 5.5: Respondents' perceptions of their own management in six domains

Level in modified Bennett's Hierarchy	FOR CLM PARTICIPANTS: As a result of participating in CLM, do participant-farmers believe they:	Domains					
		Environment	Animal welfare	Monitoring	Laws & Regulations	External stakeholders' expectations	Demonstrating outcomes
6.	– Have <i>changed</i> practices in relation to the domain?						§
5.	– Intend to change practices in relation to the domain?						
4.	– Have more skills for dealing with the domain?						
3.	– Are more confident in dealing with the domain?						
2.	– Are more convinced of the benefits of dealing with the domain?						
1.	– Have improved their knowledge of the domain?	**					
	FOR NON-PARTICIPANTS: In managing for environment and animal welfare generally, do non-participant farmers believe they:	Environment	Animal welfare	Monitoring	Laws & Regulations	External stakeholders' expectations	Demonstrating outcomes
6.	– Have <i>changed</i> practices in relation to the domain?						§
5.	– Intend to change practices in relation to the domain?						
4.	– <i>Need</i> more skills for dealing with the domain?						
3.	– Are confident in dealing with the domain?						
2.	– Are convinced of the benefits of dealing with the domain?					§§	
1.	– <i>Need</i> to improve their knowledge of the domain?	**					

Key:  = majority agree*  = majority disagree*  = evenly weighted agree/disagree*

* 'Agree' = strongly agree + agree. 'Disagree' = strongly disagree + disagree

**Two-part question: environmental knowledge (a) on-farm, and (b) in the wider district. Results were the same for each question.

§ Instead of 'actual practice change', this level was re-framed as whether the respondent had successfully demonstrated outcomes to external stakeholders to date.

§§ 5 agree; 5 disagree; 1 don't know.

Overall, non-participants do not perceive a need to improve their knowledge and skills. They do not intend to change practice in relation to any domain. Actual practice change in relation to the domains is mixed: most non-participants reported actual change in three domains; and no change in the other three, including *Compliance with Laws and Regulations*, and *Expectations of External Stakeholders*. On the whole, non-participants are already convinced of the efficacy of dealing with most domains and feel confident they can deal with most domains. The exception is *Expectations of External Stakeholders* where the perceptions were negative across almost every level of the hierarchy, including a lack of confidence in dealing with those expectations, and mixed attitudes towards the benefits of dealing with them.

5.4.2.1 CLM Participants' Perceptions of CLM

CLM was attractive to participants for its reinforcement of their environmental values.⁴⁵⁶ For Jane, CLM matched her interest in holistic planning and management, and she likened participation in CLM as a *reward* for past diligence and efforts to educate herself.

CLM participants see CLM as a means to enhance their professional status and help them in negotiations with external parties. This was illustrated by John, a CLM participant, dealing with a coal seam gas (CSG) company that had exploration and extraction rights on his land. John believes CLM enhanced his professional standing and provided him leverage when negotiating with the CSG company:

If you go and say, 'I'm a farmer and I really look after my land. I don't want you on here because of this and I don't want noise because of that and I don't want whatever' and they say, 'Oh, well, that's all great and wonderful but the reality is we need to do this', whereas if you can go to them and say, 'Well, we actually want those for visual amenity under our certification; visual amenity is part of our thing and we're going through an ISO compliant certification system', well suddenly they go, 'Oh, shit ... this is real!'

Some participants⁴⁵⁷ placed CLM in the context of a positive attitude to continuous learning:

⁴⁵⁶ Alec.

⁴⁵⁷ Terry, Jane.

Continued education is just a must ... I get quite frustrated and offended by people that don't invest time to continually educate themselves and be informed about the changes, and about agriculture, what direction it's going in, what's happening and what's not happening.⁴⁵⁸

The social learning and peer interaction aspects of CLM were highly valued by participants.⁴⁵⁹ Long-term CLM participants have learnt together as a part of a bigger experiment:

[When CLM commenced] we all felt like guinea pigs. It was a paper based thing when we first started and it was bloody hopeless. It was mainly set up for mines and factories and things. We had to try and adapt it to the [agricultural] environment.⁴⁶⁰

CLM participants talked about their changed perceptions of the landscape.⁴⁶¹ Here, Alec reflects on life-long, experiential learning:

When I first started going down [to Victoria] in about 1977 ... I looked at that country and I thought, 'I'd love to have my place cleaned up like that' and that they were 40 years ahead in their property development to what we were. And then as you move through life and you get to understand a little bit more about how the environment works, I decided that wasn't really where I wanted to go at all.

John was one of the few landholders who reflected on the changed role of farmers in the era of multi-purpose farming:

We're still not seen as environmentalists whereas I believe as farmers we are, but to me this [CLM] is a bit of a stepping stone to get to it.

CLM was seen as providing independent verification of participants' management,⁴⁶² and CLM participants were sensitive to the need for the process to be seen to be credible.⁴⁶³ Several CLM participants referred to the biodiversity monitoring

⁴⁵⁸ Terry.

⁴⁵⁹ Terry, John, Jane.

⁴⁶⁰ Colin.

⁴⁶¹ John.

⁴⁶² John.

⁴⁶³ Colin.

undertaken by a local ecologist engaged by ALMG. Terry saw this as setting a baseline or benchmark for negotiations with CSG companies, and Alec envisaged that it could be used in negotiations with the government on native vegetation issues, and for testing his own views:

[W]e've used it to support our own beliefs; to keep our beliefs up to scratch.

Terry saw the independent verification benefitting the taxpayer:

I have always had an axe to grind about this. When you are receiving external funds, taxpayers' funds, I think that CLM is very complimentary to that system. So that you actually have, if you like, a third party input. And personally myself, I think that most of those funding arrangements should have that.

More than one CLM participant highlighted their pre-existing interest in external scrutiny and they were attracted to CLM because of its requirement for independent verification:

[I]'ve been trying the various QA [quality assurance programs], and have always had this belief in wanting that third party endorsement.⁴⁶⁴

For Terry, certification schemes help him respond to changing values around the world. His interest in external scrutiny coalesced with other influential factors:

[W]e have always been conducive, I guess you'd say, to externally audited programs.

Independent verification was closely linked to systematic record keeping. Participants anticipate that requirements for documentation will become more stringent and CLM provides a framework for maintaining documentation up-to-date.⁴⁶⁵ CLM plays a preparatory role, readying landholders for a future in which compliance and verification measures will be the norm.

Most of the CLM participants interviewed reported receiving external funding as a result of participation in CLM, mainly on-ground projects funded by the local regional

⁴⁶⁴ John.

⁴⁶⁵ Jane.

NRM group. Most expressed regret that participation in CLM has not resulted in a more consistent income stream from external sources, either public or private.⁴⁶⁶

In any voluntary environmental program, there will be arguments about whether the right balance has been struck between the needs of a critical mass of participants and the needs of front-runners for ambitious challenges. For long-term participant, Alec, CLM was not challenging enough:

I'm not doing anything different ... I'm not being told to lift my game, tidy the place up or lighten the stocking rate or whatever – there's got to be things when you look around every property, there's got to be things you can do better.

Ambitious participants like Alec can feel frustrated by the democratic nature of standard-setting in a voluntary association with a member-driven approach to governance:

[W]e had a bit of a workshop ... wondering how to include an animal welfare element into the manual ... and there was a group of us that wanted to just pull in the RSPCA guidelines with a few exceptions and everyone else said, 'No, no, we don't want to be bowing down to the RSPCA', and we all got bogged down and did nothing.

5.4.2.2 Non-Participants' Perceptions of CLM

Despite their decision not to participate in CLM, non-participants expressed respect for the objectives of CLM, and its advocates and participants:

I still greatly admire and am very grateful for things like CLM and people ... whose lifetime obsession is to get this type of thing out there and alive, because we still need that, because we can't afford to have everybody being lazy like me ... [W]e really, really need this, and for every person that's prepared to take it up and do it properly, everybody gains, including the general public.⁴⁶⁷

However, for all non-participants, the barriers to participation loomed larger than the benefits. Non-participants' critique tended to range across practical barriers to

⁴⁶⁶ Yvonne, Terry, Jane, Alec, Colin.

⁴⁶⁷ Gordon. Similarly, Ben.

participation such as age⁴⁶⁸ or lack of time⁴⁶⁹; risk,⁴⁷⁰ the lack of interest along the supply chain;⁴⁷¹ and a perceived lack of additionality.⁴⁷²

Non-participants did not have the same sense of being involved in an experiment with CLM as participants did, and were not willing to take it on trust that a market advantage would materialize in the future:

I need a bird in the hand. I really need something I can grasp. I need a guarantee at the end of it otherwise I'm not going to bother ... But I agree with the concept, and I'd be happy to do it if it produced for me. And say if it was working and producing for my mates or my brother or neighbours, of course, you'd be in on it.⁴⁷³

Non-participants felt they would receive no support from mostly indifferent consumers:

[I]f you asked them if it was a good thing for landholders to be involved in EMS or [CLM], they'd look at you totally blank. They would not have a clue. I'll guarantee there wouldn't be one in ten thousand people in the urban areas that wouldn't have a clue and quite frankly wouldn't care.⁴⁷⁴

Nor do non-participants expect support from retailers:

[X supermarket chain] couldn't give a fuck about what represents good environmental management. They just want something that says, 'I didn't use HGP's'.⁴⁷⁵ They don't give a fuck about good dairy management. They just say there's no permeate in their milk, because the market that they're targeting doesn't give a fuck about that. Seriously, if it's got an environmental claim that isn't too whacky and a low price, they'll buy it!⁴⁷⁶

⁴⁶⁸ Ben and May.

⁴⁶⁹ Dan, Sam.

⁴⁷⁰ Dan.

⁴⁷¹ Donald.

⁴⁷² David.

⁴⁷³ Dan.

⁴⁷⁴ Donald.

⁴⁷⁵ Hormonal growth promotants.

⁴⁷⁶ Gordon.

Donald did not believe those landholders who most needed to change would be influenced by CLM:

[T]he operators that probably aren't doing the right thing or trying to do the right thing by the environment or animal welfare ... they're not going to become participants of [CLM] anyway. So I think the total effect of it mightn't be very much at the end of the day.

Non-participants questioned whether CLM would deliver any extra value over and above that which would have been achieved without it:

I know the intention is good and all the rest of it, but I think in reality what they're achieving, that most people are doing anyhow.⁴⁷⁷

Interestingly, whether the *source* of a possible reward for good performance was public or private seemed to be implicitly important to David in a conversation about the process of gaining accreditation for his beef to be exported to the EU.⁴⁷⁸

Interviewer: Did you have to change much to get the EU accreditation?

David: No, just a matter of clearing any of the bought stock that we had. At that time we didn't have many, I had a few. And then I think a couple of places that we have bought, one was walk-in-walk-out, so that herd became EU accredited, so I just had to get a letter from the owner stating that they hadn't purchased any of the cattle, that they were all bred on the property and they hadn't used any HGP's.

A similar comment was made by Sam, another non-participant about MSA⁴⁷⁹ accreditation.

5.4.2.3. Goal-Setting and Monitoring

All CLM participants reported in the surveys that they had prepared a baseline monitoring position, and most said they tracked how their efforts contributed to change

⁴⁷⁷ David.

⁴⁷⁸ Australian Government, 'European Union Cattle Accreditation Scheme - Information for Farms' (Department of Agriculture, 2014).

⁴⁷⁹ Meat and Livestock Australia, *Meat Standards Australia* <<http://www.mla.com.au/Marketing-beef-and-lamb/Meat-Standards-Australia>>.

from the baseline.⁴⁸⁰ Most said they implemented a written system for tracking progress, and that system was used in ongoing management, with management being adjusted depending on the results. Most non-participants reported that they used rules of thumb for monitoring, had prepared a baseline position, and tracked movement from the baseline, but most did not have a written monitoring system for tracking progress.

CLM participants' responses about whether they had observed any changes since they started participating in CLM ranged across many of the pre-set options (no change, improvement, improvement and worsening; and the possibility of improved powers of observation), whereas non-participants responses were strongly weighted in the 'improvement' categories. The pattern of differences may suggest greater objectivity by CLM participants, but this is merely an inference. To the extent that a landholder would need to recognize degradation before an improvement could be made, then the results above may indicate that CLM helps improve participants' understanding of degradation, as well as their monitoring capacity, allowing them to make a more critical assessment of the state of the environment and changes over time.

Most CLM participants had a favourable attitude towards goal-setting and monitoring. In Colin's view, it was important to establish a reliable baseline, but its benefits were intergenerational and may not be realized until some time into the future:

Maybe someone in 50 years' time will look back and probably get more benefit out of it than what we do.

Monitoring comes at a cost and expertise beyond most landholders, but Colin raised the possibility of lowering the costs with new technologies:

There's some technology that we want to be looking at using – satellite stuff – for doing this monitoring ... They've got a lot of history there on these properties ... I think we ought to be using that a bit more.

... and showed an openness to this new information source:

People are probably a bit nervous of it. They don't want government seeing it. But the catchments ought to be getting into it or the private landholders ought to

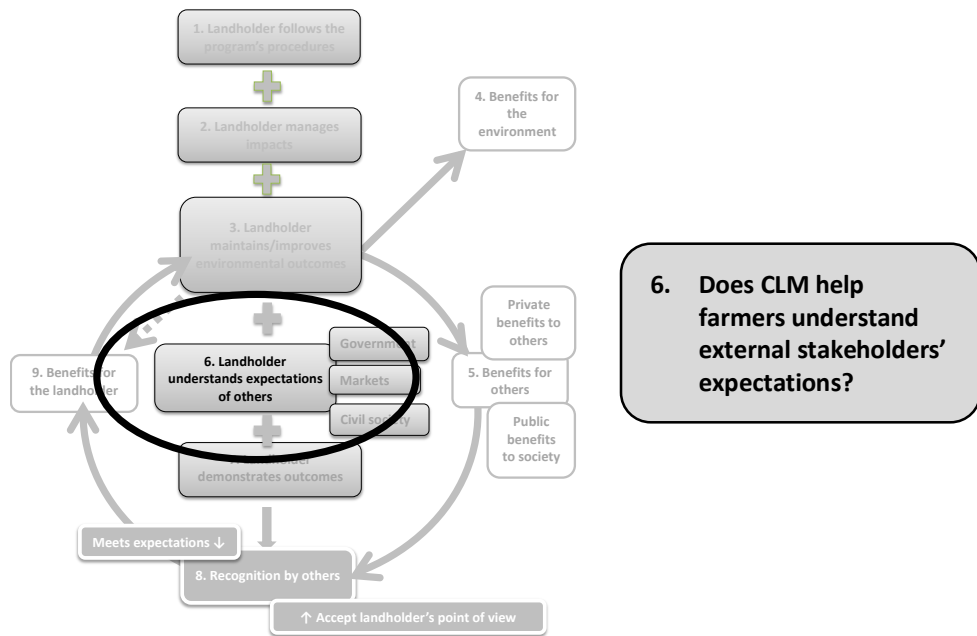
⁴⁸⁰ FS Qs 10, 12, 13.

be looking at it ... I don't think we ought to be frightened of it. I think we ought to get on the front foot and use it.

Non-participants had mixed views about monitoring for environmental outcomes. Some had clear goals and monitoring related to production parameters,⁴⁸¹ and others were ambivalent about goals and monitoring.⁴⁸² David was sceptical about the ability of voluntary programs to monitor landholders' environmental performance:

I don't know how you monitor where people are doing things wrong and regulate it ... There's a lot of what goes on that shouldn't be going on, that people don't know about anyhow.⁴⁸³

5.4.3. Element 6, Research Question 6: Understanding stakeholders' expectations



5.4.3.1. Perceptions of Laws and Regulations

In the surveys,⁴⁸⁴ with an occasional exception, most CLM participants believed that, on balance, current laws and regulations, and external stakeholders' expectations, were good for the environment and animal welfare on-property and for the wider district

⁴⁸¹ Gordon, Dan.

⁴⁸² Ben; Chris, Joanne and Josh.

⁴⁸³ David.

⁴⁸⁴ FS Qs 15-17 & 20-22.

and industry. The majority of non-participants perceive a degree of legitimacy of laws and regulations for environment and animal welfare, but the legitimacy of external stakeholders' expectations was negatively perceived. Most non-participants reported that they did not believe external stakeholders' expectations were, on balance, good for the environment or animal welfare on-property nor for the wider district or industry.

Most respondents in both cohorts believed law and regulations, and external stakeholders' expectations would become more voluminous and complex in the future. There was strong support amongst CLM participants for the role of CLM in helping them deal with these influences in the future. Non-participants who expressed an opinion about the role of voluntary programs in relation to laws and regulations were evenly divided but, interestingly, most saw a role for voluntary programs in the case of external stakeholders' expectations.

CLM participants spoke highly of the CLM legal review process and the *myEMS* legal database that facilitates it.⁴⁸⁵ For some, the legal review using *myEMS* was a revelation and they discovered legal obligations they had not been aware of previously. Landholders thus informed go on to become informal educators in their own communities and social networks:

That was just mind blowing really. To know how many laws effect, and impede, or influence what we do. And I have had a few discussions with other friends that have argued with me that that's not right. There's a lot of farmers out there, or graziers ... producers, that aren't informed, and aren't aware of many of the laws, or any of the laws ... CLM has got the computer software that just makes it so easy.⁴⁸⁶

Both CLM participants and non-participants highlighted frustrations with the legislative process, including, in their view, blinkered thinking on the wider consequences of legislation. An example of this was the halting of live exports to Indonesia from both participants and non-participants.⁴⁸⁷

⁴⁸⁵ Colin.

⁴⁸⁶ Terry.

⁴⁸⁷ Jane, Sam.

Nonetheless, and contrary to the stereotypes of vitriol and resistance that are sometimes attached to rural Queensland landholders, CLM participants expressed unexpectedly measured views on some controversial areas of legislation such as native vegetation, albeit with reservations about the details of implementation:

I believe that we had to have some laws on tree clearing. I got into a lot of trouble for saying that, with a lot of my peers because a lot of people had a scorched earth policy, and were clearing their properties from one side to the other and I really believe that we needed to, somehow, we needed to stop that. I don't agree with the way the government did it, when you get a government to do anything like that they always muck it up: I mean it's a whole subject, you could talk a week about how better we could have done it. The point was the government came in and just did what they thought was the way to go about it.⁴⁸⁸

Non-participant comments about the law tended to be more negative:

[Margaret] In a lot of land development schemes the farmers had to clear a certain amount each year. It had to clear the trees. The Brigalow scheme set in 1970's, they were still doing that, legislating or instructing the farmers clear a certain amount ... It was part of their requirement ... [Donald] Of course it resulted in over-clearing and a lot of the early leases when they were taken up after the First World War, a lot of the requirement was that they rung out so much country. Well of course it's been proven to be wrong hasn't it but that was government legislation.

The apparent inflexibility of the changed regulatory regime was galling to some:

[Y]ou had to be very careful what you were doing. It was so ... well, draconian to the point where... I mean it was just like the Gestapo. It was terrible. The tree police. And if you had a slip-up and it might be total ignorance, you could be suddenly, I mean there's satellite following you all over the place, you could be liable, find yourself liable and don't even know about it.⁴⁸⁹

⁴⁸⁸ Alec.

⁴⁸⁹ Donald.

Both participants and non-participants expressed the view that poor-performing landholders were a governance problem.⁴⁹⁰ Colin saw legislation as a tool for enforcing a minimum standard of land management behaviour for the ‘tail-enders’.

5.4.3.2. Perceptions of External Stakeholders Generally

In the surveys, respondents were asked to nominate external stakeholders who have a significant influence on their business from a list of 17 pre-set options.⁴⁹¹ Overall, the State Government appears to be the most widely perceived as significant in relation to environment. The regional NRM group plays a more important role for CLM participants than non-participants. Interestingly, environmental and animal welfare groups were not significant influencers for a clear majority of respondents in any cohort, though they were influential for about half of CLM participants and non-participants. Unexpected was the influence on non-participants of extractive industries (mining, oil, and coal seam gas), which were significant players for most non-participants in both the environmental and animal welfare fields.

There was an interesting cross-over between animal welfare and environment. Most CLM participants wanted recognition for their animal welfare outcomes from environmental groups, and half wanted recognition for their environmental outcomes from animal welfare groups. (The pattern also showed up in non-participants’ responses but not as strongly). In the interviews, landholders were very aware of animal welfare-environment linkages at the paddock level; poor environmental management, poor pasture management, and delayed decision-making around feed-budgeting and rainfall trigger-points can lead to inadequate food and shelter for animals, especially in drought, with animal welfare implications.

For Terry, understanding stakeholder expectations and their increased ability to access information were key to grabbing opportunities:

[T]oday, consumers are well-educated, well-informed, and have access to information.

⁴⁹⁰ Sam, Colin.

⁴⁹¹ FS Q 18.

While both participants and non-participants⁴⁹² had a sense of foreboding that external stakeholders would increase their influence over farm operations, CLM participants, such as Jane, were looking to CLM as a security against interventions in regard to sensitive issues. CLM is acting as a meeting place or dialogue space in which participants become aware of the risk of not engaging with external stakeholders' concerns:

You are always very aware of the fact that those people are around and I guess just meeting with them at times, at CLM days and things like that ... I think it makes us more aware that we really have to comply with all these regulations to a certain standard.⁴⁹³

But for Gordon, a non-participant, the idea of a voluntary program being a mediation space for mutual learning is illusory:

It's not their job to understand us better. I'd love it if they did. They won't have time and they won't have the interest.

Exactly which practices constitute good or bad animal welfare or environmental management are contested by farmers. Both CLM participants⁴⁹⁴ and non-participants expressed frustrations at what they regarded as narrow or uninformed external perspectives, but there was a stronger sense amongst non-participants of being under attack from urban-based social movements:

We do feel very much a minority and we feel it's very hard that so many people don't understand what we do on a day to day basis.⁴⁹⁵

... which was reinforced by the rural media:

[W]e get Country Life once a week. Most of my mates who are sane don't read it because ... it'll drive you mad, you'll want to go shoot yourself because it's just full of welfare groups whingeing about us. And it's ... downright bloody

⁴⁹² Ben, Jane.

⁴⁹³ Jane.

⁴⁹⁴ John.

⁴⁹⁵ Sam.

depressing ... You just feel so targeted and unfairly ... just constantly under siege from it all ... We just feel bloody under threat from it all.⁴⁹⁶

This notion of a clash of values spilled over to Donald's attitude about participation in stewardship programs, which had changed from supportive to sceptical over time:

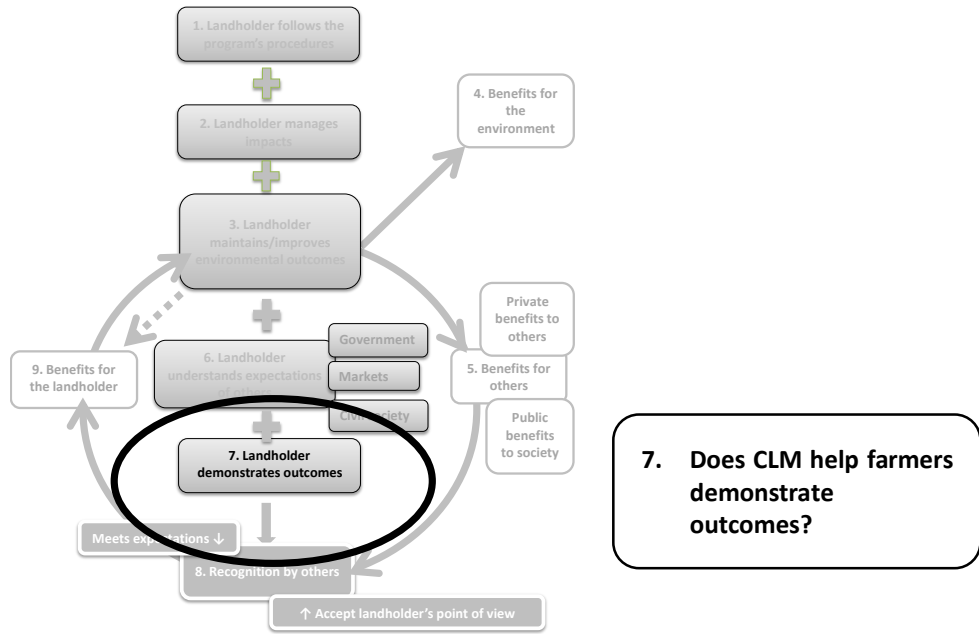
I used to think that from an industry point of view [environmental management systems for farmers] would be a really good thing because a lot of urban population don't know what we're doing and I thought this would be a way of ratifying that we are trying to do the right thing. That was my thought then but now I think the problem we have now is that you've got a lot of people who are very idealistic and they're trying to run their agenda, whether it be environmental or animal liberation or whatever and they're running their agenda on very little background knowledge of what actually happens out there.

... and the prospect of a farmer-led certification program (such as CLM) influencing this agenda seemed remote to him:

They're principally urban based people that have been fed information and quite frankly it doesn't matter what we do, we're not going to change their ideals. [T]hey're set in their ideals and we can have all of the EMSes and [CLMs] and it is not going to change their view.

⁴⁹⁶ Dan.

5.4.4. Element 7, Research Question 7: Demonstration



All CLM Participants and most non-participants agreed in the surveys⁴⁹⁷ that there will be increasing pressure on landholders to *demonstrate* outcomes, and that voluntary programs could play an important role in helping them to so demonstrate.

Most CLM participants view their management plans as a commitment to external parties, to whom they are accountable for meeting the targets. Half actively rejected the notion that their management plan was a planning or aspirational document for internal use only. Only two non-participants indicated they had a management plan in relation to the environment and animal welfare. They were divided over whether the plan was an internal document or a commitment to external parties.

Most CLM participants thought CLM’s audit and certification process was useful now and into the future. The one CLM participant who did not believe CLM’s audit and certification was useful reported that this was because of uncertainty about the benefits. Most non-participants thought auditing and certification generally were not useful currently, with a majority responding ‘not useful’ or don’t know’ for the future. A majority of non-participants nominated all four pre-set barrier options, with ‘Lack of benefits to offset the costs’ being the strongest barrier (the other three being: costs;

⁴⁹⁷ FS Qs 23-25 & 27.

uncertainty about the benefits; and complexity). Three non-participants noted 'time' as an additional barrier to participation.

To elucidate views of demonstration, landholders were asked in the interviews how they would respond if an external stakeholder with some potential influence on their business asked them to *demonstrate* good management or *prove* their environmental and animal welfare credentials. An opening response from both participants and non-participants was a farm tour.⁴⁹⁸ Some CLM participants include record keeping as a facet of demonstration,⁴⁹⁹ and others⁵⁰⁰ pointed immediately to CLM as an organizing framework for demonstration. Donald, a non-participant, recognized this was not an option for him:

Yeah that's a really good question because we wouldn't be able to say the simple answer, which is, 'We're a member of the [CLM] group'. That would be the simple answer wouldn't it? You'd go in there and say here's our little certificate ... So we can't do that.

John, a CLM participant, expressed openness for dialogue and exchange in demonstration. He expressed enjoyment at the interactions involved in demonstrating his land management to others and sees it as an opportunity for constructive, critical feedback.

Non-participants question the benefit of collaborating with movements perceived to be antithetical urban ideologies. Kate speculated whether demonstration to external stakeholders represents the start of an incremental process of disciplining farmers: 'Is it the thin edge of the wedge?'

Not all non-participants were against independent auditing or outsiders scrutinizing their operations. Ben had an accredited feedlot that required a considerable amount of accounting to outside agencies, and David expressed a positive attitude about showing outsiders his operations.

⁴⁹⁸ John, Chris

⁴⁹⁹ Jane.

⁵⁰⁰ Colin, Alec.

The CLM participants who exhibited the most excitement about CLM tended to be those who used it as one tool in a suite of measures oriented towards education, transparency, demonstration, and engagement with outsiders. For Jane, CLM complemented previous educational qualifications on rangelands management. For Terry and Yvonne, it combined well with organic certification. John combined CLM with social media platforms. In all these cases, participants had expectations that CLM would deliver benefits, but their attitude was not singular in focus – CLM worked as a part of a *package* of initiatives.

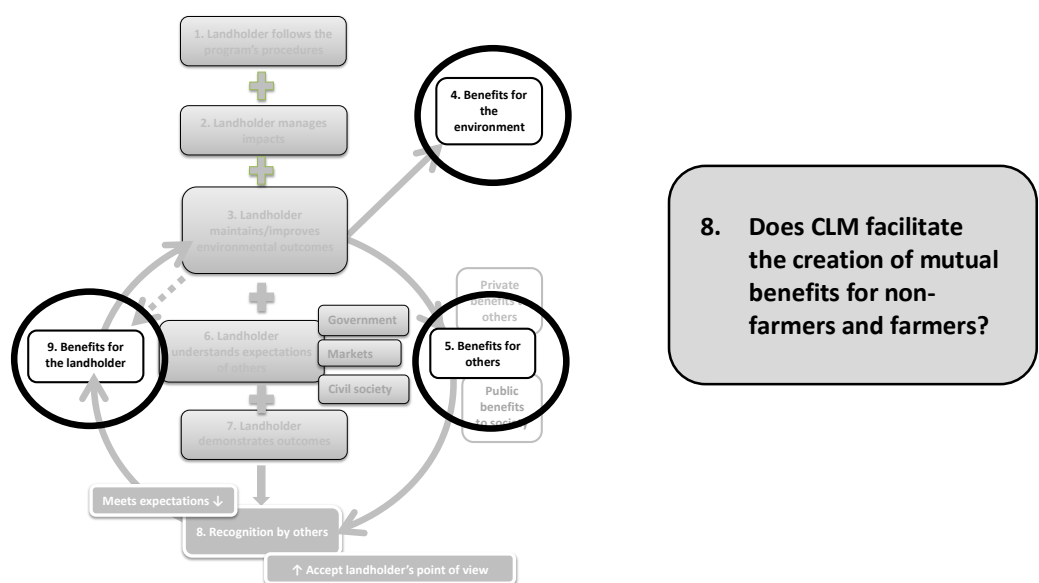
John was making use of several social media platforms to communicate his business operations and philosophies, and believes CLM integrates well into this mix. For John, this is part of an overall attitude towards transparency:

It's showing what's happening, showing exactly what we're doing, warts and all.

John believes CLM has potential to develop further synergies with social networking technologies:

To me, for CLM to really fire is when you can do exactly that – putting it into *myEMS* and as you're riding along you can punch on [your smartphone] for your report and send it off to PETA or Animals Australia, 'Look how we're looking after these cattle, stinking hot day and we've stopped at a water hole by the creek'.

5.4.5. Elements 4, 5 and 9, Research Question 8: Mutual Benefits



Section 5.4.2 ‘General Perceptions of CLM’, records CLM participants’ perceptions of the benefits they were gaining from participation in CLM, as well as their perception of benefits to the environment, animals and other stakeholders generally, as relayed in the interviews. In the survey, respondents were asked to select in the surveys any (or none) of a pre-set list of 41 hypothetical benefits,⁵⁰¹ divided into six broad categories:

- A. Productivity, financial and other business benefits
- B. Risk management benefits
- C. Benefits to others - family, staff, community, industry, etc.
- D. Personal and intrinsic benefits
- E. Benefits to the environment and animal welfare
- F. Benefits for planning

CLM participants were asked whether any of the pre-listed options was a benefit of participating in CLM. Non-participants were asked about the benefits of managing for environmental and animal welfare outcomes generally.⁵⁰² Respondents were asked to nominate benefits currently received, as well as benefits anticipated in the future. The hypothetical benefits nominated by a majority of respondents, as well as those least supported are shown in Appendix 12.

The current benefits of participating in CLM seem fairly specific, clustered around categories D (personal and intrinsic benefits) and F (planning benefits). Most CLM participants anticipated a range of future benefits centred on category A (productivity, financial, and other business benefits). This is significant because it shows a willingness to forego immediate economic benefits, provided these are delivered at some point in the future. The benefits of non-participants managing for environment and animal welfare generally are spread widely across all six categories.

The options that were least nominated provide some insight into why a respondent might not become involved with a certification scheme or with managing for environmental and animal welfare outcomes. The logic here is:

⁵⁰¹ FS Q 9.

⁵⁰² Of course, CLM Participants may also have received these benefits, but their responses specifically relate to benefits resulting from participation in CLM, not benefits of environmental and animal welfare management generally.

If you are not realizing a particular benefit, nor do you expect to realize it in the future, but you continue to participate anyway (or manage for environment and animal welfare, as the case may be), then you probably are not seeking that particular benefit from continued participation (or continued management).

Insofar as this generalization is valid, then the categories of hypothetical benefits least sought by CLM participants tend to be those ‘close to home’ – self-benefits and family/workplace benefits. Non-participants are least focussed on hypothetical benefits coming from external stakeholders – environmental groups, animal welfare groups, the regional NRM body, government and social licence.

5.4.5.1. Links with Other Programs

Respondents were asked to nominate other programs with an environmental or animal welfare emphasis that they are involved with.⁵⁰³ The table below shows the range of programs for each cohort. In both cohorts, most respondents agreed in the surveys that the various programs they participated in fit well with each other and complement each other.

Table 5.6: Other environmental or animal welfare programs

CLM participants	Non-participants
Landcare	Landcare
Grazing management programs (Resource Consulting Services and Allan Savory)	Feedlot accreditation
Graincare	Topcrop
Cattlecare	Cattlecare
Global Animal Partnership	Pasture-fed beef accreditation
Organic Certification	EU accreditation
Meat & Livestock Australia (MLA) Best Practice	MSA accreditation
Livestock Production Assurance (LPA)	
South West Strategy (South West regional NRM group)	
Philip Brodie grain quality program	
Rural financial counselling program	

⁵⁰³ FS Qs 32 & 33.

Landholders are aware of the need for co-operation between programs, as well as the damaging effects of fragmentation of effort.⁵⁰⁴ Past failures taint future action and the scepticism in some non-participants' responses was in part a function of bad experiences in the past:⁵⁰⁵

Cattlecare ... was an Australia wide thing and then you had Q Care which was a Queensland thing. There was going to be a premium. There was a premium of a cent [per kg], I think for a little while. The whole thing just fell over. What was the advantage of it? Absolutely none whatsoever.⁵⁰⁶

For CLM participant Jane, CLM's networking opportunities provided advice about complementary programs:

[B]eing part of CLM, it really helps you source out the right people who can help with all sorts of things and learning from each other about what's the best thing to do to combat any issues that you might come up against.

On their property, CLM participants Terry and Yvonne maintained both organic and CLM certification. Organics fitted their management style and personal values and offered a fairly immediate market reward. CLM helped them develop a longer-term outlook:

With CLM, I think that the development of the plan ... that's a real strength in the program ... [There are] those people that come along and they're only thinking in 12 month fragments, and those people that are looking five, ten year, 20 year vision, is totally different. So I think CLM is very much for the long-term. That's not to say that some of the organic people aren't, but I have noticed that they are two different groups.⁵⁰⁷

They endorsed both two schemes:

Very complementary. Obviously one you can't use any chemicals at all, the other one you could if you chose to. But when you get to talk to these guys that are in

⁵⁰⁴ John.

⁵⁰⁵ Sam, Dan, Chris.

⁵⁰⁶ Donald.

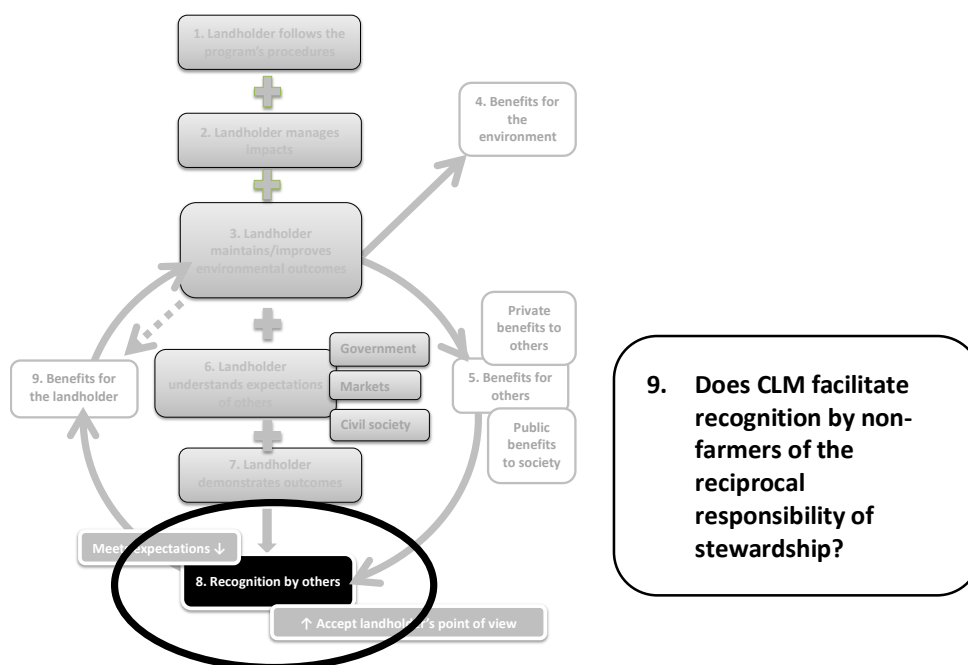
⁵⁰⁷ Terry.

CLM, they're not using [chemicals] ... they're changed ... they're looking at soils, soil health, bacteria.⁵⁰⁸

For them, CLM was strategic and organics was tactical:

[Terry] If we want to have negotiating power, then I think we just play those two cards straight out front ... So with the organics, you get a dollar value as soon as you get your certification ... [Yvonne] We saw them basically as a safeguard, but secondly as a way to perhaps get some sort of premium in the long run.

5.4.6. Element 8, Research Question 9: Recognition



Half of the CLM participants reported in the surveys that they had already received some recognition as a result of participating in CLM.⁵⁰⁹ Most CLM participants believed that, even though they may not be gaining recognition now, they would in the future if they continued participating. All believed that, in the future, recognition would be strongly linked to demonstration of outcomes, and that certification would be important to them in this regard.

Most non-participants noted no recognition to date for their environmental and animal welfare management, and were unconvinced about the efficacy of VSPs in helping

⁵⁰⁸ Terry.

⁵⁰⁹ FS Qs 28-31.

them gain recognition in the future. Most non-participants did not believe that continued good management of animal welfare and environment would secure recognition; and most did not believe that (or did not know whether) recognition in the future would be linked to demonstrating outcomes; nor whether VSPs would play any role in gaining recognition. The survey form provided space for respondents to make additional comments. One non-participant commented that the emphasis should be on building relationships (e.g. with special interest groups and state government) rather than ‘recognition’ *per se*. Another non-participant commented that no recognition measures were needed and declined to nominate any measure (though paradoxically nominated several stakeholders from whom recognition was sought in relation to animal welfare).

Respondents were asked to nominate external stakeholders from whom they wanted some sort of recognition from a list of 17 possible stakeholders. (This was the same list from which respondents were asked to choose stakeholders who had a significant impact on their management).⁵¹⁰ ‘Recognition’ was defined to mean acknowledgement that the external stakeholder is satisfied with the respondent’s management in relation to the environment and animal welfare. Later they were asked to nominate the types of recognition measures they sought from a list of 12 pre-set options. Results for the three questions – stakeholders that significantly impacted landholders,⁵¹¹ stakeholders from whom recognition is sought,⁵¹² and types of recognition sought⁵¹³ – are shown in Table 5.7, placed side-by-side for each cohort. The rationale for arranging them in this way is to explore whether there is some consistency across the three sets of responses. In other words:

Are the stakeholders from whom respondents want recognition the same ones the respondents believe have a significant impact on their businesses?

Are the types of recognition the respondents want, able to be delivered by the stakeholders from whom they want recognition?

⁵¹⁰ FS Q 18.

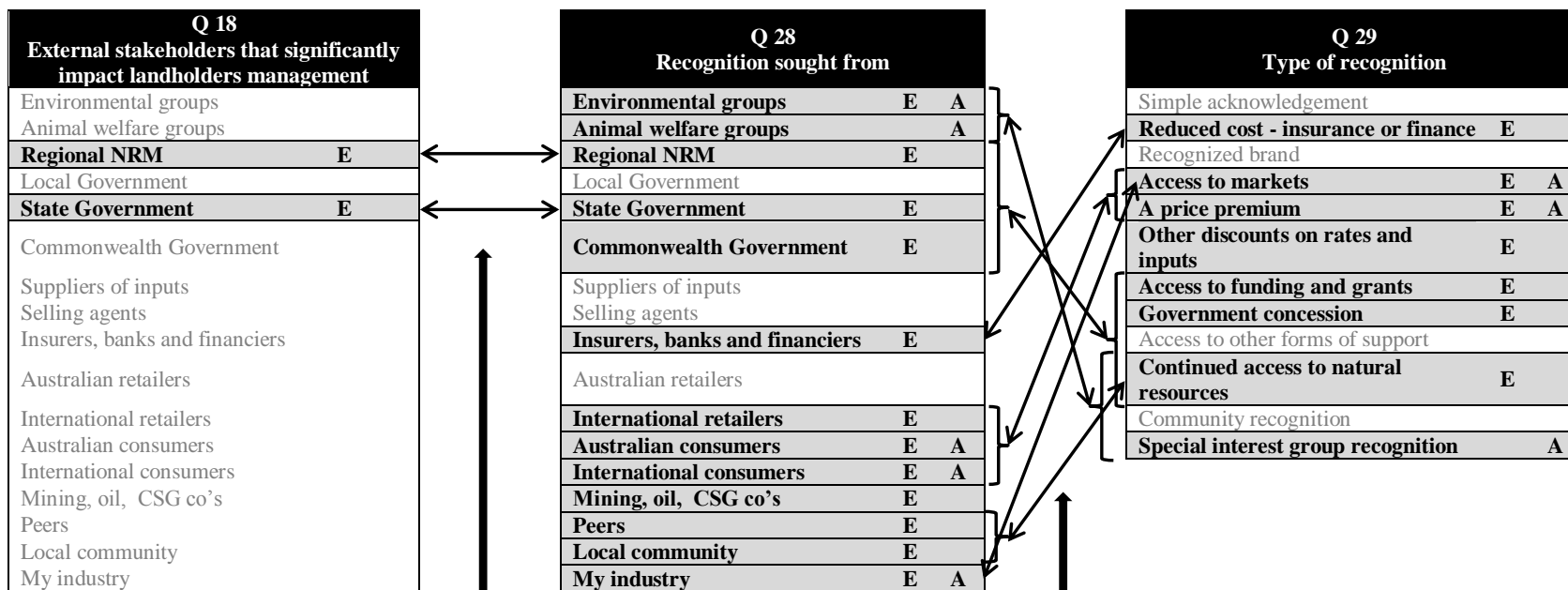
⁵¹¹ FS Q18.

⁵¹² FS Q 28.

⁵¹³ FS Q 29.

Table 5.7: CLM participants, external stakeholders and recognition

Bold = Majority landholder response in relation to management of environment (E) or animal welfare (A)

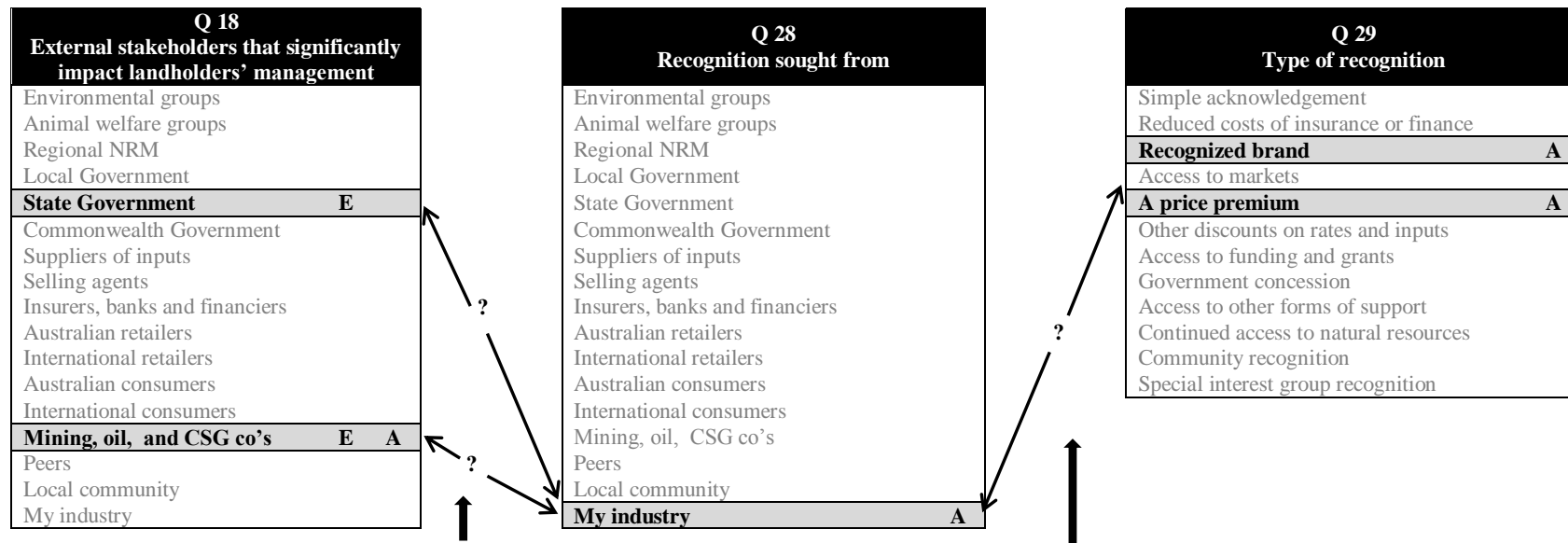


These arrows represent the researcher's interpretation of whether CLM participants are connecting recognition with stakeholders they consider to be influential. There appears to be some connections here between influential stakeholders and stakeholders from whom participants want recognition.

These arrows represent the researcher's interpretation of whether CLM participants are connecting the types of recognition they desire with stakeholders who are potentially able to deliver that type of recognition. There appears to be many connections here between stakeholders from whom participants want recognition and stakeholders able to deliver the types of recognition sought.

Table 5.8: Non-participants, external stakeholders and recognition

Bold = Majority landholder response in relation to management of environment (E) or animal welfare (A)



These arrows represent the researcher's interpretation of whether non-participants are connecting recognition with stakeholders they consider to be influential. There appears to be little connection here between influential stakeholders and stakeholders from whom non-participants want recognition.

These arrows represent the researcher's interpretation of whether non-participants are connecting the types of recognition they desire with stakeholders who are potentially able to deliver that type of recognition. There appears to be little connection here between the stakeholders from whom non-participants want recognition and stakeholders who are able to deliver the types of recognition sought.

On the face of it, looking at the CLM responses across the three questions in Table 5.7, CLM producers seem to have a sense of the linkages here, theorized by the arrows between the three sub-tables. Arguably, the sort of recognition measures desired by CLM participants could be delivered by the external stakeholders nominated. Some of the stakeholders said to be influential are also stakeholders from whom recognition is sought. Contrast this with the results reported in Table 5.8. The sort of measures most desired in Table 5.8 by non-participants (price premiums and brand differentiation) are unlikely to be delivered by the stakeholder they nominated ('my industry') nor from the stakeholder listed as being most influential (mining, oil, and coal seam gas companies). Once again these are not statistical inferences, but as indicative observations that CLM participants appear to be more focussed on the interests of external stakeholders, with a clearer sense of what they [the landholders] want from the external parties and what the external parties might deliver. The non-participants tend to be more indifferent to external interests, doubtful of the efficacy of trying to meet external expectations, and reticent to make connections between the 'what' and 'from whom' of recognition.

In the interviews, CLM participants had a range of views on the external stakeholders from whom they ideally wanted recognition and what form the recognition should take. For Jane it was a mixture of price premiums and grants, and for John, it was acknowledgement from special interest groups:

If we could have a group like [PETA – People for the Ethical Treatment of Animals] say, 'Well, we visited and have seen first-hand and we've seen the steps that CLM has assisted these people to do', if they came out and said, 'Buy your product from a CLM certified property', that would just be the ultimate point to get to.

CLM participants are certainly sensitive to the lack of market reward but still see value in participation for proactive reasons:

I do believe that we're getting closer and closer to the point where the [companies] will value it because the people ... eating the stuff will be requiring that.⁵¹⁴

⁵¹⁴ John.

For non-participants, the lack of market advantage was critical to their decision to decline to participate. Non-participants were hesitant to make the first move in the chicken-and-egg dilemma:

[W]hen there is a market out there which will provide me with a sufficient premium over and above the pain, agony and cost, I will do it like that [clicks fingers]. At the moment there isn't.⁵¹⁵

In David's view, relationship-building was more important than recognition, and in any case, commercial recognition was more important to David than recognition of government or special interest groups:

[I]t's probably more recognition you get from the sale of your products, that's recognition, it's about running a successful business isn't it, consumers wanting your products? ... financial gain is recognition.

External stakeholders came in for criticism for lack of recognition where it was perceived to be due, in relation to the implementation of native vegetation legislation in Queensland. CLM participants, such as Alec regarded the government's approach as clumsy and unfair:

[W]e put a lot of time into picking our shade lines and our conservation strips – they then came in with their veg maps and put colours across those, which means you're not allowed to touch this and I was never going to touch it anyway. To me that's not much reward for supposedly doing the right thing.

The reaction of Gordon, a non-participant, was more visceral:

[T]here was nothing worse! There is no more dangerous blunt instrument than trying to use legislation to generate an environmental outcome and not only that, it never works. It never delivers the outcome because what is the first thing that's missing? It is the incentive for anybody to bother to manage and maintain it. What incentive is there, for me, to bother trying to manage and maintain those areas that [the government has placed restrictions over]? Fucking none! ... Dad did not get a damn thing back out of the Government saying, "Thanks a lot, mate, for all that, basically, de facto National Park. Thanks a lot. Here's a golden handshake. Here's a couple of hundred thousand as recognition of the gratitude of the

⁵¹⁵ Gordon.

Queensland community”. Nah! Thanks for the donation. It is just the worst way.
There is no worst way but, anyway, that’s how we do it because it’s easier.

The next chapter reports the results for the organic case study using a similar schema.
A discussion of both case studies appears in Chapter 7.

CHAPTER 6: ORGANIC CERTIFICATION CASE STUDY

This case study comprises four sections:

- Section 6.1 The process of engagement with organic groups as a subject of research.
- Section 6.2 *Overview of organic certification*: unlike CLM, which does not claim to be immersed in any particular tradition of sustainable agriculture, organic certification is deeply embedded in the organic tradition.
- Section 6.3 *Organic certification design*: the results of the investigation of how organics' design helps achieve the elements of the conceptual framework.
- Section 6.4 *Farmers' perceptions of organic certification*: the results of the investigation of whether farmers believe organic certification helps them achieve the elements of the conceptual framework.

6.1. Engagement with Organic Organizations

This study forms part of the AgLaw Centre's *Next Generation Governance* project, funded by an ARC 'linkage project',⁵¹⁶ the purpose of which, according to the ARC, is to:

[S]upport the initiation and/or development of long-term strategic research alliances between higher education organisations and other organisations, including industry and end-users, in order to apply advanced knowledge to problems and/or to provide opportunities to obtain national economic, social or cultural benefits ... Proposals for funding under the *Linkage Projects* scheme must include at least one Partner Organisation. The Partner Organisation must make a contribution in cash and/or in kind to the project.⁵¹⁷

The AgLaw Centre negotiated with Australian Organic Limited (AOL) to join the project as an industry partner organization, and in line with the requirements for linkage projects, AOL contributed cash funding as well as an in-kind contribution of some of the time of the then non-executive director of AOL, Dr Andrew Monk, who

⁵¹⁶ With support and funding from the other sources listed in the Acknowledgements.

⁵¹⁷ Australian Research Council, *National Competitive Grants Program - Linkage Projects* (last modified 27 September 2013) <http://www.arc.gov.au/ncgp/lp/lp_default.htm>.

was assigned co-supervisor of this study. AOL's certification program (Australian Certified Organic – ACO) was not contemplated as a case study in the original *Next Generation Governance* project proposal and its interest in the project related to policy development of sustainability standards for agriculture. Although there was no requirement in the arrangement between the AgLaw Centre and AOL to select ACO as a case study, the collaboration between the organizations provided a relatively easy pathway to a case study. Dr Monk acted as the contact person with interviewees.

FOGG was a group of farmers growing irrigated organic cereals in the floodplain of the lower reaches of the Murrumbidgee River (the Lowbidgee Floodplain). They participated in NASAA's organic certification program, NASAA Certified Organic (NCO). The go-between in this case was a highly experienced organic farming consultant, who was involved with development of organic certification standards nationally and internationally, including the development of the *NASAA Organic Standard*⁵¹⁸ and who had previously worked for the FOGG growers in a consultancy role. He alerted the researcher to FOGG and introduced the participating farmers to arrange interviews. This case is referred to by the name of the growers' group (FOGG) rather than the VSP (NCO) because of the manner of the approach to farmers. The go-between at the time was not an officer of NASAA (though had been in the past), so NASAA did not have direct involvement in recruiting the interviewees, in contrast to CLM and ACO, where the go-betweens were CLM and AOL personnel. NASAA was informed of the study's occurrence and aims.

As with CLM, the researcher attended organic industry events to expand engagement with and understanding of organics. This included attendance of an event organized by AOL in Brisbane in May 2012 for the 'bio-input' sector (that is, commercial suppliers of organic inputs and services). As well, the researcher attended the Organic World Congress in Istanbul in October 2014, with the support of a research travel grant from the Organic Trust Australia–Research and Education (OTA-RE), and participated in a panel discussion called 'Institution Building: Organic agriculture in the landscape of sustainability initiatives'.

⁵¹⁸ NASAA, 'NASAA Organic Standard' (2012) <<http://www.nasaa.com.au/publications.html>>. In this study, simplified to the '*NASAA Standard*', and in the footnotes, to '*NASAA*'.

6.2. Overview of Organic Certification

Table 6.1 provides an overview of organic certification history in Australia.

Table 6.1: Four waves of organic history in Australia

Wave	Cultural anchor	Notable events in Australia
1. Anthroposophists 1920s–30s	1924: Rudolf Steiner gives a series of lectures at Koberwitz (then Germany, now Poland). (Paull also notes the earlier contribution of FH King).	<ul style="list-style-type: none"> • 1928: Ernesto Genoni first Australian to join the anthroposophic movement's Agricultural Experimental Circle. • 1938: Bob Williams presents the first public lecture on biodynamics in Australia at the home of Walter Burley and Marion Mahoney Griffin.
2. Organics Pioneers 1940s–50s	1940: in his book 'Look to the Land', published in the UK, Lord Northbourne coins the term 'organic farming', based on Steiner and Ehrenfried Pfeiffer's concept of 'the farm as an organism'.	<ul style="list-style-type: none"> • 1944: the Australian Organic Farming and Gardening Society (AOFGS) founded – the first organic advocacy association in Australia. • 1946-54: publication of the <i>Organic Farming Digest</i> (renamed <i>Farm & Garden Digest</i>) • 1958-59: tour of Australia by Lady Eve Balfour, founder of the UK's Soil Association. • Several other organic organizations founded, including Biodynamic Agricultural Association of Australia (BDAAA)
3. Disseminators 1960s–70s	1962: Publication in USA of 'Silent Spring' by Rachel Carson.	<ul style="list-style-type: none"> • Many new organic associations, periodicals, and popular books emerge. • 1967: Bio-Dynamic Research Institute registered. • Moves to develop organic standards, labelling and certification by Organic Food Movement (OFM) and others.
4. Certifiers 1980s–present	1986: Chernobyl nuclear accident in Ukraine. Radioactive fallout refocuses attention on food safety. (Lockie et al add here the effects of the BSE (mad cows' disease) epidemic and food scare in the UK in the 1990s).	<ul style="list-style-type: none"> • Product differentiation, governance apparatus, sector becomes monetised and corporatized. • 1987: NASAA registered. • 1988: Biological Farmers of Australia (BFA) registered (later becomes AOL). • Organics certification, standards, logos, and labelling established. • 1991: <i>National Standard</i> implemented for exports. • 1998: Organic Federation of Australia (OFA) founded. • 2005: 15th IFOAM Organic World Congress held in Adelaide. • 2006: Journal of Organic Systems (JOS) established. • 2009: <i>AS 6000</i> released. • 2009: Organic Industry Standards and Certification Council (OISCC) established as an industry council 'for all matters pertaining to standards and certification for the organic industry.'

(Adapted from Paull, 2008, 2011 and 2013a; Lockie et al 2006, and OISCC website)

No attempt is made here to give a comprehensive account of the global history of organics, which has been ably recounted by other scholars.⁵¹⁹ Similarly, Australian organic history has been canvassed in detail by Paull and others, from whose work the summary in Table 6.1 is based.⁵²⁰ Paull emphasizes the venerability of organics in Australia: while not an international leader in the historical development of organic thinking, Australia was a ‘fast follower’.

6.2.1. Positioning Certification in Organic Discourse

The certification aspect of organics has played such a central role in the organic movement over the last few decades that some people may perceive ‘organic’ as synonymous with ‘certified organic’. However, that association is not absolute, and this chapter teases out four interrelated meanings of ‘organic’, represented in Figure 6.1.

Equating organics with historical forms of farming is not entirely satisfying. The ancients used naturally occurring toxins like arsenic in pest management,⁵²¹ and much land degradation in Australia occurred before the latter half of the 20th century without the use of synthetic chemical inputs, involving the plough, introduced species, overgrazing, and injudicious clearing of vegetation. Neither does organic agriculture

⁵¹⁹ See, eg, George Kuepper, 'A Brief Overview of the History and Philosophy of Organic Agriculture' (Kerr Center for Sustainable Agriculture, 2010); J Heckman, 'A History of Organic Farming: Transitions from Sir Albert Howard's War in the Soil to USDA National Organic Program' (2005) 21(3) *Renewable Agriculture and Food Systems* 143; William Lockeretz (ed), *Organic Farming: An International History* (CABI, 2007); Bernhard Freyer, Jim Bingen and Milena Klimek, 'Ethics in the Organic Movement' in B Freyer and J Bingen (eds), *Re-Thinking Organic Food and Farming in a Changing World, The International Library of Environmental - Volume 22 of The International Library of Environmental, Agricultural and Food Ethics* (Springer Science+Business Media, 2015), 23-31.

⁵²⁰ John Paull, 'A History of the Organic Agriculture Movement in Australia,' in B Mascitelli and A Lobo (eds), *Organics in the Global Food Chain* (Connor Court Publishing, 2013a) 37; John Paull, 'The Lost History of Organic Farming in Australia' (2008) 3(2) *Journal of Organic Systems* 2; Rebecca Jones, *Green Harvest: A History of Organic Farming and Gardening in Australia* (CSIRO Publishing, 2010); John Paull, 'The Making of an Agricultural Classic: Farmers of Forty Centuries or Permanent Agriculture in China, Korea and Japan, 1911-2011' (2011) 2(3) *Agricultural Sciences* 175; S Lockie et al, *Going Organic: Mobilising Networks for Environmentally Responsible Food Production* (CABI, 2006).

⁵²¹ Eric L Taylor, A Gordon Holley and Melanie Kirk, 'Pesticide Development: A Brief Look at the History' (Southern Regional Extension Forestry, 2007).

reject any facet of the modern world that can be adapted consistently with general organic principles. Organic agriculture is anti-modernist, not anti-modern.⁵²²

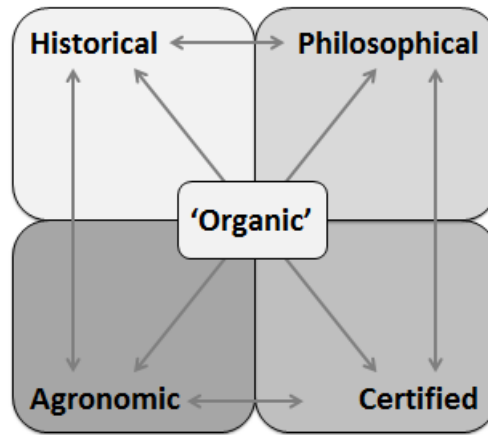


Figure 6.1: Four meanings of 'organic'

The second meaning in the figure reflects the philosophic reaction against modernist agriculture and is linked to the 19th century German chemist Justus von Liebig.⁵²³ He discovered the mechanism by which plants take up dissolved mineral nutrients through their roots, which led to development of industrial scale processes to increase the solubility of nutrient-bearing rocks, as well as processes to manufacture synthetic substitutes. Thus, according to these narratives, was born the modern 'farm chemical industry', and soluble fertilizers form a large part of conventional agriculture today. The proto-organic movement objected to the reliance on this direct nutrient-to-plant pathway because it ignores the role of soil biological activity and the soil microcosm in storing and releasing water and nutrients, regulating plant growth, and suppressing disease. Thus organic agriculture emphasized the soil – reflected in the name of the

⁵²² Modernist agriculture: 'single coded, inflexible and monocultural': Jules Pretty, *Agri-Culture - Reconnecting People, Land and Nature* (Earthscan, 2002) 3.

⁵²³ Meredith McKittrick, 'Industrial Agriculture' in J R McNeill and Erin Stewart Mauldin (eds), *A Companion to Global Environmental History* (John Wiley & Sons, 2012), 412; D H Skinner, 'The Science of Organic Farming' in William Lockeretz (ed), *Organic Farming: An International History* (CABI, 2007); Alexander Gerber and Volker Hoffmann, 'The Diffusion of Eco-farming in Germany' in N G Roling and M A E Wagemakers (eds), *Facilitating Sustainable Agriculture: Participatory Learning and Adaptive Management in Times of Environmental Uncertainty* (Cambridge University Press, 2000).

UK's oldest organic association, the Soil Association – and opposed the application of fertilizers where the aim is the direct uptake of dissolved minerals.⁵²⁴

For the early organic thinkers, such as Steiner and Pfeiffer, farming was a social, cultural and spiritual enterprise as much as a productivist one and, in their view, the farm was a living organism. From this concept, Northbourne coined the term 'organic' in 1940 to refer to this alternative approach to farming,⁵²⁵ and, since then, the organic movement has taken cues from other social movements and concerns.⁵²⁶ The organic worldview is often expressed in general terms and idealistic language, encompassing the biophysical environment, culture, social justice, the rights of animals, food sovereignty, development goals, and democratic and consensus approaches to decision-making. It is not a single unified philosophy or ethical position, which makes the concept vulnerable to a wide variety of interpretations and disagreements.⁵²⁷ In 2005, the international umbrella group for the organic movement, International Federation of Organic Agriculture Movements (IFOAM), felt the need to articulate a set of four 'principles' for the movement,⁵²⁸ reproduced in the box below.

IFOAM's Four Principles of Organic Agriculture⁵²⁹

The Principle of Health: Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

The Principle of Ecology: Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

⁵²⁴ Interestingly, von Liebig himself was concerned by the over-reliance on chemical fertilizers and admired the accounts of Chinese agriculture's careful collection of human and animal wastes for agriculture: see Kelpie Wilson, 'Justus von Liebig and the Birth of Modern Biochar' (2014) *Biochar Journal*.

⁵²⁵ Walter Lord Northbourne, *Look to the Land* (JM Dent & Sons, 1940).

⁵²⁶ Lockie et al, above n 520.

⁵²⁷ One of the founders of the Soil Association, Jorian Jenks, was also an enthusiastic member of the British Union of Fascists: Richard Moore-Colyer, 'Towards 'Mother Earth': Jorian Jenks, Organicism, the Right and the British Union of Fascists' (2004) 39(3) *Journal of Contemporary History* 353.

⁵²⁸ LWM Luttikholt, 'Principles of organic agriculture as formulated by the International Federation of Organic Agriculture Movements' (2--7) 43(4) *NJAS - Wageningen Journal of Life Sciences* 347, 350; Freyer, Bingen and Klimek, above n 519, 14.

⁵²⁹ IFOAM, 'Principles of Organic Agriculture' <www.ifoam.bio>

The Principle of Fairness: Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

The Principle of Care: Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

This study makes no attempt to compare organic and conventional agronomic practice, except to say debate is passionate and the issues contentious. Technologies contested by organics, including more recently genetically modified organisms (GMOs), appear to offend organic sensibilities from many angles, so narrow technocratic arguments that fail to address all fronts are unlikely to move organic protagonists. Any new technology would need to pass through the filters of the basic organic principles, which exposes it to a wide range of technical and values-based assessments.

Many consumers and retailers would not accept a product as ‘organic’ unless certified – the fourth meaning – though certification is a late development. In Australia, certification has been a feature of the organic landscape only since the late 1980s.⁵³⁰ Certification is concerned with contractual arrangements and trust building amongst farmers, traders and consumers who are remote from one another (both geographically and sociologically), and its catchwords are standards, accountability, transparency and independent auditing. Certification attempts to address the problem of credence qualities outlined in Chapter 2.

There is much debate within the organic sector over the efficacy of certification.⁵³¹ Standards making requires that principles be operationalized into observable on-farm practices, and crystallized into judicially interpretable rules (whether interpreted by courts or private certification bodies), which tends to discount the poetic or aspirational. The all-or-nothing approach of organic certification tends to cement the divide between organic and conventional. Under the certification paradigm, there is little leeway for a sympathetic conventional farmer to experiment with the range of

⁵³⁰ John Paull, 'The Organics Iceberg and the Tyranny of Organic Certification' (2013b) 8(2) *Journal of Organic Systems* 2.

⁵³¹ Ibid.

conventional and organic options.⁵³² Certification involves prioritization amongst values and principles: organic standards have many provisions proscribing the use of GMOs but, as far as these are concerns of the organic movement, little to say on the corporatization of farming and commodification of public goods. Certification is a market-based approach and there are limitations in using the market to realize public interest objectives.⁵³³

Nonetheless, given the credence nature of organic claims and the possibility of fraud, organic farmers have long accepted the value of exposing themselves to the scrutiny of a verification system to secure market rewards.⁵³⁴

Certification is not the only way of building trust with consumers and citizens. For example, community supported agriculture (CSA)⁵³⁵ and participatory guarantee systems (PGS)⁵³⁶ are alternatives to formal certification that also aim to influence farmers' environmental behaviours and enhance the sense of trust between farmers and end-users. There are many overlaps between the two concepts, so it is not easy to precisely differentiate them. They both involve the building of direct relationships between farmers and other 'constituents'. The crucial contractual values – trust, accountability and transparency – arise out of personal interactions in the relationships between farmers and other stakeholders, rather than through the more impersonal and remote certification pathway.

⁵³² Compare Niggli's description of the agro-ecological approach: 'Farmers often start with using a few agroecological practices. Learning from other farmers is important as they become confident with further practices as they abandon conventional techniques step by step': Urs Niggli, 'Incorporating Agroecology Into Organic Research – An Ongoing Challenge' (2015) 4(3) *Sustainable Agriculture Research* 149, 152-153.

⁵³³ Tennent and Lockie, above n 136, 17.

⁵³⁴ Els Wynen, 'Standards and Compliance Systems for Organic and Bio-Dynamic Agriculture in Australia: Past, Present and Future' (2007) 2 *Journal of Organic Systems* 42, 43.

⁵³⁵ See Department of Primary Industries (Vic), 'A Guide for the Establishment of Community Supported Agriculture Farms in Victoria' (2004); J Sharp, E Imerman and G Peters, 'Community Supported Agriculture (CSA): Building Community Among Farmers and Non-Farmers' (2002) 40(3) *Journal of Extension*. See also the website of the international network for CSA: Urgenci, <<http://urgenci.net/>>.

⁵³⁶ IFOAM, *Organic Agriculture and Participatory Guarantee Systems* <http://www.ifoam.org/about_ifoam/standards/pgs/PGS-Brochure-Dec2011_Web.pdf>; Carolina Rios Thomson, Lucimar Santiago de Abreu and Diego Grespan de Oliveira, 'The Campinas and Region Natural Agriculture Association's Participatory Guarantee System: A Case Study in Brazil' (Paper presented at the 4th ISOFAR Scientific Conference at the Organic World Congress 2014, Istanbul, Turkey, 2014).

The four meanings of organic are interrelated: organic philosophy draws on historical agriculture.⁵³⁷ Organic agronomic practice is informed by organic philosophy, and certification systems attempt to give effect to its broad principles. However, while organic production might ideally integrate all four meanings, teasing these meanings apart shows that such integration is not inevitable. It is possible to practice organic agronomics and not be certified; to embrace the organic worldview, but have misgivings about the categorical prohibitions in the certification standards; to apply the agronomic methods without absorbing the mysticism of the pioneers; and to engage in organic practice, using entirely modern farming practices and technologies.

Recent discussions have called for a new wave of organics, the so-called Organic 3.0.⁵³⁸ In this narrative, the old 'versions' 1.0 and 2.0 sweep across Paull's four waves of organic history shown in Table 6.1, and Organic 3.0 dates, perhaps somewhat prematurely, from 2015. The articulation of Organic 3.0 remains vague and aspirational,⁵³⁹ but is said to envisage organics as 'a guarantor for a sustainable agriculture and food security beyond a niche', featuring a 'comprehensive innovation culture, continuous improvement toward best organic practices, transparent integrity [and] alliances and partnerships'.⁵⁴⁰

Niggli and colleagues describe the impetus for Organic 3.0 in a candid analysis of weaknesses and risks of the previous phases.⁵⁴¹ Organic farming is a small portion of the overall agricultural and consumer landscapes. It appeals to a minority of consumers and has not become a mass-appeal phenomenon. It has higher opportunity costs than other strategies that are more compatible with mainstream farming. At less than 1 per cent of current agricultural area and an annual growth of less than 5 per cent per

⁵³⁷ F H King, *Farmers of Forty Centuries or, Permanent Agriculture in China, Korea and Japan* (Project Gutenberg, 2004 ed, 1911).

⁵³⁸ Hanni Rützler and Wolfgang Reiter, 'Organic 3.0: Analysis of Trends and Potential for an Organic Future' (Zukunftsinstitut Austria GmbH, 2014) <<https://www.biofach.de/de/presse/organic-studie/>>; Urs Niggli et al, 'Towards More Organics in Europe and Worldwide: A Contribution to the Discourse on Ecological or 'Organic Agriculture 3.0'' (Paper presented at the BioFach, 2015).

⁵³⁹ Markus Arbenz, 'Moving Toward Organic 3.0' in Helga Willer and Julia Lernoud (eds), *The World of Organic Agriculture: Statistics and Emerging Trends 2015* (FiBL and IFOAM, 2015) 272, 272, 273.

⁵⁴⁰ Niggli et al, above n 538.

⁵⁴¹ Ibid.

annum,⁵⁴² it will take many decades for organics to break out of a niche position and influence mainstream agriculture. There is a risk that, in this time, the sustainability market will become crowded with other options, and that policy-makers, farmers and consumers will lose interest in organics, choosing lower-cost/higher-uptake strategies and labels. The authors speculate that organic agriculture may have missed opportunities to make progress because of technological prohibitions, and there is a risk that other methods will develop strategies to meet the same sustainability goals as the organic standards at higher level of productivity and efficiency of resource use.⁵⁴³

In a separate paper comparing organic farming with the agro-ecological concept of Altieri and others,⁵⁴⁴ Niggli et al concluded:

[A]lthough organic agriculture is a productive system with a high output of public goods and less negative impacts on the environment, it is not likely to become mainstreamed in the form of the current code of conduct or regulations applied world-wide by different states, farmer associations, and the business actors.

In contrast they note:

[A]groecological farming approaches without certification systems, fewer restrictions for the use of technologies and more oriented towards qualifiable or quantifiable positive impacts on the sustainability are gaining attention.⁵⁴⁵

6.2.2. Motivation to Farm Organically

The discussion in Chapter 2 on Ryan and Deci's continuum of behavioural motivations noted the potential benefits of intrinsic and internalized motivation, and some scholars have noticed that organic farmers tend to be motivated by innate and internalized environmental norms more than conventional framers. Summarizing the previous literature, Läßle notes:

⁵⁴² These are world averages. In Australia, the compound annual growth rate of the total value of organics from 2009-2014 has been estimated at about 15% per year: Bruno Mascitelli et al, 'Australian Organic Market Report 2014' (Australian Organic Ltd, 2014).

⁵⁴³ Niggli et al (2015), above n 538.

⁵⁴⁴ Miguel A Altieri et al, 'Agroecology and the Design of Climate Change-Resilient Farming Systems' (2015) 35 *Agronomy for Sustainable Development* 869.

⁵⁴⁵ Urs Niggli et al, 'A Global Vision and Strategy for Organic Farming Research - First Draft' (Paper presented at the IFOAM Organic World Congress 2014 - TIPI Workshop: Practitioners' Research Agenda, Istanbul, 2014) 51.

In terms of personal characteristics and attitudes, organic farmers express a higher level of environmental awareness, are less motivated by economic reasons and are generally less risk averse than their conventional counterparts.⁵⁴⁶

Läpple confirmed this in her study involving 596 Irish cattle and sheep farmers in three cohorts – organic, ex-organic and conventional. She found that organic farmers were the most, and conventional the least, environmentally aware. Conventional farmers were the most profit-oriented, least risk averse, and ranked information gathering as less important than the other two groups.⁵⁴⁷ Läpple concluded:

Environmental awareness of the farmer emerged to be an important characteristic for long-term conversion [to organic]. Thus, increasing farmers' environmental awareness could help to increase conversion to organic farming.⁵⁴⁸

Also summarizing the research literature, Stobbelaar et al, conclude that there is a dynamic relationship between the practice of organic farming, involvement in organic certification schemes, and the process of internalizing agri-environmental norms:

[A]fter some time, many [farmers who convert from conventional to organic farming] do internalize environmental and landscape values after their reorientation from conventional to organic farming ... Farmers internalize the values of organic sector because of contact with other farmers or with customers and because of their own farming experiences ... In this regard, organic certification can be seen as an institution that can potentially have an impact on the values of its members.⁵⁴⁹

Stobbelaar et al conducted a small pilot study of eight conventional and ten organic dairy farmers in the Northern Friesian Woodlands of the Netherlands. The authors were interested to chart a possible relationship between conservation motivations, membership of farmers' environmental co-operatives for farmers, and the

⁵⁴⁶ Doris Läpple, 'Comparing Attitudes and Characteristics of Organic, Former Organic and Conventional Farmers: Evidence from Ireland' (2012) 28(4) *Renewable Agriculture and Food Systems* 329, 330. See also David Kings and Brian Ilbery, 'The Lifeworlds of Organic and Conventional Farmers in Central-southern England: A Phenomenological Enquiry' (2015) 55(1) *Sociologia Ruralis* 62.

⁵⁴⁷ Läpple, above n 546, 335.

⁵⁴⁸ Ibid 335-36.

⁵⁴⁹ Stobbelaar et al, above n 23, S178.

internalization of the objectives of Dutch agri-environmental policies. Using the four part motivational spectrum described in Chapter 2, the authors found:

Conventional farmers were predominantly motivated by aspects related to external and introjected regulation, whereas organic farmers attributed importance to aspects that were rated as identified and integrated regulation. ... [O]rganic farmers tended to consider nature and landscape conservation as part of their religious or holistic life vision, and more organic than conventional farmers indicated to have high levels of enthusiasm, attention and knowledge for landscape and nature management.⁵⁵⁰

On the issue of membership of the farmers' environmental co-operative, the authors found:

For organic farmers, the collective maintenance of the landscape and knowledge sharing between the farmers were also important motives to join the cooperatives, whereas conventional farmers expected the cooperatives to assist in raising income from landscape management.⁵⁵¹

6.2.3. The Value of Organics in Australia

6.2.3.1. Public Interest Values

No attempt is made to comprehensively analyse the environmental and health claims made for organics. Some claims remain contentious, such as the health and nutritional benefits of organic produce,⁵⁵² even though this is the leading reason for consumer purchase of organics,⁵⁵³ but a solid body of evidence appears in relation to

⁵⁵⁰ Ibid, S180.

⁵⁵¹ Ibid, S180.

⁵⁵² Alan Dangour et al, 'Comparison of Putative Health Effects of Organically and Conventionally Produced Foodstuffs: A Systematic Review - Report for the Food Standards Agency' (Nutrition and Public Health Intervention Research Unit - London School of Hygiene & Tropical Medicine, 2009); Marcin Barański et al, 'Higher Antioxidant and Lower Cadmium Concentrations and Lower Incidence of Pesticide Residues in Organically Grown Crops: A Systematic Literature Review and Meta-Analyses' (2014) 112 *British Journal of Nutrition* 794; Dominika Średnicka-Tober et al, 'Higher PUFA and N-3 PUFA, Conjugated Linoleic Acid, A-Tocopherol and Iron, but Lower Iodine and Selenium Concentrations in Organic Milk: A Systematic Literature Review and Meta- and Redundancy Analyses' (2016) *British Journal of Nutrition* 1; Crystal Smith-Spangler et al, 'Are Organic Foods Safer or Healthier Than Conventional Alternatives?: A Systematic Review' (2012) 157(5) *Annals of Internal Medicine* 348.

⁵⁵³ David Pearson, Joanna Henryks and Hannah Jones, 'Organic Food: What We Know (and Do Not Know) About Consumers' (2010) *Renewable Agriculture and Food Systems* 1, 3.

environmental claims.⁵⁵⁴ Leu and Clay⁵⁵⁵ observe that there has been little research on the environmental benefits of Australian organic farming systems but they summarize the contributions of organic farming to the common environmental good from studies from other countries.⁵⁵⁶ These found that, compared with conventional farming systems, the organic systems studied:

- Had less total environmental impact;
- Were more energy efficient and used less fossil fuels;
- Were more biodiverse across the spectrum of biota from soil bacteria to mammals;
- Had healthier soils and less soil loss, better water holding capacity and water infiltration. This may become more important if climate change creates a more variable rainfall pattern, with sporadic heavy rainfall events; and
- Were more resilient in adverse weather events, such as droughts.

Niggli and colleagues summarize seven dimensions of organic agriculture as a sustainability model: (1) reducing negative trade-offs between productivity and sustainability; (2) making better use of farmer knowledge and farmer-based innovation; (3) improving farmer-to-farmer as well as farmer-to-consumer communication and co-operation; (4) co-innovation amongst farmers, advisors, and researchers; (5) technology development for long-term sustainability; (6) exploitation of high value food chains and voluntary standards for social goals and the common

⁵⁵⁴ See, eg, R Fuller et al, 'Benefits of Organic Farming to Biodiversity Vary Among Taxa' (2005) 1(4) *Biology Letters* 431; Lauren C Ponisio et al, 'Diversification Practices Reduce Organic to Conventional Yield Gap' (2014) 282 *Proceedings of the Royal Society - B*; P Mäder et al, 'Soil Fertility and Biodiversity in Organic Farming' (2002) 296 *Science* 1696.

⁵⁵⁵ Andre Leu and Liz Clay, 'Assuring Environmental Outcomes on Organic Farms: Incorporating EMS into the National Organic Certification Program' (Paper presented at the Practical approaches: Exploring the future of EMS in Australia: 1st National EMS Forum, Toowoomba, Australia, 14 -17 May 2007.

⁵⁵⁶ J Reganold et al, 'Sustainability of Three Apple Production Systems' (2001) 410 *Nature* 926; Mäder et al, above n 554; David Pimentel et al, 'Environmental, Energetic, and Economic Comparisons of Organic and Conventional Farming Systems' (2005) 55(7) *BioScience* 573; D Hole et al, 'Does Organic Farming Benefit Biodiversity?' (2004) 122(1) *Biological Conservation* 113; D W Lotter, R Seidel and W Liebhart, 'The Performance of Organic and Conventional Cropping Systems in an Extreme Climate Year' (2003) 18(3) *American Journal of Alternative Agriculture* 146; K Handrek, *Organic Matter and Soils* (CSIRO, 1979); J Stevenson, *Humus Chemistry in Soil Chemistry* (Wiley 1998); K Handrek and N Black, *Growing Media for Ornamental Plants and Turf* (UNSW Press, 2002); G Zimmer, *The Biological Farmer* (Acres USA, 2000); L E Drinkwater, P Wagoner and M Sarrantonio, 'Legume-Based Cropping Systems have Reduced Carbon and Nitrogen Losses' (1998) 396 *Nature* 262 ; Rick Welsh, 'The Economics of Organic Grain and Soybean Production in the Midwestern United States' (Policy Studies Report No 13, Henry A Wallace Institute for Alternative Agriculture, 1999).

good; and (7) multi-purpose agriculture, combining agricultural production and ethical values (e.g. animal welfare), social concerns (e.g. fair trade and farmer livelihoods), and the cultural values of landscapes.⁵⁵⁷

Organics is perhaps most famous for its ban on synthetic pesticides and herbicides, substances which remain problematic for the environment, as well as the health and safety of farmers and their families.⁵⁵⁸ According to the Australian Centre for Agricultural Health and Safety, most pesticides are designated as hazardous substances under State Government regulations,⁵⁵⁹ and poisoning of farmers by farm chemicals does occur and can be deadly.⁵⁶⁰ At the coalface of farm chemical use, farmers, their staff and contractors bear the risks of misadventure, lapses in safety protocols, and effects of long-term exposure.⁵⁶¹

6.2.3.2. Market Values

The latest edition of AOL's Australian Organic Market Report⁵⁶² estimates farm-gate value of certified production in Australia at AU\$570 million, and total value-added certified production at AU\$1,728 million, or about 1 per cent of the total value of conventional agriculture in Australia.

The report estimates there are 1,707 certified organic farmers in Australia, farming about 22 million hectares. This represents the highest acreage of land devoted to certified organic production of any country in the world,⁵⁶³ and accounts for about 40

⁵⁵⁷ Niggli et al (2014), above n 545.

⁵⁵⁸ WHO, 'Public Health Impact of Pesticides Used in Agriculture' (1990).

⁵⁵⁹ Australian Centre for Agricultural Health & Safety, 'Guidance Note Number 13 - Farm Chemicals' (RIRDC) 13.

⁵⁶⁰ Peter Foley, 'Farmer is Killed by Splash of Herbicide', *The Queensland Times* (Ipswich, Australia), 13 Nov 2012 <<http://www.qt.com.au/news/man-rushed-to-hospital-after-swallowing-herbicide/1618297/>>.

⁵⁶¹ Nicole Curtis, 'Cross-Contamination by Chemicals of Farming Family Members: A Snapshot of Farmers' Health in the Esperance Port Zone 2010–2013' (RIRDC, 2014); E G Hanna, *Environmental Health and Primary Health Care: Towards a New Workforce Model* (School of Public Health, La Trobe University, 2005); Australian Centre for Agricultural Health & Safety, above n 559, 7.

⁵⁶² Mascitelli et al, above n 542.

⁵⁶³ An accolade Australia has consistently achieved for over a decade: Paull (2008), above n 520, 47.

per cent of reported world organic acreage.⁵⁶⁴ According to Willer,⁵⁶⁵ 97 per cent of Australia's organic estate is rangelands grazing, for which synthetic inputs are fairly minimal even in conventional systems⁵⁶⁶ and, overall, Australian organic production would constitute a fairly minor portion of other ways of measuring global organic production and productivity (e.g. farm-gate value, total economic value, percentage of the total national area of farmland, and measures of food energy or protein). Nonetheless, the gross area covered is arguably an important parameter for measuring environmental protection, especially for sensitive ecotypes such as rangelands.⁵⁶⁷

6.2.3.3. Research, Development & Extension

Australia has no major organic research organizations supported by public and private funding as in Europe⁵⁶⁸ or the USA,⁵⁶⁹ and 'there has generally been an absence of government support or encouragement of organic farming systems'.⁵⁷⁰ Organic research in Australia is itinerant, making do with whatever agency will lend it space, including state government agricultural departments and, until 2012, the Commonwealth Government's Rural Industries Research and Development Corporation (RIRDC).⁵⁷¹ OTA-RE has set up a mechanism for the aggregation of private and public funds for research and education.⁵⁷²

Compared with organic farming, research in conventional agriculture has the benefit of sponsorship from large agri-business input suppliers. Noting the difficulties in collating accurate data, Keogh estimated the private sector research and development expenditure from agri-chemical, fertilizer, seed, fisheries and forestry, and corporate

⁵⁶⁴ Helga Willer and Julia Lernoud, *The World of Organic Agriculture: Statistics and Emerging Trends 2015* (FiBL and IFOAM, 2015) 24. This does not take into account uncertified organic land in Australia or globally.

⁵⁶⁵ Ibid 28.

⁵⁶⁶ M Vaarst et al, 'Animal Health and Nutrition in Organic Farming' in P Kristiansen, A Taji and J Reganold (eds), *Organic Agriculture: A Global Perspective* (CSIRO Publishing, 2006) 167.

⁵⁶⁷ Smyth and James, above n 414. Australian organic beef producer's share of world organic beef production is likely to have been significantly boosted by the 53% increase in the area of Australia under organic certification between 2011 and 2014, due to rangeland areas coming into certified production to meet demand for organic beef: Willer and Lernoud, above n 564, 28.

⁵⁶⁸ FiBL, and Organic Research Centre.

⁵⁶⁹ Rodale Institute.

⁵⁷⁰ Alexandra and May, above n 125, 19.

⁵⁷¹ Robyn Neeson, 'On-Line Organic Information', *Organic News*, January 2014.

⁵⁷² OTA-RE <<http://organictrustaustralia.org.au/>>.

farm businesses to be about AU\$197 million in 2008-09. This was in addition to private-sector food processing research and development of \$345 million.⁵⁷³ These sums leverage considerable public sector investment in conventional agriculture, in the form of the past and present research, development and extension activities of government departments of agriculture, and from the co-contribution model whereby the Commonwealth makes a matching contribution to the compulsory levies paid by farmers to the rural industry R&D corporations.⁵⁷⁴ Keogh estimated the farmers' contribution to compulsory levies to be AU\$227 million for 2008-09. Commonwealth, State government and university contributions to agricultural research and development in the same period were estimated to be AU\$515 million, AU\$254 million, and about AU\$19 million respectively.⁵⁷⁵

While some R&D generated from the co-contribution model benefits all farmers generally (conventional and organic), Horticulture Innovation Australia (HIA) is the only industry R&D corporation operating in the co-contribution model that has offered substantial material support to specifically organic R&D in recent times. Over the past few years, HIA has allocated over AU\$1 million to organic sector R&D.

6.2.4. Organic Governance in Australia

Government involvement in organic governance in Australia has been patchy. For the most part, governments in Australia have a stand-offish attitude towards organic agriculture. There is little to no recognition of the public interest value it might play in Australian landscape management and no concessions offered to organic farmers in the manner of the EU direct payments under its good agricultural and environmental condition process. Australian law does not provide any special protection for organic agriculture against contamination from conventional agriculture.⁵⁷⁶

Governments have not been proactive in providing regulatory and financial support for organic standards development and protections from false labelling. For most of its history, administration of the certification program under the *National Standard*

⁵⁷³ Mick Keogh, 'Private Sector Investment in Agricultural Research and Development in Australia' (2011) 8(2) *Australian Farm Business Management Journal* 13, 17.

⁵⁷⁴ *Primary Industries Levies and Charges Collection Act 1991* (Cth) and *Primary Industries (Excise) Levies Act 1999* (Cth).

⁵⁷⁵ Keogh, above n 573, 17.

⁵⁷⁶ *Marsh v Baxter* [2014] WASC 187.

(discussed below) was relegated to the Commonwealth customs and quarantine agency, and its regulatory regime was heavily subsidized by the organic sector through levies on certifiers.⁵⁷⁷

In the US, organic governance is more regulated and ostensibly better supported by government, with a dedicated program within the US Department of Agriculture (USDA) – the National Organic Program (NOP).⁵⁷⁸ Generally, farms or handling operations must be certified by a state or private certifying body accredited by the USDA and must use the USDA organic seal if they label produce as ‘organic’. Similarly, organic production in the EU has been regulated since 1993.⁵⁷⁹ The regulations require production in accordance with the legislated standard and labelled with the EU organic logo. The EU provides organic farmers with direct farm payments under the greening provisions of its common agricultural policy (CAP).⁵⁸⁰ These are justified on a range market-failure and transaction cost arguments.⁵⁸¹

There are pros and cons to government regulation of organic farming. Stolze and Lampkin suggest that regulation in the EU paved the way for government support and assistance: ‘Government support for organic farming now also extends into areas such as research, market development and consumer promotion’.⁵⁸² However, state support also comes with costs,⁵⁸³ and Stolze and Lampkin note concerns about the institutionalization and ‘conventionalization’ of what is meant to be an alternative to the mainstream.⁵⁸⁴

⁵⁷⁷ Wynen (2007), above n 534, 12.

⁵⁷⁸ USDA, *National Organic Program* <<http://www.ams.usda.gov/about-ams/programs-offices/national-organic-program>>.

⁵⁷⁹ *Council Regulation (EEC) No 2092/91; Council Regulation (EC) No. 834/2007; Commission Regulation (EC) No 889/2008.*

⁵⁸⁰ *Regulation (EU) No 1307/2013.*

⁵⁸¹ Matthias Stolze and Nicolas Lampkin, ‘Policy for Organic Farming: Rationale and Concepts’ (2009) 34 *Food Policy* 237, 238, 242.

⁵⁸² *Ibid* 237.

⁵⁸³ For the fees the Australian Government charges the organic industry to administer the exports regime, see Wynen (2007), above n 534, 12.

⁵⁸⁴ See also Christian R Vogl, Lukas Kilcher and Hanspeter Schmidt, ‘Are Standards and Regulations of Organic Farming Moving Away from Small Farmers’ Knowledge?’ (2005) 26(1) *Journal of Sustainable Agriculture* 5; J Guthman, ‘The Trouble with ‘Organic Life’ in California: A Rejoinder to the ‘Conventionalisation’ Debate’ (2004) 44(3) *Sociologia Ruralis* 310.

To the extent that the law is involved, in Australia legal actions are likely to be brought by aggrieved customers (processors, exporters, retailers, wholesalers and end-consumers); other organic businesses (including farmers) who are in competition with the defendant; organic associations concerned about collective integrity; or a government consumer protection agency like the Australian Consumer and Competition Commission (ACCC). Most of these actions are in civil law arenas: tort, contract, trademark breaches for the wrongful use of logos, fair trading, and consumer protection against fraudulent and misleading practices.⁵⁸⁵

Figure 6.2 summarizes the main features of organic governance in Australia, which has been itself ‘organic’ in the sense of having grown as the need arose and resistant to orderliness. Historically, a stricter regulatory regime developed for export-bound products labelled as ‘organic’ than for domestic products. By law,⁵⁸⁶ exported produce labelled as organic must be certified as such by an organization accredited with the Australian Government in accordance with a standard at least as stringent as the *National Standard for Organic and BioDynamic Produce*⁵⁸⁷ (discussed below).

⁵⁸⁵ See, eg, *Competition and Consumer Act 2010* (Cth).

⁵⁸⁶ *Exports Control Act 1982* (Cth); *Export Control (Orders) Regulations 1982* (Cth); *Export Control (Organic Produce Certification) Orders* (Cth).

⁵⁸⁷ Called in this study the *National Standard* (‘NS’ in the footnotes): OISCC, ‘National Standard for Organic and Bio-Dynamic Produce’ (ed 3.6, 2015) <http://www.ofa.org.au/national_standard>.

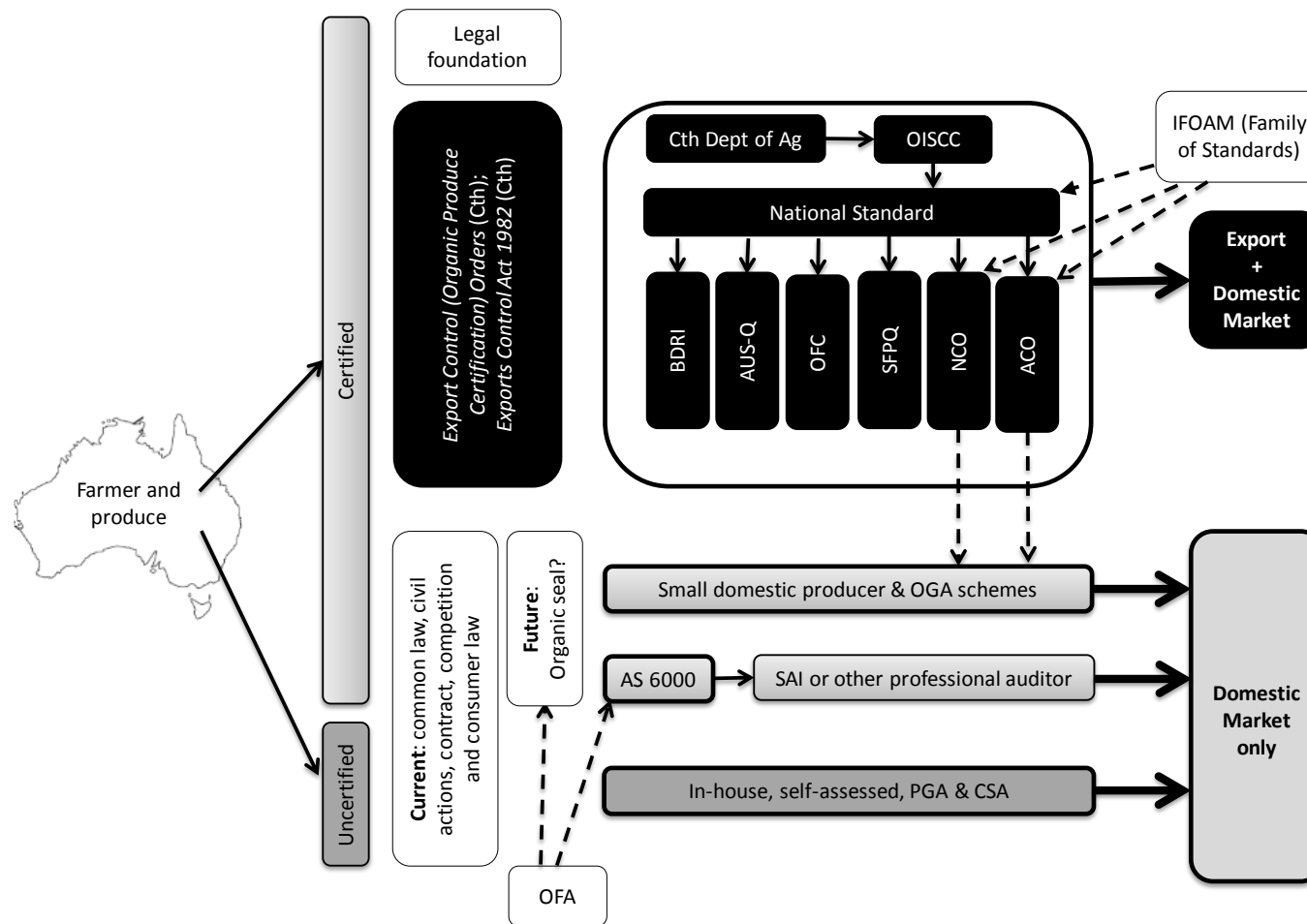


Figure 6.2: Organic governance in Australia

The statutory paraphernalia established by the export regime, comprising standards, accredited certifiers, certification, auditing and inspection, proved attractive in the domestic sphere for consumers and other supply chain actors wanting the assurance of certified produce. Consequently, the process established under the *National Standard* is the most versatile of the certification pathways in Australia, allowing certified produce to be sold either internationally⁵⁸⁸ or domestically.

6.2.4.1. *National Standard*

The Australian Government developed the export regime in the early 1990s in response to restrictions by the EU on organic produce imported into the Union.⁵⁸⁹ The Australian Government coaxed the organic sector into developing a legally mandated certification system for organic exports in response to the EU developments, and then charged the sector fees to operate the scheme through certification levies. The responsible agency at the time was the Australian Quarantine and Inspection Service (AQIS), which did not impose an organic standard but appointed a committee made up of organic sector representatives, government officers and other stakeholders to develop a standard for exports that could be co-opted into a regulatory framework.⁵⁹⁰ The result was the *National Standard*, updated in 1998, 2002, 2005 and 2015. By law exports labelled ‘organic’ are required to be certified by one of the accredited organizations as meeting requirements at least as stringent as the *National Standard*. Each certifier can use or develop its own unique standard, as long as it complies with the overarching *National Standard*.

OISCC

The administration of the arrangements has shifted from AQIS to the Productivity Division of the Commonwealth Department of Agriculture⁵⁹¹ and the associated committee has morphed into OISCC (Organic Industry Standards and Certification

⁵⁸⁸ Strictly speaking, it allows organic produce to leave Australia in compliance with Australian law, but this does not guarantee compliance with an importing country’s organic regulations, or with private market specifications of a particular customer in another country.

⁵⁸⁹ Wynen (2007), above n 534, 5.

⁵⁹⁰ The committee changed names several times: Organic Produce Advisory Council (OPAC), Organic Production Export Committee (OPEC), and Organic Industry Export Consultative Committee (OIECC).

⁵⁹¹ Department of Agriculture (Cth), <<http://www.agriculture.gov.au/ag-farm-food/food/organic-biodynamic>>

Council). OISCC is described in its website as ‘a Council for all matters pertaining to standards and certification for the organic industry – both domestically and for export’.⁵⁹² Its main tasks are to oversee the *National Standard* and the process for reviewing and altering it, oversee the accredited certifiers and act as a discussion forum. Initial membership comprised the accredited certifying organisations, with an option to later expand to stakeholders from a variety of sectors, as well as government observers. OISCC is resourced and funded by its members.⁵⁹³

Accredited Certifying Organizations

The Commonwealth currently accredits six certifying organizations: NCO, ACO, BDRI, OFC, AUS-Qual, and SFPQ.⁵⁹⁴ The list shows a remarkable diversity in origins, objectives and legal structures, as summarized in Table 6.2.⁵⁹⁵ They also differ in terms of their acceptance by *importing* countries: accreditation simply allows the certifier to certify produce for export to comply with Australian law, which does not of itself guarantee the importing country will accept the produce under its laws.⁵⁹⁶ The first three certifiers listed above are associated with relatively long-lived, not-for-profit, member-based organic/biodynamic associations, with strong farmer representation. OFC is a private certification business, AUS-Qual is a quality assurance firm owned by the meat industry, and SFPQ is a government agency.

The NCO and ACO Standards, together with the *National Standard*, are the subjects of more detailed analysis later in this chapter, because they were the standards under which the interviewed organic farmers operated. Paull notes that these two organizations ‘were the trailblazers in developing standards and certifying to those standards, and, having staked out the ground in the 1980s, they remain the leaders in

⁵⁹² OISCC <<http://www.oiscc.org/about-us.html>>.

⁵⁹³ OISCC, 'Terms of Reference' (2010) <www.oiscc.org/about-us.html>.

⁵⁹⁴ NCO (NASAA Certified Organic) and ACO (Australian Certified Organic) are wholly owned subsidiaries of NASAA and AOL, respectively.

⁵⁹⁵ This table also shows a non-exhaustive list of domestic certifiers. Domestic certification does not require certifiers to be government accreditation.

⁵⁹⁶ See Wynen (2007), above n 534, 7. And it is always possible that the specifications of a particular market or customer may be more stringent than the National Standard.

the field.⁵⁹⁷ NASAA and AOL have been successful in consolidating some of the numerous branches of the sector.

⁵⁹⁷ Paull (2013a), above n 520, 57-58.

Table 6.2: Organic certifying bodies accredited under the *National Standard*

Certifier	Specifically organic	Constitution	Membership-based ⁵⁹⁸	Membership ⁵⁹⁹	In organics since	Standard
BDRI	Yes	Non-profit co. limited by guarantee	Yes	Closed ⁶⁰⁰	1953	Own
NCO	Yes	Subsidiary of NASAA (non-profit co. ltd by guarantee)	Yes	Open	1986	Own
ACO	Yes	Subsidiary of AOL (non-profit co. ltd by guarantee)	Yes	Open	1987	Own
AUS-QUAL	No	Subsidiary of MLA & AMPC (non-profit R&D corporation)	Yes	Closed ⁶⁰¹	1992 ⁶⁰²	National
OFC	No	Private for-profit company	No. Shareholder-based	N/a	1996 ⁶⁰³	National
SFPQ	No	State government authority	No. Government	N/a	2000 ⁶⁰⁴	National

⁵⁹⁸ Or subsidiary of membership-based organization.

⁵⁹⁹ Of certifier or parent organization.

⁶⁰⁰ The membership organization associated with BDRI, the Bio-Dynamic Agricultural Association of Australia (BDAAA), is referred to as a ‘purposeful guild’: BDRI, <<http://www.demeter.org.au/applyingthethod.htm>>

⁶⁰¹ Membership of MLA and AMPC is limited to levy-paying red-meat producers and processors respectively.

⁶⁰² Establishment of National Standard.

⁶⁰³ Year of registration of company.

⁶⁰⁴ Enactment of *Food Production (Safety) Act 2000* (Qld).

NASAA was formed in South Australia in 1986,⁶⁰⁵ and registered as an association in 1987.⁶⁰⁶ It currently operates as ‘a non-profit company limited by guarantee comprising an association of members and certified operators (over 1000)’.⁶⁰⁷ Its certification services are handled by a legally separate but fully owned subsidiary, NASAA Certified Organic Pty Ltd (NCO).⁶⁰⁸ According to its website, ‘Membership is open to anyone supporting the aims and objectives of NASAA ... [I]t is not necessary to be a Member of NASAA to be a NASAA certified operator, and vice versa’.⁶⁰⁹ NASAA merged with the Organic Retailers and Growers Association of Australia (ORGAA) in 2002.⁶¹⁰

Australian Organic Limited began life in 1987 as the Biological Farmers of Australia (BFA), registered as a co-operative in 1988.⁶¹¹ Like NASAA, it has a legally distinct but wholly owned subsidiary to carry out its certification services: Australian Certified Organic Pty Ltd (ACO).⁶¹² Like NASAA, it is not necessary to be a member of AOL to engage its certification services. According to its website, most organic products sold in Australia carry its logo.⁶¹³ AOL merged with the Organic Vignerons Association of Australia (OVAA) in 2001, Organic Growers of Australia (OGA) in 2006 and the Tasmanian Organic-Dynamic Producers Inc. (TOP) in 2015.⁶¹⁴

Biodynamics is perhaps the oldest of the organic systems, and can be traced directly from Steiner’s Koberwitz lectures in 1924. The Bio-Dynamic Research Institute (BDRI) is the oldest of the Australian certifying bodies and one of the oldest continually existing organic organizations in Australia.⁶¹⁵ Though it operates under the

⁶⁰⁵ NASAA website, <<http://www.nasaa.com.au/welcome1.html>>

⁶⁰⁶ Paull (2013a), above n 520, 57.

⁶⁰⁷ NASAA website, above n 605.

⁶⁰⁸ Ibid. Notionally, this ameliorates a potential conflict of interest because a body that sets standards and earns money from licensing has a vested interest in certification: Wynen (2007), above n 534, 4. The standard used by NCO is called the ‘*NASAA Organic Standard*’ and is abbreviated in the footnotes of this study to ‘*NASAA*’.

⁶⁰⁹ NASAA website, <<http://www.nasaa.com.au/welcome1.html>>.

⁶¹⁰ NASAA website, above n 607.

⁶¹¹ AOL website, <<http://austorganic.com/whoweare/>> and <<http://austorganic.com/history/>>.

⁶¹² AOL website, <<http://austorganic.com/history/>>. The standard used by ACO is called the ‘*Australian Certified Organic Standard*’ and is abbreviated in the footnotes of this study to ‘*ACO*’.

⁶¹³ AOL website, <<http://austorganic.com/whoweare/>>.

⁶¹⁴ TOP website, <<http://www.tasorganicdynamic.com.au/>>.

⁶¹⁵ According to its website, it is a non-profit company, founded in 1957: BDRI website, <<http://www.demeter.org.au/about1.htm>> and

National Standard, its *modus operandi* is different from ACO and NCO, and leading biodynamic proponents are resistant to the whole certification project.⁶¹⁶ The BDRI is not the only organisation that can certify biodynamic production: the *National Standard* has biodynamic provisions,⁶¹⁷ so any accredited certifier can certify biodynamic produce to this standard.

ACO, NCO and BDRI administer their own certification processes at least as stringent as the *National Standard*.⁶¹⁸ Insofar as word count is an indication of the extra requirements of the individual standards, the *NCO* and *ACO Standards* are more than double the *National Standard*.⁶¹⁹ The remaining three accredited certifiers do not maintain unique standards, and certify according to the *National Standard*. AUS-QUAL Pty Ltd is a wholly owned subsidiary of AUS-MEAT Limited,⁶²⁰ itself a wholly owned joint venture of Meat & Livestock Australia (MLA) and the Australian Meat Processor Corporation (AMPC), the research and development corporations for the 'red meat' industry (sheep, goat and cattle), and red meat processors.⁶²¹ Organic Food Chain Pty Ltd (OFC) is a private company that provides certification and advice services to clients on a fee-paying basis.⁶²² Safe Food Production Queensland (SFPQ) is a statutory body⁶²³ that regulates the production and processing of meat, eggs, dairy and seafood in Queensland.⁶²⁴

In Figure 6.2, IFOAM and the Organic Federation of Australia (OFA) are included on the periphery of the diagram, as their role is indirect. In Europe, IFOAM plays a stronger role in consulting with government, whereas it affects the Australian scene

<<http://www.demeter.org.au/applyingthemethod.htm>>, though Paull notes it was registered in 1967: Paull (2013a), above n 520, 55.

⁶¹⁶ See Alex Podolinsky, 'An Organic Industry Overview' (1995).

⁶¹⁷ *NS*, s 3.23, as do *ACO* (Annex V) and *NASAA* (s 11).

⁶¹⁸ This is the case for exports. For small producers producing for the purely domestic market, both ACO and NCO allow some limited relaxations of their *ACO* and *NASAA Standards* (discussed below).

⁶¹⁹ *NASAA*: about 47,000 words over 116 pages; *ACO*: about 51,000 over 116 pages; *NS*: about 20,000 words over 81 pages.

⁶²⁰ AUS-QUAL website, <<http://www.ausqual.com.au/about-us.aspx>>.

⁶²¹ AUS-MEAT website, <<https://www.ausmeat.com.au/about-us/history.aspx>>.

⁶²² See OFC's Client Information Kit: OFC website <<http://www.organicfoodchain.com.au/>>

⁶²³ *Food Production (Safety) Act 2000* (Qld).

⁶²⁴ SFPQ website, <http://www.safefood.qld.gov.au/index.php?option=com_content&view=article&catid=56&id=66&Itemid=38>.

only indirectly through its influence on AOL and NASAA, both of whom are members. The *ACO*, *NCO* and *National Standards* are counted as part of the IFOAM 'Family of Standards',⁶²⁵ which has some bearing on 'equivalence', meaning that one certification body recognizes another.⁶²⁶

Although the Commonwealth refers to the OFA as the peak body for the Australian organic industry,⁶²⁷ it is OISCC that has the formal role in organic governance. OFA played a role in the development of a national domestic standard (*AS 6000*) and the push for a common national organic seal, discussed below, though uniting the organic movement in Australia and advocating for its interests in dealings with government and industry have proven challenging for the OFA.⁶²⁸

6.2.4.2. Domestic Produce

In the *export* arena, all organic produce must, by law, be certified to the *National Standard*, but, in the *domestic* arena, certification is not mandated by law. It is lawful to make an organic attribution claim on produce sold domestically without certification. In the domestic arena, it is possible for farmers to adopt a purely self-assessed approach, where they produce according to their own view of organic production, call it organic at point of sale, and defend these decisions against any claim of deceptive or misleading conduct under the *Competition and Consumer Act 2010* (Cth). Similarly, retailers and other distributors may impose in-house conditions more or less stringent than the *National Standard* and, again, this is possible as long as it is not deceptive or misleading. Consumers may engage directly with farmers, without requiring the formalities of certification, via farmers' markets, self-harvest, and food-box schemes,⁶²⁹ and alternative verification models such as CSA and PGS.

Farmers close to the end-consumers of their product may find certification unnecessary because trust and confidence arises from the development of a face-to-face

⁶²⁵ IFOAM, 'Family of Standards' (2015) <<http://www.ifoam.bio/es/ifoam-family-standards>>.

⁶²⁶ For example, where an organic product contains ingredients from a number of sources, ACO allows products of other recognized certifiers to be included in an ACO certified product, subject to some restrictions: *ACO*, ss 3.7.1, 3.7.3.

⁶²⁷ Department of Agriculture website, <<http://www.agriculture.gov.au/ag-farm-food/food/organic-biodynamic>>.

⁶²⁸ Paull (2013a), above n 520.

⁶²⁹ See Department of Primary Industries (Vic), above n 535.

relationship. However, most consumers of foodstuffs do not have close relationships with the farmers who produce their food and demand for certified produce remains in the domestic sphere.

Certified Domestic Produce

For farmers selling into both domestic and export markets, the most versatile option is certification under the *National Standard* by one of the six accredited certifiers. Anecdotally, the vast majority of certified domestic produce is certified in this way. However, there are other domestic certification pathways.

Both ACO and NCO use the basic process established under the *National Standards* for certification of both exports and domestic produce. However, both allow some slight relaxations of the standards that make certification simpler and cheaper for small domestic producers who produce solely for the domestic market.⁶³⁰ Consequently, produce certified under the small domestic producer schemes alone could not be legally exported.

A more recent option for voluntary domestic certification is the *AS 6000* process, developed with Standards Australia (the peak standards body in Australia) and which, according to the preface of *AS 6000*, is based on the *National Standard*.⁶³¹ Reasons given for its development include overcoming difficulties for domestic courts and the ACCC in adjudicating cases of fraudulent use of the organic descriptor,⁶³² and ensuring the Australian Government does not breach WTO rules were it to restrict the importation of overseas products labelled as 'organic' that were not compliant with the *National Standard*.⁶³³ Produce certified under *AS 6000* cannot be sold for export, and perhaps the versatility of the *National Standards*' certification pathway explains the fact that this research has not been able to uncover evidence that *AS 6000* has gained much traction as a domestic certification pathway since its inception in 2009. Furthermore, the substantial alignment amongst the *National Standard*, *AS 6000* and

⁶³⁰ See NCO Producer Certification Application form (see p 2, Domestic Producers): <<http://www.nasaa.com.au/steps4.html>>. The AOL scheme for small domestic producers is the OGA process, originally distinct but now merged with AOL: <<http://aco.net.au/standard/oga/>>.

⁶³¹ *AS 6000*, 3.

⁶³² Andre Leu, 'The Australian Standard for Organic and Biodynamic Products and Regulation - Organic Federation of Australia Position Paper ' (2009); *ACCC v G O Drew Pty Ltd* [2007] FCA 1246, [44].

⁶³³ Wynen (2007), above n 534, 6.

the small domestic producer processes of ACO and NCO means the differences between certification for export and domestic markets are probably marginal. Wynen predicts that, over time, the two processes will converge.⁶³⁴ The OFA has promoted the idea of a single Australian organic and biodynamic seal (akin to the USDA or EU logo) to reduce consumer confusion from the multiplicity of standards and certifiers, but this has yet to come to fruition.⁶³⁵

6.2.5. Introduction to the Standards

This study concentrates on the provisions of the *National, NCO* and *ACO Standards* relevant to farms with extensive grazing, grain cropping and horticulture, given the enterprises of the interviewees in the case study.⁶³⁶

6.2.5.1. Objectives of Standards

The *National Standard* defines organic as:

The application of practices that emphasise the use of renewable resources; and conservation of energy, soil and water; and recognition of livestock welfare needs; and environmental maintenance and enhancement, while producing optimum quantities of produce without the use of artificial fertiliser or synthetic chemicals.⁶³⁷

The *National Standard* projects a multi-functional view of modern farming by articulating multiple roles for the farmer.⁶³⁸ The multi-purpose paradigm is inherent in the IFOAM principles,⁶³⁹ of which both AOL and NASAA are members. The *ACO Standard* reiterates the *National Standard's* multiple roles of farmers in its 'organic production principles', and adds regeneration of land into the mix.⁶⁴⁰ Similarly, the *NASAA Standard* encapsulates the *National Standard* objectives and adds extras in its 'aims and principles', including fostering local and regional production and distribution; managing animals according to their behavioural and physiological

⁶³⁴ Ibid 11.

⁶³⁵ OFA website: <http://www.ofa.org.au/national_organic_mark>.

⁶³⁶ For sectors mentioned in the standards in addition to interviewees' enterprises, see Appendix 13 (Element 1).

⁶³⁷ *NS*, Definitions.

⁶³⁸ *NS*, s 3.1(iii).

⁶³⁹ IFOAM, above n 527.

⁶⁴⁰ *ACO*, s 4 (organic production principles).

needs; ensuring quality of life for people engaged in the organic sector; progressing a socially just and ecologically responsible organic production chain; and valuing indigenous knowledge and traditional farming systems.⁶⁴¹ All three standards pre-date the formalization of IFOAM's Four Principles in 2005, but are listed by IFOAM in its 'family of standards'.⁶⁴²

6.2.5.2. Basic Characteristics of Organic Certification in Australia

The basic steps of converting a conventional farm to a certified organic farm are set out in Figure 6.3. The process commences when a prospective participant applies to ACO or NCO to become certified, and is generally a one- to three-year process.⁶⁴³ The time taken to full certification depends on the farm's management prior to the application for certification. Where a farm has been managed according to the *ACO* or *NASAA Standards* for at least two years prior to the application for certification, the process requires only a one-year 'in-conversion' period before full certification. Assuming the applicant applied a prohibited input on the farm on the day before application for certification, then the process would take a minimum of three years to full certification.

The application process in both cases involves completing a detailed statutory declaration, reviewing the risks of contamination (agricultural chemicals, heavy metals and GMOs) from previous operations on the farm,⁶⁴⁴ and development of an organic management plan. New applicants must allow the certifier to take soil and product samples for independent testing of chemical residues and GMOs if the risk assessment reveals a risk of contamination.⁶⁴⁵

⁶⁴¹ *NASAA*, s 1.4.

⁶⁴² IFOAM, above n 625.

⁶⁴³ *NS*, s 3.1.3. In exceptional cases it may be longer: *NS*, s 3.2.4; *NASAA*, s 2.2.2.

⁶⁴⁴ *ACO*, s 3.1.7; *NASAA*, s 2.4.1.

⁶⁴⁵ *NS*, Guidance Document Residue Testing 1.1, 79.

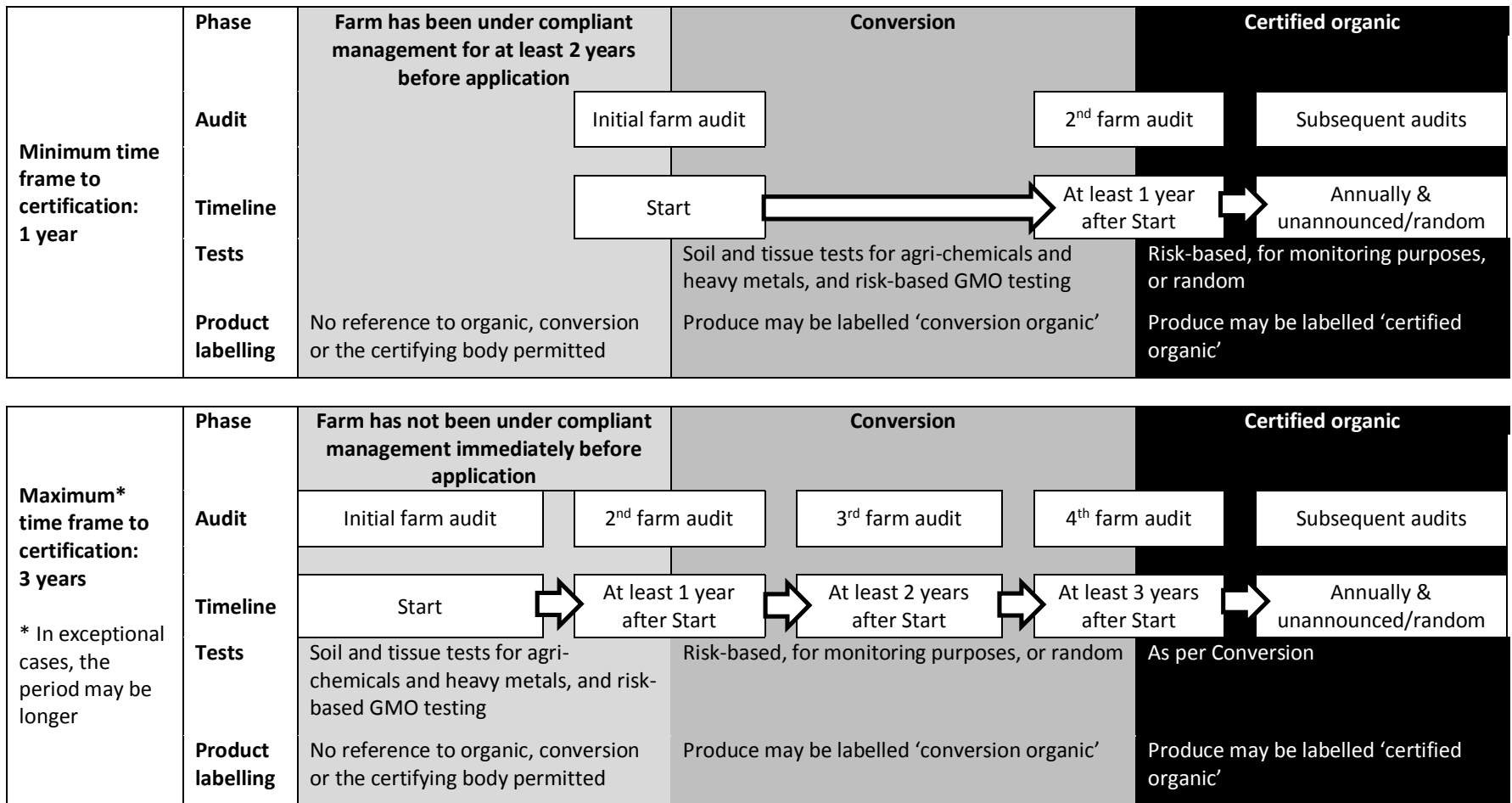


Figure 6.3: Steps to organic certification under *National, ACO and NASAA Standards*

For agricultural products partly produced on organic farms and partly on non-organic farms (such as seed stock produced or livestock reared conventionally but grown-out and/or harvested organically) restrictions apply on their organic status.⁶⁴⁶

For processed products with multiple ingredients, the *National Standard* provides that for a product to be sold as ‘organic’, at least 95 per cent of ingredients⁶⁴⁷ must be organic, with restrictions on the remaining 5 per cent.⁶⁴⁸ Products may be labelled ‘100% organic’ if that is the case, and ‘made with organic ingredients’ if at least 70 per cent of ingredients are organic.⁶⁴⁹ Less than 70 per cent, the *National Standard* permits the organic ingredients to be listed as organic in the ingredients list.⁶⁵⁰ For farms still in the conversion phase, labelling must refer to ‘in-conversion organic’ or ‘conversion to organic’.⁶⁵¹

Biodynamics is treated as a sub-set of the broader category of organics in the standards.⁶⁵² In addition to all the other requirements of certification in the standards, biodynamic certification requires closer attention to Steiner’s teachings and the manufacture and application of a set of preparations (the 500s series) applied as biological activators in soil and compost.⁶⁵³

6.2.5.3. Hybrid Nature of the Standards

Recapping on the four broad categories of environmental standards listed in the CLM case study⁶⁵⁴ organic standards are hybrid process-production-performance standards. To explain this hybrid nature, the example of residues from heavy metals, synthetically manufactured pesticides or herbicides is used in the following description.

If organic farming was governed by an entirely process-driven standard (which it is not), then it would not matter that an end-product had high levels of contamination from synthetically manufactured pesticides, herbicides or heavy metals as long as

⁶⁴⁶ *NS*, ss 3.7.2 and 3.12 (Table 1); *NASAA*, ss 4.4.1, 4.2.3, 6.21.

⁶⁴⁷ By weight for solids, and by volume for liquid products: *NS*, s 7.1.1; *NASAA*, 2.21.

⁶⁴⁸ *NS*, s 7.3.1.

⁶⁴⁹ *NS*, ss 7.2 and 7.4.

⁶⁵⁰ *NS*, s 7.5; *NASAA* is stricter: *NASAA*, s 2.20.11.

⁶⁵¹ *NS*, s 7.6.

⁶⁵² *NS*, s 3.23; *ACO*, Annex V; and *NASAA*, s 11.

⁶⁵³ *NS*, s 3.23(iv).

⁶⁵⁴ Based on Mech and Young, above n 123, 7-9; Lockie and Higgins, above n 110, 7.

participants are able to show they followed the organic process of not applying these inputs. The process is designed to lessen the likelihood of contamination but does not guarantee it in recognition of ambient and historical sources of contamination. Process-standards are sometimes called ‘organization-oriented’ standards, reflecting the fact that the standard targets the organization (i.e. the participant or firm) and the production-values the organization applies to production rather than the product itself.⁶⁵⁵

If organic farming was governed purely by a product standard (again, it is not), then quality of the end-product is all important and it could only be sold as organic if it met quality criteria (‘production protocols’).⁶⁵⁶ Theoretically, a purely product-based standard could potentially ignore all the prescriptions about process, procedure and production-values and simply require that produce be tested before sale; if it contains less contaminant than allowed by the criteria it passes, and if it exceeds the criteria, it fails, regardless of how scrupulously the farmer refrained from prohibited inputs. In this sense, product standards are strict liability mechanisms: they apply to the farmer’s detriment without ascribing fault to the farmer. Theoretically, under a purely product-oriented paradigm, farmers could even use prohibited inputs, as long as none were detectable at point of sale.

A performance-based environmental standard is akin to a product-oriented standard⁶⁵⁷ by requiring that the farmer achieve a particular outcome, rather than having followed a procedure. Taking a livestock example, a process-oriented standard may require the farmer to undertake an assessment of the risks of animal manure or pasture fertilizers polluting waterways on the farm. A performance-oriented standard may focus on inputs, outcomes, or both. An input performance standard may, for example, require the farmer to construct a buffer zone (e.g. a fenced, grassed exclusion area) along the waterway. An outcomes performance standard may require the farmer to show, through quantitative water quality testing, that the water in the waterway has not been contaminated by nitrates and disease-causing pathogens. Theoretically, an outcomes standard does not need to prescribe inputs – it is open to farmers to use whatever

⁶⁵⁵ Mech and Young, above n 123, 8.

⁶⁵⁶ Ibid, 8.

⁶⁵⁷ Mech and Young group them together as ‘production-oriented standards’: ibid 7.

technique they desire (preventative, ‘end-of-pipe’, or both), as long as the outcome is achieved.

Each approach has its advantages and disadvantages. Process standards emphasize ‘management processes, tracking internal events, continual improvement and learning-by-doing’,⁶⁵⁸ which seems consistent with the self-standard and normative internalization theories discussed in Chapter 2. Ideally, good performance and product quality should eventuate as a result of the farmer identifying and addressing risks, which require process. A process-oriented standard could also be an acknowledgement that maintaining the public interest is a mutual responsibility of farmers and end-users of farm produce. Part of this mutual responsibility is a sharing of risk. As mentioned in Chapter 3, the farmers’ ethical responsibility is to manage impacts, not to achieve particular outcomes, which may well be beyond their management control. A purely product- or performance-oriented standard puts all the risk on the farmer.

On the other hand, again as mentioned in Chapter 3, doing our ethical best is not the same as maintaining environmental integrity, which implies a performance characteristic. A purely process-oriented standard might provide leeway for fraud – it might not be easy to track whether a farmer has actually followed a procedure or addressed issues, which is ameliorated to some extent by product-based standards. A strict liability approach may be required if the public relations damage to the whole industry from contamination in end-products is too great to tolerate, even where contamination is no fault of the farmer.

Organic standards are hybrid standards because they use a mix of the three methods. The process/procedural approach emphasizing production-values is recognized in the scoping statement of the *National Standard*, which focuses on reducing risks associated with an outcome, rather than warranting the outcome:

In itself, this Standard cannot guarantee that organic or bio-dynamic products are free of non-allowed residue material, or other environmental contaminants as they may be subjected to pollution sources beyond the control and/or detection by the certified operator.⁶⁵⁹

⁶⁵⁸ Ibid 8.

⁶⁵⁹ NS, s 1.6. See also NASAA, s 3.1; ACO, ss 4.7.1, 4.7.2, 4.7.26.

This has implications for how the end-product is ultimately labelled:

No claims may be made as to the chemical-residue-free status of organic products for sale, except where this can be verified by the operator. No claim shall be made on the label or advertising material that suggests to the purchaser that the certified organic status of the product constitutes a guarantee of superior organoleptic, nutritional or salubrious quality.⁶⁶⁰

The many references in the standards to residue testing evince a product-orientation. The standards do not require universal testing of all produce (as might be required by a *purely* product-based standard), but do require testing at strategic points in the production chain. For example, new participants must allow the certifier to take soil and product samples for independent residue tests in the application stage, and where necessary throughout the duration of their certification.⁶⁶¹ Follow-up tests are required where previous testing reveals a problem.⁶⁶² In the *NASAA Standard*, testing is automatically required for all organically certified wool, meat, honey and eggs prior to sale, and for other products is required when ‘there is evidence that prohibited chemicals are present’ or ‘if there is indication of risk from contamination’.⁶⁶³ The presence of GMOs, however scrupulously a farmer observes the anti-GMO proscriptions, results in immediate decertification of produce.⁶⁶⁴

Food Standards Australia New Zealand (‘*FSANZ*’)⁶⁶⁵ sets ‘maximum residue levels’ (MRLs) for pesticide residues in foodstuffs; these MRLs are mandated by law as the maximum permissible levels.⁶⁶⁶ The general rule for ACO and NCO certified organic produce is that pesticide residues should be no more than one tenth of the MRLs set by *FSANZ*.⁶⁶⁷

⁶⁶⁰ *ACO*, s 3.5.9.

⁶⁶¹ *NS*, Guidance Document Residue Testing 1.1, 79.

⁶⁶² See, eg, *NASAA*, s 3.1.5.

⁶⁶³ *NASAA*, ss 3.1.14, 3.1.1, 3.1.13.

⁶⁶⁴ *NASAA*, s 3.2.12.

⁶⁶⁵ A statutory agency established under the *Food Standards Australia New Zealand Act 1991* (Cth).

⁶⁶⁶ Part 7 of the *Pesticides Act 1999* (Cth) and cl 31 of the *Pesticides Regulation 2009* (Cth).

⁶⁶⁷ *NS*, s 3.1.9(a); *ACO*, ss 4.7.2 and 4.7.7; *NASAA*, s 3.1.3 and Annex 7. However, specific markets may require even more stringent residue levels, eg zero detectable residues.

Leu and Clay compared Australian organic standards with *ISO 14001* (a process/procedural standard) and found much overlap:

The significant area of difference identified was the systematic risk management, monitoring and continuous improvement process featured in EMS. Compliance to Standards as required in the organic program was acknowledged as a strength and a difference between systems.⁶⁶⁸

Alexandra and May tabulated the broad themes captured by the product and performance standards of the *NASAA Standard*, which showed it addresses a broad sweep of environmental, food hygiene, social and governance concerns.⁶⁶⁹

6.3. Design of Organic Certification

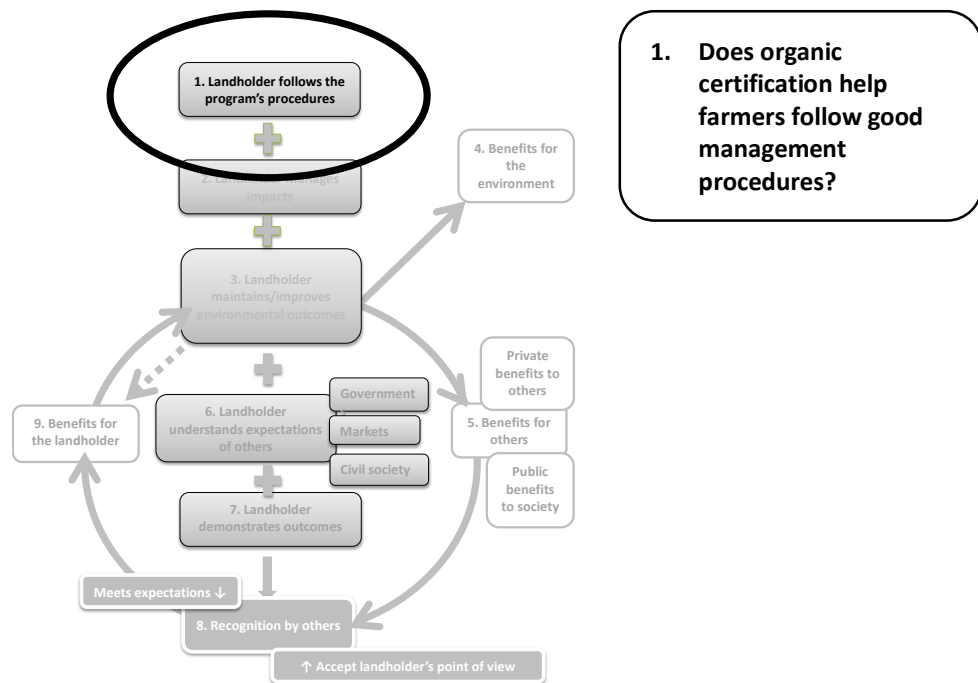
This section follows the format of the CLM case study, and reports the results of the investigation of whether the design of organic certification facilitates participants' realization of the elements of the conceptual framework within their management sphere, with some brief comments made on the elements outside of their management sphere. As for CLM, Elements 2 and 6 respectively require recourse to the 14 attributes for internalization and 11 ideal features desired by external stakeholders. To re-emphasize a point made in the CLM case study, it was beyond the scope of this study to investigate whether such realization was in fact achieved by organic certification; the study was limited to whether organic certification had design features that make it *more likely*.

Two methods were available to undertake this investigation: document analysis of three organic certification standards (*National, NCO and ACO Standards*), and additional materials about NASAA, AOL, NCO and ACO available from their websites; and qualitative interviews with external stakeholders (from which the 11 ideal features are drawn).

⁶⁶⁸ Leu and Clay, above n 555, ('Learning 4').

⁶⁶⁹ Alexandra and May, above n 125, 37.

6.3.1. Element 1, Research Question 1: Following procedures



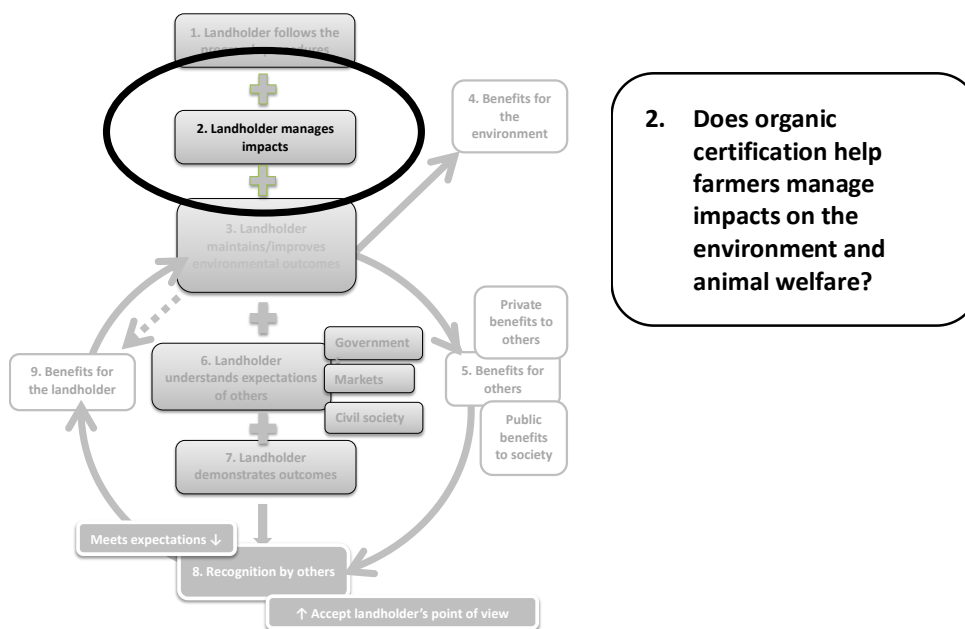
Staff of the certifying body shepherd prospective participants through the preliminary steps of certification with the aid of proprietary forms developed by ACO and NCO and openly available on their websites. These forms collate detailed information on the applicant’s enterprises, intentions, farmland and the farm’s history.⁶⁷⁰ Unlike CLM’s *myEMS*, which is interactive, organic certification is a form-based process, with a delay between the farmer thinking about the form’s questions and the certifying body providing feedback. However, it can be expected that the process encourages the landholder to reflect on risks via questions on a range of environmental, agronomic and animal welfare parameters.⁶⁷¹ AOL/ACO and NASAA websites state that for growers who become members of the associations, additional support is provided, such as magazines, newsletters, marketing reports, technical advice, workshops, and networking and training opportunities.⁶⁷²

⁶⁷⁰ <<http://www.nasaa.com.au/steps4.html>> and <<http://aco.net.au/form-search/>>

⁶⁷¹ See Appendix 13 (Element 1 – Application details).

⁶⁷² See ACO and NCO application forms: <<http://aco.net.au/form-search/>> and <<http://www.nasaa.com.au/welcome3.html>>. This is in addition to other benefits membership provides, including voting rights in and representation by the associations.

6.3.2. Element 2, Research Question 2: Managing Impacts



6.3.2.1. Organic Certification's General Approach to Management

Organic proponents view conventional farming as a reactive, curative approach, which relies on the application of technical inputs for specific problems (pesticides, herbicides, fertilizers), and unwittingly simplifies the biological systems on which the farm depends, making them less robust and bound to an unending cycle of reliance on even more inputs (the 'pesticide treadmill').⁶⁷³ Organic standards emphasize a proactive and preventive approach, loosely called 'management', which features attention to farm design, cultural practices and the nurturing of complex, diverse and resilient biological systems.⁶⁷⁴

In relation to health, disease and treatment in crops and livestock, the *National Standard* states a 'reliance on substances rather than management practices for the control of pests and diseases' is inconsistent with organic practice.⁶⁷⁵ Management practices encouraged by the standards for cropping and livestock enterprises are summarized in Appendix 13 (Element 2 – Management, rather than inputs). The

⁶⁷³ Robert Van den Bosch, *The Pesticide Conspiracy* (University of California Press, first published Doubleday, 1978, Garden City, USA, 1989); Jean-Philippe Deguine, Pierre Ferron and Derek Russell, 'Sustainable Pest Management for Cotton Production: A Review' in Eric Lichtfouse et al (eds), *Sustainable Agriculture* (Springer Science & Business Media, vol 1, 2009) 411.

⁶⁷⁴ See, eg, NASAA, s 4.14 (General Principles).

⁶⁷⁵ NS, ss 3.8 and 3.15(iii). Reiterated in ACO, s 4.5.1; NASAA, s 4.14.

application of inputs is not prohibited, but is expected to augment (rather than replace) management practices,⁶⁷⁶ or to be used in emergencies.⁶⁷⁷

Organic Management Plan

The main instrument used by producers to manage environmental and animal welfare impacts is the Organic Management Plan (OMP), in which the farmer must ‘identify and document how they will develop and maintain the organic integrity of their operation in accordance with this Standard’.⁶⁷⁸

For ACO and NCO, the process of developing an OMP commences with the detailed questionnaire,⁶⁷⁹ and both organizations provide OMP templates on their websites.⁶⁸⁰ Prospective participants use the pre-certification phase to grasp the requirements of organic certification and develop strategies for compliance in the OMP.⁶⁸¹ The OMP becomes an important auditing tool to verify ‘how, through time, the operator is continually improving the environmental and productivity outcomes of the operation’.⁶⁸² For both ACO and NCO, the OMP is augmented by an annual report completed by the farmer.⁶⁸³

Both *ACO* and *NASAA Standards* cover common ground for the development of the OMP, as well as some unique requirements.⁶⁸⁴ Both require a detailed farm map to accompany the OMP showing on-farm and neighbouring activities, significant environmental aspects, and contamination risks.⁶⁸⁵

⁶⁷⁶ *NS*, s 3.15.2, Appendix 1-Annex A(3); *ACO*, s 5.1.1, Annex 1 (botanical pesticides); *NASAA*, s 4.14.6.

⁶⁷⁷ *ACO*, s 4.5.2.

⁶⁷⁸ *NS*, s 3.1.2

⁶⁷⁹ *ACO*, s 3.1.1, *NASAA*, s 2.4.

⁶⁸⁰ *ACO*: <<http://aco.net.au/form-search/>>; *NASAA*: <<http://www.nasaa.com.au/steps1.html>>

⁶⁸¹ *NASAA*, s 2.1.

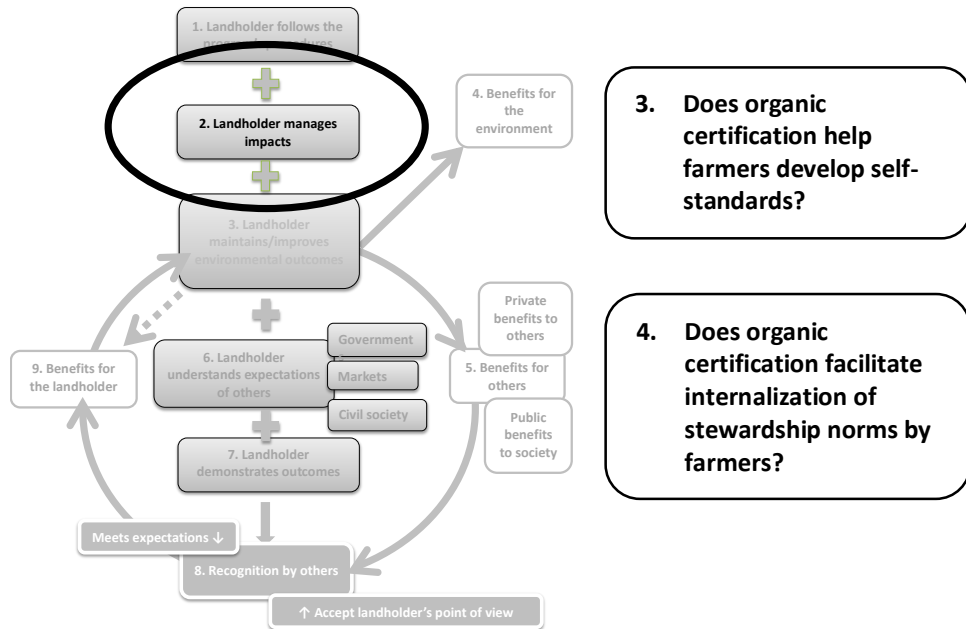
⁶⁸² *ACO*, ss 2 (definitions), 3.1.7.

⁶⁸³ *ACO*, s 3.4.1(2); *NASAA*, s 2.6.3.

⁶⁸⁴ See Appendix 13 (Element 2 – Organic Management Plan).

⁶⁸⁵ *ACO*, s 3.4.1(1), *NASAA*, s 2.5.

6.3.3. Element 2, Research Questions 3 and 4: Self-standards, and Internalization of Stewardship Norms



Organic certification processes are relatively straight-forward, honed by many years of practical experience, and arguably are intuitively informed, rather than guided by academic theory. This is not to say that organic farmers do not engage in symbolizing, forethought, goal-setting, vicarious learning and self-regulation, but inferences about the extent to which organic certification helps farmers facilitate internal processes were more difficult to make than for CLM.

Organic certification supports the self-reflective capability in Bandura’s behavioural model because of steps in the process of conversion that provide opportunities for participants to reflect on their management skills and readiness for certification, including the application questionnaire, feedback from the certifying organization, development of the OMP, audits and inspections.

It is not possible for this study to comment on the extent that certification bodies encourage peer group learning⁶⁸⁶ but, as noted above, the AOL and NASAA websites state that membership support includes workshops, and networking and training opportunities.

⁶⁸⁶ Attribute 8: peer support.

The emphasis on preventative management rather than inputs and the discipline imposed by not having automatic resource to curative inputs could possibly help organic farmers develop an understanding of the whole farming system, as well as stimulate farmers' creativity and problem solving capacities. There are no quick fixes in organic systems, which may encourage organic producers to become attuned to how the functioning of the whole system contributes to disease and pest management.

The standards make sustainability information readily available⁶⁸⁷ by including explanatory material. Every major division of the *National Standard* begins with a set of 'General Principles' followed by the standard proper. The *NASAA Standard* uses a similar structure, with soft rules (general principles and recommendations) preceding the hard rules. The *ACO Standard* tends to integrate guidance and prescription within the sections, though it does commence major divisions with explanations, objectives, aims, principles and summaries. In this way, the standards play multiple roles – codification, education, as well as stimulating a discussion on ethics.⁶⁸⁸

Prospective organic farmers are given time to adapt to the rules, which, to some extent, caters for different levels of individual ability and the farm's agronomic capacity.⁶⁸⁹ Participants are given at least a year to prepare for the in-conversion phase, then at least two years to prepare for full certification. These are minimums with longer time frames in specific instances.⁶⁹⁰

The standards build capacity in farmers⁶⁹¹ by harmonizing other governance instruments and initiatives,⁶⁹² which would be difficult for individual farmers to attempt. As mentioned above, AOL and NASAA provide support to members to learn about organic farming via periodicals, reports, advice, workshops and training.

It is likely that organic certification promotes interdependence⁶⁹³ through the mutual need to protect the organic brand. Certified growers have an incentive to comply with

⁶⁸⁷ Attribute 1: information.

⁶⁸⁸ Attributes 1-3: information, rationale and explanation. See also Luttikholt, above n 528.

⁶⁸⁹ Attribute 3: tailoring.

⁶⁹⁰ See, eg, *NS*, s 3.2.5; *ACO*, s 3.6.2; *NASAA*, s 2.2.2.

⁶⁹¹ Attributes 5 and 6: build competence, and enhances means.

⁶⁹² See, eg, Introduction to the *ACO Standard* (p 4). See more discussion under Element 6.

⁶⁹³ Attribute 9: interdependence.

the standards and censure those who breach them, because one grower's breach can damage the reputation of organics as a whole. Indeed, the same applies to the whole supply chain. Contamination in a processing facility can have repercussions for farmers, and this sense of mutuality and shared fate is likely to be enhanced where farmers must access off-farm or inter-farm inputs (e.g. livestock feed or seed stock).⁶⁹⁴

Of the accredited certifying organizations, ACO and NCO (as well as BDRI) have organizational structures conducive to co-operation, interdependence and horizontal collectivism.⁶⁹⁵ Both are subsidiaries of non-profit membership organizations – AOL and NASAA – with strong farmer-bases.⁶⁹⁶ Participants are not required to be members of these associations in order to deploy their certification services,⁶⁹⁷ but they are certainly eligible for membership.⁶⁹⁸ Both are linked to international organic fora; for example, both are members of IFOAM, which itself uses participatory decision-making processes that value exchange and consensus building.⁶⁹⁹

Theoretically, certified farmers have no influence on individual certification proceedings, because of the legal separation of standard-setting and certification roles,⁷⁰⁰ but they can play a role in the development of the standards through membership of AOL or NASAA, or via submissions and communications with OISCC and its sub-committees.⁷⁰¹ Members are bound by the rules of the standard as a type of private legislation, but given the membership structure of AOL and NASAA, it could be expected they have a stronger sense of binding *themselves* to the rules for mutual benefit, rather than being bound to rules by external authority.

⁶⁹⁴ ACO, ss 3.5.17, 5.1.28; NASAA, s 6.5.

⁶⁹⁵ Attributes 7, 9 and 10: co-operation, interdependence, and horizontal collectivism.

⁶⁹⁶ ACO, s 2, and NASAA website: <<http://www.nasaa.com.au/welcome1.html>>.

⁶⁹⁷ <<http://www.nasaa.com.au/welcome3.html>>.

⁶⁹⁸ ACO, p 115.

⁶⁹⁹ Lutikholt, above n 528, 347, 348.

⁷⁰⁰ Strictly speaking, standard-making and certification are separate functions, and certification is undertaken by AOL and NASAA's wholly owned subsidiaries, Australian Certified Organic (ACO) and NASAA Certified Organic (NCO): <<http://aco.net.au/about/>> and <<http://www.nasaa.com.au/welcome1.html>>.

⁷⁰¹ For example, through its National Standards Sub-Committee (NSSC): OISCC website, <<http://www.oiscc.org/about-us.html>> AS 6000 has a more restricted process for receiving submissions – these need to be sponsored by a recognized industry association.

A feature of organic certification that seems less conducive to normative internalization is the fairly prescriptive nature of the standards, which leaves less room for choice and self-responsibility.⁷⁰² The risks of overly prescriptive standards are vigorously debated within organic certification circles.⁷⁰³

The *ACO* and *NASAA Standards* contain provisions of varying degrees of prescriptiveness, from suggestions and guidelines to strict requirements.⁷⁰⁴ A list of the main prohibitions in the three standards is shown in Appendix 13 (Element 2 – Prohibitions). In some cases, prohibitions are qualified, as in the case of veterinary drugs, antibiotics and vaccines, which are notionally prohibited but allowed in treating animal disease in special circumstances and with restrictions on the labelling of subsequent products from the treated animals.⁷⁰⁵ In any case, the standards prioritize the health and welfare of the animal and access to treatment, over certification.⁷⁰⁶

The specific prohibitions on contamination from agrichemicals and GMOs mean that certified organic farmers can find themselves at odds with neighbouring conventional farmers, evidenced by the various provisions in the standards for separation and exclusion by way of barriers, buffer zones, livestock segregation, quarantine and tagging.⁷⁰⁷

The provisions dealing with contamination by synthetically manufactured inputs (e.g. pesticides, herbicides and heavy metals) are strict, even where the contamination was not the fault of the farmer. Those dealing with contamination by GMOs are even stricter. In some cases, compliance with the law, though required by the standards, will not release a farmer from a strict application of the rules.⁷⁰⁸ Even ‘environmental and unforeseen contamination’ may result in a twelve-month suspension of certification for affected areas.⁷⁰⁹ Milk or wool can gain organic status after a previously conventionally raised animal has been in an organic farming system for a prescribed

⁷⁰² Attributes 11 and 12: choice and responsibility.

⁷⁰³ Lutikholt, above n 528, 356.

⁷⁰⁴ See Appendix 13 (Element 2 – Prescriptions).

⁷⁰⁵ *NS*, ss 3.15.4–3.15.8; *ACO*, ss 5.1.2–5.1.5; *NASAA*, ss 6.6.4–6.6.7.

⁷⁰⁶ See *NS*, s 3.15.3; *ACO*, s 5.1.4; *NASAA*, s 6.6.3.

⁷⁰⁷ See Appendix 13 (Element 2 – Separation and exclusion).

⁷⁰⁸ *ACO*, ss 4.2.13, 4.5.5, 4.7.23, 5.7.6.

⁷⁰⁹ *ACO*, s 4.7.24.

period, but sheep and cattle used for meat production must be raised according to the organic standards for their entire lives,⁷¹⁰ and can suffer permanent loss of organic status in the event of prohibited treatments.⁷¹¹

Generally for synthetic manufactured inputs and heavy metals, there is a small degree of leeway: as long as the contamination was beyond the control of the certified operator and residue testing confirms the contamination is no more than one tenth of the maximum residue limit (MRL) for the chemical, then the product may generally be sold as organic, subject to the specifications of some particular markets that may have more stringent requirements.⁷¹² The *ACO Standard* notes that this concession ‘is in recognition of unavoidable ambient and historical contaminants’.⁷¹³ No such concession applies to GMOs: any known GMO contamination results in the product’s exclusion from sale as organic,⁷¹⁴ and the requirements are generally more stringent for GMOs than for other types of contamination.⁷¹⁵

The prescriptive character of the standards is coupled with various exceptions and qualifications controlled by the certifying organizations. There are many provisions in the standards that allow the certifying body discretion to impose itself on the farmer’s decision-making sphere.⁷¹⁶

As explored in Chapter 2, the existence of strict standards does not prevent autonomous adherence to stewardship norms. As Chirkov et al noted in a quote cited in Chapter 2, we can obey the traffic police in an entirely self-determined way if we have internalized the value of traffic laws.⁷¹⁷ The earlier discussion on the motivation to farm organically suggests that organic farmers bring to their endeavours strong innate and internalized pro-environmental values, and potentially the strictures of the organic standards reinforce, rather than antagonize, these values.

⁷¹⁰ *NS*, Table 1 (p 24).

⁷¹¹ *ACO*, s 5.1.4 and Table 5a; *NASAA*, s 6.6.6 and Table 6.

⁷¹² *NS*, s 3.1.9(a); *ACO*, ss 4.7.2 and 4.7.7 and *NASAA*, s 3.1.3 and Annex 7.

⁷¹³ *ACO*, s 4.7.2.

⁷¹⁴ *NS*, s 3.1.9(b); *ACO*, ss 4.2.12, 4.7.14; *NASAA*, ss 3.2.9 and 3.2.12.

⁷¹⁵ See Appendix 13 (Element 2 – GMOs).

⁷¹⁶ Appendix 13 (Element 2 – Certifying body discretions).

⁷¹⁷ Chirkov et al, above n 216, 98.

It is beyond the scope of this study to engage in a cost-benefit analysis to determine whether participation in organic certification balances costs and benefits.⁷¹⁸ Fees for a typical ACO certified livestock or cropping farm are shown in Appendix 13 (Element 2 – ACO participation costs) and, on the face of it, these fees do not appear excessive for businesses of the apparent scale as those operated by the organic farmers interviewed for this study.

A US study⁷¹⁹ suggests the purchase of organic foodstuffs has risen rapidly (from US\$3.6 billion in 1997 to US \$18.9 billion in 2007) though it represented a small percentage of total food sales in the US (3%). Across a suite of fruit and vegetables investigated in the same study, the estimated price premiums for organic compared with conventional produce ranged from around 17 per cent for tomatoes and carrots to 62 per cent for potatoes. The 2014 edition of the *Australian Organic Market Report* quoted a supplier claiming premiums of 35 per cent for organic beef.⁷²⁰

Lockie and Higgins claim ‘there is clear evidence that organic certification does provide a positive market value for environmental services’,⁷²¹ and Wynen suggest that, though profitability in organic farming is not inevitable, ‘in general, the financial results can be positive for organic farmers’, depending on a range of factors including farm history, enterprise, input and output prices, domestic and international policies.⁷²²

⁷¹⁸ Attribute 14: matching costs and benefits.

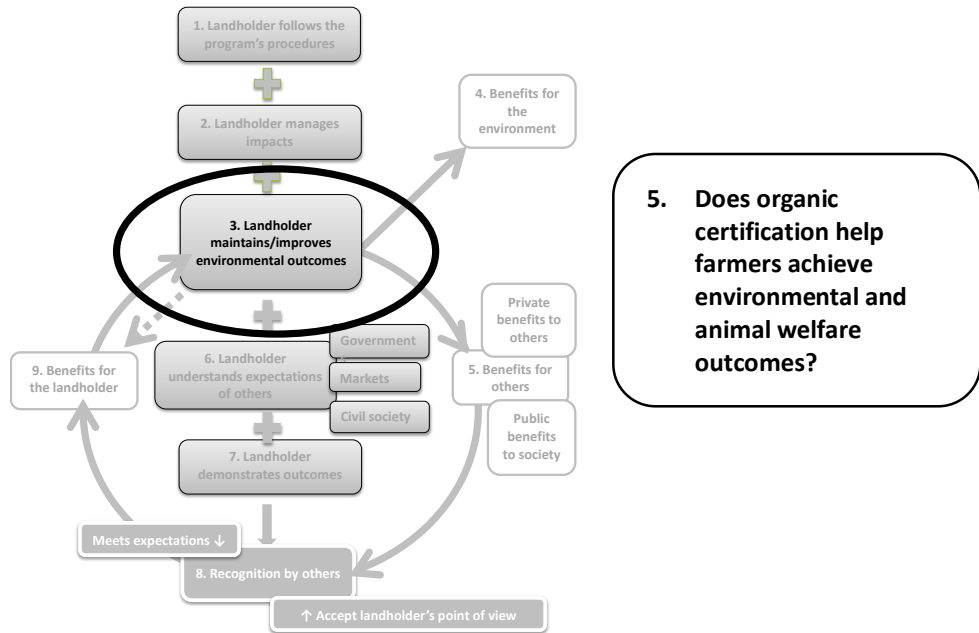
⁷¹⁹ Biing-Hwan Lin, Travis A Smith and Chung L Huang, 'Organic Premiums of US Fresh Produce' (2008) 23(3) *Renewable Agriculture and Food Systems* 208.

⁷²⁰ Mascitelli et al, above n 562, 15.

⁷²¹ Lockie and Higgins, above n 110, 8.

⁷²² Els Wynen, 'Economic Management in Organic Agriculture' in Paul Kristiansen, Acram Taji and John Reganold (eds), *Organic Agriculture - A Global Perspective* (CSIRO, 2006) 231.

6.3.4. Element 3, Research Question 5: Achieving Outcomes



6.3.4.1. Emphases on 'Nature' and 'Natural' Processes

Organic farming is not ‘natural’ in the way that ‘natural environments’, ‘pristine areas’, ‘natural ecosystems’, and ‘primary ecosystems’⁷²³ might be described as ‘natural’. Like all forms of farming, organic agriculture involves a radical manipulation of natural systems through processes such as cultivation, application of inputs, harvesting, or the introduction of non-native species. All organic cropping in Australia relies on land that, at some point, was cleared of native vegetation. However, a reading of the standards suggests that organics tries to attune itself to ecological and biological processes.⁷²⁴ The standards define ‘natural’, ‘synthetic’,⁷²⁵ and GMOs,⁷²⁶ and other references to encouraging the ‘natural’ and discouraging the ‘synthetic’ in the standards are shown in Appendix 13.⁷²⁷

⁷²³ NS, ss .3.9(i), 3.14.9; ACO, s 2; NASAA, s 1.1.

⁷²⁴ Ponisio et al, above n 554.

⁷²⁵ NS, Definitions: ‘*Natural*: existing or formed by nature; not artificial’; ‘*Synthetic*: means substances formulated or manufactured by a chemical process or by a process that chemically alters compounds extracted from naturally occurring plant, animal or mineral sources’. See also ACO, s 2 and 9.2.2; NASAA, s 1.1.

⁷²⁶ Defined as genetically engineered inputs ‘which do not occur in nature or through traditional breeding’ (NS, Definitions); ‘altered in ways or with results that could not be obtained by methods of natural mating and reproduction or natural recombination’: ACO, s 2; NASAA, s 1.1.

⁷²⁷ See Element 3 – Other references to ‘natural’ and ‘synthetic’.

It is wrong to say that organic certification prohibits pesticides, herbicides and fertilizers as inputs, though the standards promote the use of these inputs as *secondary* measures in deference to ‘management’ and cultural practices. As a rough guide, when they are allowed, the standards allow inputs that have precedents in nature (though they may be industrially manufactured) and prohibit inputs that are unprecedented in nature. On this basis, lime, rock phosphate, elemental sulphur, boric acid, diatomaceous earth, pheromones, potassium permanganate, copper sulphate, pyrethrum and other plant extracts are all permitted.⁷²⁸

Using ‘nature’ as a threshold standard is a rough guide only; for instance, the animal health principle prevails over certification and recourse may be made to veterinary drugs and antibiotics where no alternative exists, though, subsequently, the animals must be decertified.⁷²⁹ And there will always be debate about the efficacy of nature as a yardstick, or the degree of naturalness or unnaturalness of any allowed or prohibited practice. For example, transfer of genetic materials from one species to another is known to occur in nature,⁷³⁰ though the products of modern biotechnology are entirely unknown in the natural world. A few non-natural inputs are permitted,⁷³¹ and some natural substances are restricted or prohibited,⁷³² even where there is a long historical tradition of their use in pest management.⁷³³

In the management of weeds, pests and diseases, ‘natural’ means valorizing design factors and physical and biological management techniques over the application of ‘substances’⁷³⁴ or chemical techniques. For example, the standards encourage management by species and varietal selection, biological controls, crop rotations, mechanical controls (e.g. traps and barriers), light and sound, cultivation, mulching

⁷²⁸ NS, Appendix 1-AnnexesB-D.

⁷²⁹ NS, 3.15.6.

⁷³⁰ Mary-Dell Chilton, 'A Vector for Introducing New Genes into Plants' (1983) 248 *Scientific American* 51.

⁷³¹ For example, woven plastic materials for mulch with restrictions: NS, s 3.8.3.

⁷³² For example, Chilean nitrate in ACO and NASAA: ACO, s 4.1.6; NASAA, Annex 1.

⁷³³ For example, arsenic, mercury, nicotine. Some ‘natural’ inputs are restricted because of their toxic tendencies or potential to accumulate, eg rotenone and copper salts: NS, Appendix IV-Annexes A(6)(c), C and D; NASAA, 6.6.7. Rotenone is banned in ACO certification: ACO, s 4.5.4.

⁷³⁴ NS, ss 3.8(i), 3.15(iii).

and mowing, grazing of livestock, natural enemies of pests, and flame or steam weeding.⁷³⁵

6.3.4.2. Soil and Soil-Plant Interactions

Maintaining or increasing the productivity of soils by nurturing biological activity, and valorizing the indirect nutrient-to-soil-to-root pathway over the more direct nutrient-plant pathway is supported in the standards. The *National Standard* states that the key objectives of organic agriculture are:

[A]chieved through management practices that create soils of enhanced biological activity, as indicated by the humus level, crumb structure and feeder root development, such that plants are fed through the soil ecosystem and not, principally, through soluble fertilisers added to the soil.⁷³⁶

So central is the notion of soil to organic farming that, with a few exceptions,⁷³⁷ soil-less forms of production such as hydroponics, are prohibited.⁷³⁸ Some of the principles and recommendations in the standards simply reiterate good soil practices applicable to any farmer, organic or conventional.⁷³⁹ However the difference between certified organic systems and others (conventional and uncertified organic), is that the practice, where relevant, becomes a requirement of certification.

The standards emphasize the importance of soil organic matter and prescribe the use of composts, animal manure or other organic matter, and the accretion of humus and soil carbon levels to enhance soil structure, nutrient and water holding capacities of soil, nutrient cycling, and disease suppression.⁷⁴⁰ For NCO certification, new participants must provide a measure of soil organic matter at the time of application.⁷⁴¹ Practices that might interrupt the soil biological processes, such as the application of herbicides and pesticides, are prohibited.

⁷³⁵ *NS*, s 3.8.1.

⁷³⁶ Section 3.1(iv).

⁷³⁷ For example, honey, aquaculture, and mushrooms: *NS*, s 3.10; *NASAA*, s 7.28; *ACO*, s 7.4

⁷³⁸ *NS*, s 3.7.1; *ACO*, s 7.2.2; *NASAA*, s 3.1.4.

⁷³⁹ See Appendix 13 (Element 3 – General good soil practices).

⁷⁴⁰ *NS*, 3.1(iv), 3.5(ii); *ACO*, s 4.1.1, 4.4.1; *NASAA*, s 3.6.

⁷⁴¹ *NASAA*, s 3.6.9.

Conservation of mass is a basic law of physics and underpins soil nutrient balance. Farmers who continue to grow crops and pastures without accounting for nutrient loss are said to ‘mine’ the soil for nutrients, which connotes an extractive approach in which losses are never recouped.⁷⁴² Anecdotal criticisms of organic agriculture include claims that organic farmers mine the soil because they ignore the nutrient balance by not replacing nutrients through the application of fertilizers, as a conventionally ‘good’ farmer would do. True, organic practice favours management over inputs, does not permit the use of fertilizers that have been chemically treated to increase mineral solubility⁷⁴³ and eschews direct feeding of nutrients to plant roots or leaves⁷⁴⁴ rather than through the mediation of the soil. However, a claim that organic standards *per se* encourage mining of the soil cannot be substantiated, and the issue of nutrient imbalance is addressed in the standards.⁷⁴⁵

Under the standards, fertility is managed primarily through biological and non-mineral forms such as composts, green manures,⁷⁴⁶ and legume crops,⁷⁴⁷ and secondarily through mineral forms to augment, rather than replace, the non-mineral forms.⁷⁴⁸ Biological activity is encouraged to better hold, extract and release existing nutrients that would otherwise be locked-up or lost through leakage. The mindset and technical skills that organic farmers need to attend to the nutrient balance problem are different from those used by conventional farmers. For instance, whereas conventional farmers need skills and understanding in relation to the NPKS ratio on a bag of fertilizer,⁷⁴⁹ organic farmers need skills and understanding in relation to the balance of microbial taxonomic kingdoms (e.g. fungi and bacteria) in their composts,⁷⁵⁰ or in using plants

⁷⁴² Pay Drechsel and Lucy A Gyiele, 'The Economic Assessment of Soil Nutrient Depletion - Analytical Issues for Framework Development' in *Issues in Sustainable Land Management No 7* (International Board for Soil Research and Management, 1999) .

⁷⁴³ *NS*, Appendix I-Annex B.

⁷⁴⁴ *ACO*, s 7.2.8.

⁷⁴⁵ For example, see *NASAA*, s 4.4.

⁷⁴⁶ Crops, often leguminous, grown, not harvested, but incorporated into the soil for soil health and fertility.

⁷⁴⁷ *NS*, s 3.5.1(a), *ACO*, s 4.1.3 (a), *NASAA*, s 4.1.3.

⁷⁴⁸ *NS*, s 3.1(vi); *ACO*, s 4.1.5; *NASAA*, ss 4.4, 4.11.5.

⁷⁴⁹ See Fertiliser Australia and Australian Fertiliser Services Association, 'Code of Practice for Fertilizer Description and Labelling ' (2011) cl 2.4.

⁷⁵⁰ *ACO*, s 4.3.10.3.

that are conventionally regarded as weeds and pests as ‘useful indicators of imbalances in soil’.⁷⁵¹

6.3.4.3. Biodiversity

Another anecdotal criticism of organics is that, while obsessed with avoiding chemical use and GMOs, it ignores other key environmental issues such as biodiversity conservation. From a reading of the standards, this is not the case. Organic farms must dedicate 5 per cent of land to conservation purposes⁷⁵² and biodiversity must be included in the OMP.⁷⁵³ There are prohibitions and restrictions on the clearance of native vegetation and drainage of natural wetlands,⁷⁵⁴ as well as restrictions to avoid disturbance of biodiversity from plant collection or grazing enterprises.⁷⁵⁵ Special attention is given to ‘natural areas of significance or production systems inherently based upon ecological aspects’, ‘wild harvest’, or ‘ecologically sensitive or representative areas’.⁷⁵⁶ The nurturing of soil biological activity has been found to contribute to an important but cryptic aspect of biodiversity: the diversity of soil biota.⁷⁵⁷

6.4.4.4. Water

Water is a headline resource in the standards,⁷⁵⁸ which contemplate that management and conservation of water resources and ecology is linked to the management of other farm resources, such as soils, vegetation, biodiversity and paddock layout.⁷⁵⁹ With some exceptions,⁷⁶⁰ the water-related standards tend to be general or aspirational in nature. Some sections rely on government regulation and policy.⁷⁶¹

⁷⁵¹ *NS*, s 3.23(xi).

⁷⁵² *NS*, 4.4.2, *ACO*, s 4.6.2, *NASAA*, s 3.5.1.

⁷⁵³ *NS*, s 3.4.1, *ACO*, ss 4.6.1, 5.7.2; *NASAA*, s 3.5.

⁷⁵⁴ *ACO*, s 4.6.9; *NASAA*, ss 3.5.4, 3.5.10.

⁷⁵⁵ *NS*, 3.9.1(d), 3.14.9(c); *NASAA*, s 6.1.

⁷⁵⁶ *ACO*, ss 4.6.3, 7.5.1; *NASAA*, s 3.5.9. Other biodiversity references are listed in Appendix 13 (Element 3 – Biodiversity).

⁷⁵⁷ Mäder et al, above n 554, 1696.

⁷⁵⁸ *NS*, s 3.6; *ACO*, s 4.4; *NASAA*, s 3.9.

⁷⁵⁹ *ACO*, ss 4.4.1, 5.7.15; *NASAA*, s 7.5.2.

⁷⁶⁰ For example, using reclaimed water: *ACO*, s 4.4.8; capping artesian bores: *NASAA*, s 7.5.2.

⁷⁶¹ See, eg, *NASAA*, s 3.5.

6.3.4.5. General Environmental Efficacy

The standards encourage farmers to operate closed-cycle production systems⁷⁶² by recycling nutrients, using on-farm composts and green manures, self-sufficiency of livestock feeds,⁷⁶³ and acquiring inputs from other organic producers in the region.⁷⁶⁴ However, the desire for closed-loop systems is tempered by health and environmental concerns, as in the restrictions on the use of sewerage sludge, and animal and human excrement.⁷⁶⁵ The standards encourage general environmental and social justice awareness in a range of governance levels, from the decisions made on-farm and in the supply chain (e.g. packaging and cleaning)⁷⁶⁶ to decisions made at the organizational level by OISCC or the certifying bodies.⁷⁶⁷

None of the organic standards specifically mention climate change mitigation or adaptation, though they do contain aspirational references (rather than enforceable rules) relating to the use of renewable resources, minimization of non-renewable resources, and conservation of energy on farm and in post-farm stages of production.⁷⁶⁸ Carbon sequestration through the regeneration of soil carbon stocks and management of soil organic matter is theoretically possible,⁷⁶⁹ especially in soils in which soil carbon levels have historically run-down,⁷⁷⁰ and building up soil carbon levels and managing soil organic matter can have many positive effects for soils and

⁷⁶² NS, Appendix 1-Annex A(1).

⁷⁶³ ACO, s 5.1.28; NASAA s 6.5.

⁷⁶⁴ ACO, s 3.5.17.

⁷⁶⁵ NS, s 3.6.4; ACO, ss 4.29, 4.2.10; 4.4.8; NASAA, ss 3.9.7, 4.6.1, 4.13.

⁷⁶⁶ NS, s 4.6, Appendix II-Annex A(1).

⁷⁶⁷ For example, inclusion or exclusion of material inputs: NS, Appendix IV; ACO, Annexes – Explanation (p 94); NASAA, Annex 9.

⁷⁶⁸ NS, Definition of 'organic', ss 3.1(ii) and (iii); ACO, ss 4.6.6, 6.1.33, 6.3.4.6, 7.7.5, 8.3.6; NASAA, ss 1.4(7), 9.9, Annex 9.

⁷⁶⁹ A role for organic farming to mitigate climate change through soil carbon sequestration is proposed in Rodale Institute, 'Regenerative Organic Agriculture and Climate Change - A Down-to-Earth Solution to Global Warming' (2014).

⁷⁷⁰ K Y Chan et al, 'Scoping Paper: Soil Organic Carbon Sequestration Potential for Agriculture in NSW' (Department of Primary Industries (NSW), 2008).

agricultural production.⁷⁷¹ However, research to date suggests the overall effect in mitigating climate change is not clear-cut.⁷⁷²

6.3.4.6. Animal Welfare

One of the fundamental objectives of the *National Standard* is ‘livestock husbandry practices that reflect the behavioural needs and ethical treatment and welfare management of livestock’.⁷⁷³ Organic standards attempt to balance the competing aspects of animal welfare. For instance, they emphasize access to pastures, freedom of movement, and freedom of choice in foraging habits,⁷⁷⁴ which must be balanced against the risks of attack from predators.⁷⁷⁵ Organic practice favours proactive management, and ‘natural’ medicaments, but this must be balanced against the health of the animal and its freedom from pain and suffering.⁷⁷⁶ Biodynamic practice favours minimal bodily modification,⁷⁷⁷ which needs to be balanced against the safety of other animals in the herd and of farmers and staff.

The standards contain many principles and requirements directly bearing on animal welfare, including those mentioned previously.⁷⁷⁸ The prohibition on the prophylactic use of veterinary drugs and antibiotics in the absence of illness⁷⁷⁹ is consistent with good practices to avoid the development of disease resistance to treatment. In this way, organic farmers are contributing to the common good by prolonging the efficacy of treatments essential to conventional animal farmers.

⁷⁷¹ Yin Chan, 'Increasing soil organic carbon of agricultural land' (Department of Primary Industries (NSW), 2008); Jennifer Carson, 'How Much Carbon Can Soil Store?' (Soil Quality Pty Ltd, undated).

⁷⁷² Shu Kee Lam et al, 'The Potential for Carbon Sequestration in Australian Agricultural Soils is Technically and Economically Limited' (2013) 3 *Science Reports* 2179; Rolf Sommer and Deborah Bossio, 'Dynamics and Climate Change Mitigation Potential of Soil Organic Carbon Sequestration' (2014) 144 *Journal of Environmental Management* 83.

⁷⁷³ *NS*, s 3.1(vii).

⁷⁷⁴ *NS*, s 3.11.3.

⁷⁷⁵ *ACO*, s 5.1.34.

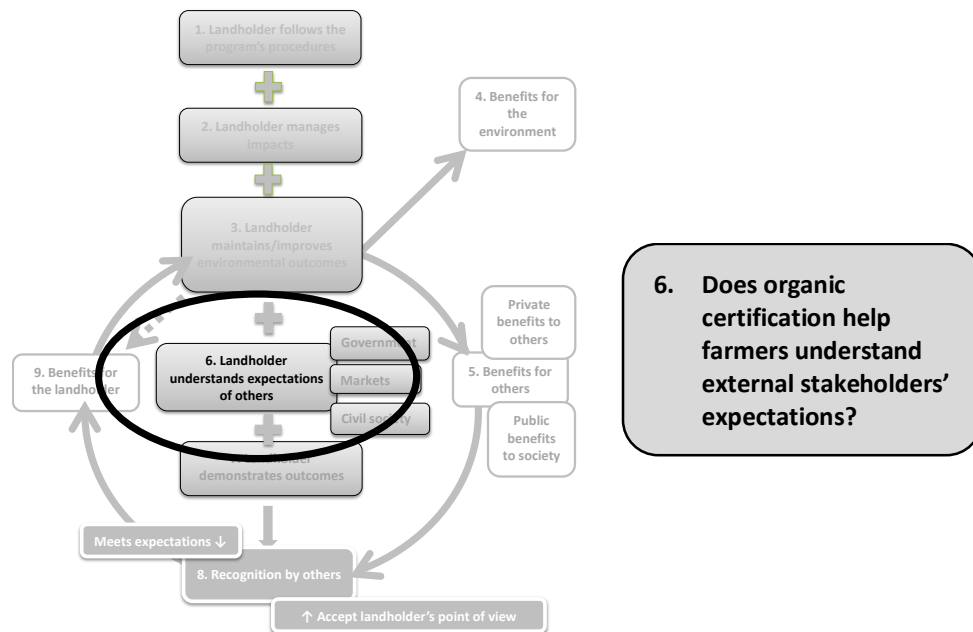
⁷⁷⁶ *NS* ss 3.15.3, 3.16.1.

⁷⁷⁷ For example, biodynamic preference to retain horns on horned cattle: s 3.23(xiii).

⁷⁷⁸ See *NS*, ss 3.11(iii), 3.14.2, 3.17.5; *ACO*, ss 5.1.34, 5, 5.1.15; *NASAA*, ss 6.3.3, 6.1.1. See also Appendix 13 (Element 3 – Animal welfare).

⁷⁷⁹ *NS*, s 3.15.5.

6.3.5. Element 6, Research Question 6: Understanding Stakeholders' Expectations



Organic certification attends to many of the 11 headline items identified by interviewed stakeholders in Chapter 4. The most striking feature of both the *ACO* and *NASAA Standards* in relation to external stakeholder expectations is the paramountcy of stakeholder objections. Both contain a catch-all provision allowing the certifying body to prohibit an input on the basis that it offends consumers' perceptions of organic produce.⁷⁸⁰

6.3.5.1. Risk Assessment

Prospective participants in organic certification are required to identify and address critical risks⁷⁸¹ across the range of issues that organic certification is concerned, which includes environmental issues, animal welfare, human health and social issues. The risk assessment process begins in the application stage with the questionnaires that new participants must complete and continues with the development of the OMP.⁷⁸² The application process for both includes a review of the risks of contamination by agrichemicals, heavy metals, and GMOs from previous operations on the farm.⁷⁸³

⁷⁸⁰ See Appendix 13 – Element 6 – Consumer perception paramount.

⁷⁸¹ Ideal feature 1: risk identification.

⁷⁸² See for example, *NS*, s 4.3.5; *ACO*, s 4.6.7; *NASAA*, s 2.4, 2.5, 3.5.3.

⁷⁸³ *ACO*, s 3.1.7; *NASAA*, s 2.4.1.

6.3.5.2. Transparency

Organic standards are transparent⁷⁸⁴ insofar as they were developed in a consultative fashion, are publically available, and link to international substantive and procedural norms.⁷⁸⁵ The *National Standard* contains a process and criteria for altering the list of allowable inputs.⁷⁸⁶

The standards are also transparent in that they show a serious intent by backing-up compliance with sanctions. These reflect Ayres and Braithwaite's enforcement pyramid,⁷⁸⁷ with sanctions progressively becoming harsher as the severity of breach increases. Sanctions include additional inspections, issuing of corrective directions, suspension of certification and de-certification.⁷⁸⁸ This is in addition to the relatively exacting gate-keeping stages participants must pass in the application stage.⁷⁸⁹

6.3.5.3. Links to Other Governance Initiatives

To the extent that mentioning extrinsic governance instruments, institutions and measures in the standards is a way of introducing farmers to the expectations of external stakeholders, organic certification standards make a contribution,⁷⁹⁰ especially in relation to the environmental and human health implications of chemical residues in food; animal welfare; and international developments in organics. Weaker references to other governance initiatives include farm- and landscape-scale environmental management, and water resources management.

In some cases, specific institutions or instruments are embedded into the standards. These include references to Australian law, Australian Standards, Food Standards Australia New Zealand (FSANZ), World Health Organization, UN conventions, Codes of Animal Welfare Practice, IFOAM, laboratory standards, and technical management processes.⁷⁹¹

⁷⁸⁴ Ideal feature 2: transparency.

⁷⁸⁵ For example, IFOAM and ISO 65: see Leu and Clay, above n 555.

⁷⁸⁶ Appendix IV-Annex A.

⁷⁸⁷ Ayres and Braithwaite, above n 78, 35.

⁷⁸⁸ *NS*, s 6.3(i); *ACO*, s 3.3; *NASAA*, s 2.12. For others, see Appendix 13 (Element 6 – Sanctions).

⁷⁸⁹ *ACO*, s 3.1.21.

⁷⁹⁰ Ideal feature 3: linkages.

⁷⁹¹ See Appendix 13 (Element 6 – Embedded governance).

Other references are general, referring to laws, authorities, and permits in non-specific terms, or casual references to specific instruments.⁷⁹² In some cases, the references simply remind growers that they need to obey particular laws.⁷⁹³ In others, the references are recommendatory or explanatory rather than mandatory.⁷⁹⁴ In some instances, the standards make mention of additional governance measures not strictly required to comply with Australian export regulations.⁷⁹⁵

Organic certification predates regional NRM in Australia, and the *National* and *ACO Standards* are silent on engagement with regional NRM bodies, perhaps partly in response to the general indifference governments in Australia have shown to the sector, as a result of which, the organic movement may not see any advantage in being co-opted into regional NRM policy. However, the *NASAA Standard* mentions compliance with catchment management authority measures for impounding water for livestock.⁷⁹⁶ It recommends (rather than mandates) engagement with regional NRM management plans and initiatives in relation to landscape and environmental management,⁷⁹⁷ and with catchment targets and community strategies in relation to water management.⁷⁹⁸

6.3.5.4. Diverse Views

The standards are the product of consultative processes within OISCC (and predecessors), and AOL and NASAA. The involvement of AOL and NASAA in IFOAM means that the standards are linked internationally with similar consultative and participatory processes. Consequently, they attempt to accommodate a wide range of ethical and production values.⁷⁹⁹ The expectations of stakeholders are implicit in many of the issues discussed previously.

⁷⁹² See Appendix 13 (Element 6 – General references to governance initiatives).

⁷⁹³ See Appendix 13 (Element 6 – General compliance with law).

⁷⁹⁴ See Appendix 13 (Element 6 – General references to governance initiatives).

⁷⁹⁵ See Appendix 13 (Element 6 – Additional governance measures mentioned). For background on this, see Wynen (2007), above n 534, 6.

⁷⁹⁶ *NASAA*, s 7.5.1.

⁷⁹⁷ *NASAA*, s 3.5.

⁷⁹⁸ *NASAA*, s 3.9.

⁷⁹⁹ Ideal feature 4: diversity.

Human health is a fundamental objective of organic production,⁸⁰⁰ and is given a high priority across a range of production issues outlined in the standards.⁸⁰¹ Positive social outcomes are captured in the principle of fairness, one of IFOAM's headline objectives,⁸⁰² but the *National Standard* is mostly silent on this, perhaps assuming that Australia has an adequate system of workers' unions, labour laws, industrial awards, and arbitration institutions, and that Australian farming is not a risky sector for human rights abuses compared with other parts of the world.⁸⁰³ However, *ACO* and *NASAA Standards* make references to social outcomes, which may reflect their involvement with IFOAM and the fact that these standards can be used outside Australia.⁸⁰⁴ Both standards outline expectations for organic farmers in relation to human rights and discrimination, slavery and forced labour, forming associations and collective bargaining, child workers, and traditional owners.⁸⁰⁵

6.3.5.5. Beyond Minimum Compliance and Continuous Improvement

Insofar as the prescriptions and proscriptions discussed earlier advance environmental outcomes, then they mostly do so above and beyond the requirements of the law.⁸⁰⁶ Though the *National* and *NASAA Standards* do not refer to continuous improvement explicitly,⁸⁰⁷ the system a farmer establishes as a part of certification bears the hallmarks of the Plan-Do-Check-Review cycle. Organic certification requires a farmer to plan for management challenges, undertake risk assessments, and implement monitoring. The repeated cycles of OMP updates,⁸⁰⁸ audits and inspections act as review mechanisms.

⁸⁰⁰ *NS*, 3.1(iii); *ACO*, s 4 (Organic Production Principles); *NASAA*, s 1.4(1) and (2).

⁸⁰¹ Appendix 13 (Element 6 – Human health provisions).

⁸⁰² IFOAM, above n 529.

⁸⁰³ See 2014 Human Development Index, and 2014 Human Rights Risk Index: <<http://hdr.undp.org/en/content/table-1-human-development-index-and-its-components>> and <<http://reliefweb.int/map/world/world-human-rights-risk-index-2014>>.

⁸⁰⁴ *ACO* provisions relating to international projects and fair trade: ss 7.8, 7.9; *NASAA* website refers to certified operations in Asia, South America and Oceania: <<http://www.nasaa.com.au/welcome1.html>>.

⁸⁰⁵ *ACO*, ss 4.6.11–4.6.15, 5.7.4; *NASAA*, ss 8.1.2–8.1.6, 7.4.2.

⁸⁰⁶ Ideal feature 5: beyond compliance.

⁸⁰⁷ Ideal feature 6: continuous improvement.

⁸⁰⁸ *NASAA*, s 2.4.3.

The *ACO Standard* has more explicit references to continuous improvement or similar concepts. ACO requires that the OMP ‘highlight and assist in monitoring and verifying how, through time, the operator is *continually improving* the environmental and productivity outcomes of the operation’.⁸⁰⁹ Landholders are expected to commit adequate resources to ensure ‘*progressive improvement* to the production system and the farm ecosystem including environmental impacts’,⁸¹⁰ as well as to identify:

[C]ritical environmental aspects that are relevant to their production system and outline management plans in the OMP to address these aspects, while showing through time how there is *continual improvement* to such aspects via monitoring or other means of verification ... A *continued improvement* in management practices and environmental outcomes is required.⁸¹¹

Organic certification has a long track record in demonstration of outcomes, independent verification, and integrity of auditing⁸¹² and these will be discussed below under Element 7 (Demonstrating Outcomes).

6.3.5.6. Holism and Measurable Outcomes

The expectation that standards should have a holistic outlook⁸¹³ is evident in the wide purview of the standards (covering ecological and social dimensions of farming, human health, biodiversity, and animal welfare), and in the principles that underpin organic philosophies.⁸¹⁴

The combination of auditing, certification, risk assessment, OMPs, requirement for biodiversity conservation, monitoring and documentation increases the likelihood that participants will demonstrate measurable public interest outcomes.⁸¹⁵ However, it is not possible from a reading of the standards to predict the specificity of measurement or achievement, nor whether particular stakeholders will actually be satisfied that their desired outcomes have been measured or met. Indeed, the whole arena of exactly

⁸⁰⁹ *ACO*, s 3.1.7 (emphasis added).

⁸¹⁰ *ACO*, s 3.2.1 (emphasis added).

⁸¹¹ *ACO*, s 4.6.7 (emphasis added).

⁸¹² Ideal features 7, 8 and 9: demonstration, verification, integrity.

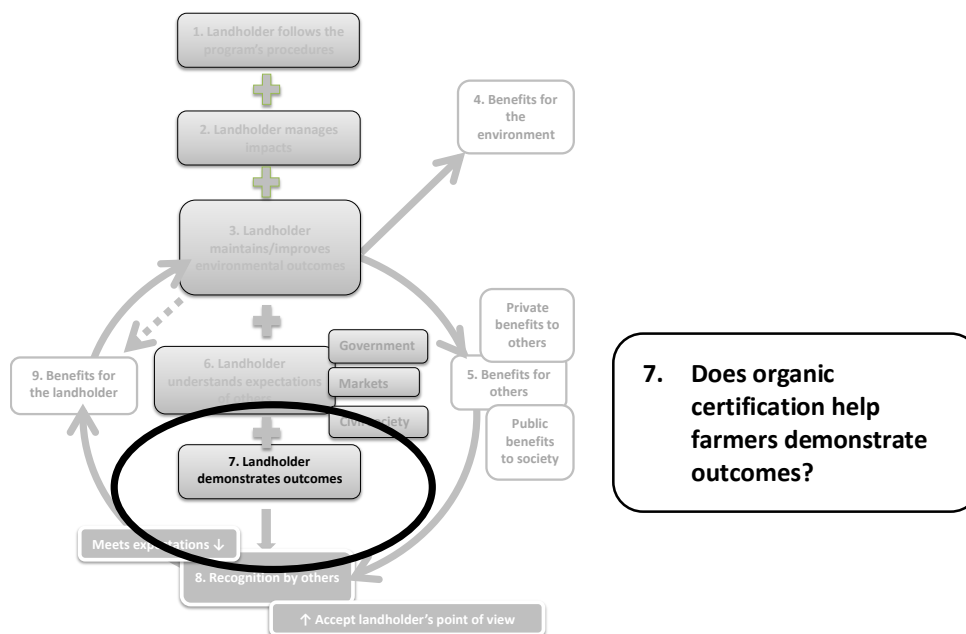
⁸¹³ Ideal feature 10: holism.

⁸¹⁴ See, eg, *NASAA*, s 3.5.

⁸¹⁵ Ideal feature 11: measurable outcomes.

which environmental outcomes should be achieved and how they should be measured is a live debate within international organic circles.⁸¹⁶

6.3.6. Element 7, Research Question 7: Demonstration



Organic certification is one of the oldest established demonstration frameworks,⁸¹⁷ designed to ‘scrutinise the products and processes that are used on the property’,⁸¹⁸ and allow ‘a reconciliation of output of organic products against inputs or ingredients used’.⁸¹⁹ The organic demonstration framework has three main components: testing and monitoring; record-keeping for traceability; and auditing and inspection.

New applicants for organic certification are subject to sampling and testing of soil or produce, or both.⁸²⁰ During the certification phase, ongoing testing under the *National Standard* is limited to random or follow-up testing based on risk assessment.⁸²¹ The *ACO Standard* refers to the farmer undertaking ‘ongoing soil or tissue tests, or other

⁸¹⁶ Niggli, above n 532.

⁸¹⁷ Leu and Clay, above n 555.

⁸¹⁸ NASAA, s 2.6

⁸¹⁹ ACO, s 3.4.1(3).

⁸²⁰ NS, 6.2.6, Guidance Document Residue Testing 1.1 (p 79). NASAA requires testing of soil organic matter: s 3.6.9.

⁸²¹ NS, Guidance Document Residue Testing 1.1 (p 79). ACO requires ongoing soil or tissue tests, or other ‘effective means of assessing fertility ... to ascertain sustainability and to determine future needs for fertility management’: ACO, s 4.1.8.

effective means of assessing fertility ... to ascertain sustainability and to determine future needs for fertility management’;⁸²² extra testing for contamination imported onto the farm by brought-in materials and equipment;⁸²³ and extra testing where a special risk is noted that warrants additional monitoring.⁸²⁴

Explicit references to monitoring in the *National Standard* include monitoring of irrigation water-use efficiency, of water from sources with contamination risks, and of native vegetation in rangeland grazing enterprises.⁸²⁵ To maintain Commonwealth accreditation (as well as some of their international accreditations), NCO and ACO must undertake random testing of at least 5 per cent of their operators annually for contamination by synthetically manufactured pesticides and herbicides, heavy metals and GMOs.⁸²⁶ The organic sector has long emphasized traceability mechanisms as a hallmark of demonstration, both in the auditing process and to double-check compliance in the event of a contamination claim.⁸²⁷

Like CLM, organic certification goes beyond awareness raising, education, self-assessment and self-declaration of good intentions. Independent third party auditing as a demonstration standard has a long history in organics.⁸²⁸ For farmers to maintain certification, they must submit to annual inspection, as well as random and unannounced inspections.⁸²⁹ They must provide auditors with complete access to the farm,⁸³⁰ equipment and records.⁸³¹

⁸²² ACO, s 4.1.8.

⁸²³ ACO, s 4.2.1.

⁸²⁴ For example, where there are noted contamination risks from a neighbour’s activities: ACO, s 4.7.19.

⁸²⁵ NS, ss 3.6.2, 3.6.3, 3.14.9 (d), 3.21.2. ACO requires for rangeland operators ‘environmental indicator monitoring, optimally by third parties’, including of soil types, soil cover, pasture types, and total grazing pressure: ACO, s 5.7.3.

⁸²⁶ NS, p 80 (Guidance Document Residue Testing 1.1, Steps 1 and 4).

⁸²⁷ ACO, s 3.4.1(3); NASAA, s 2.6. See overview of traceability mechanisms in Appendix 13 (Element 7).

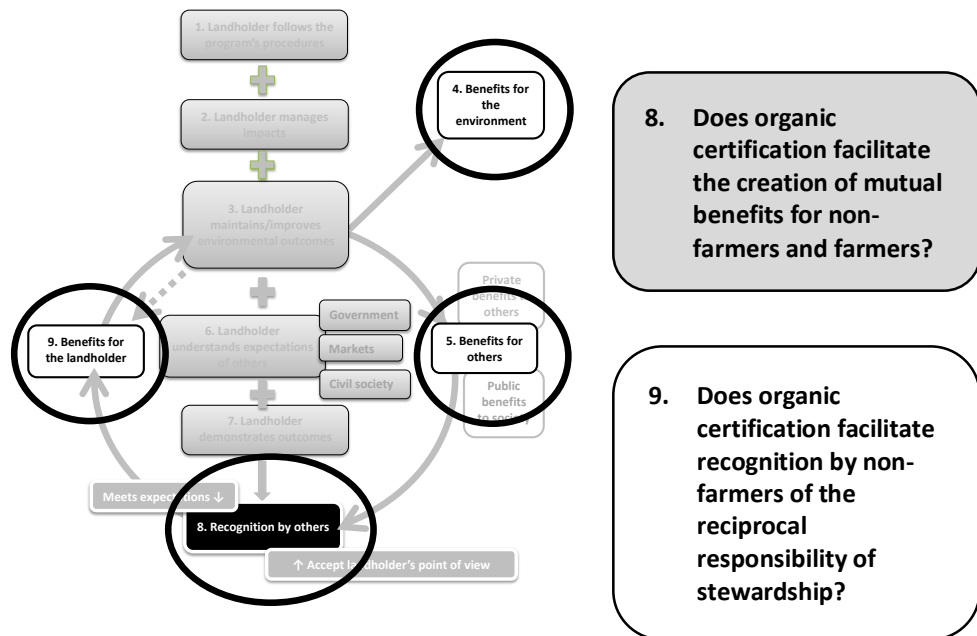
⁸²⁸ Lutikholt, above n 528.

⁸²⁹ NS, s 6.1.5.

⁸³⁰ NS, s 6.1.2.

⁸³¹ NS, s 6.1.3.

6.3.7. Elements 4, 5 and 9, Research Question 8: Mutual Benefits, and Element 8, Research Question 9: Recognition



The organic market is relatively mature so far as sustainability markets go. The end point of certification by ACO and NCO, and the ability of producers to use their certification labels and logos establish a platform for stakeholders to recognize certified organic farmers' achievements and mobilize a flow of benefits to them. The previous discussion on costs and benefits and potential market premiums shows that a market for sustainability does exist to some extent and is operating to the benefit of farmers.

6.4. Farmers' Perceptions of Organic Certification

This part of the chapter investigates farmers' perceptions of organic certification, sourced from interviews and surveys, and follows the protocols of the CLM case study: identifying details have been removed,⁸³² interview data are reported in narrative style, survey results are reported as simple majorities of ACO and FOGG respondents combined (i.e. at least 3 out of the 5 respondents), and no other statistical analysis was performed.

All FOGG and ACO members surveyed were principals of their family businesses and resident on their properties. FOGG properties were located in south-west NSW in the

⁸³² Pseudonyms used for ACO: Dominic and Carl; for FOGG: Dennis, Pat, and Oliver.

floodplain of the lower Murrumbidgee River (the 'Lowbidgee'). The two ACO properties were located respectively in the Lockyer Valley of south-east Queensland, and Swan Hill in north-west Victoria (see Figure 6.4).

The main enterprise of the two ACO farmers was irrigated horticulture (fruit and vegetables), and all FOGG growers had broadacre irrigated cereal cropping, as well as oil seeds and legumes. One ACO and two FOGG growers had grazing livestock enterprises (sheep and/or cattle).

FOGG landholdings were in the thousands to tens of thousands of hectares, with the area of cereal crops in the thousands of hectares. Livestock numbers were in the hundreds of head of cattle and thousands of sheep. For ACO participants, land area was in the tens to hundreds of hectares, and for the ACO landholder with cattle, about 100 head.

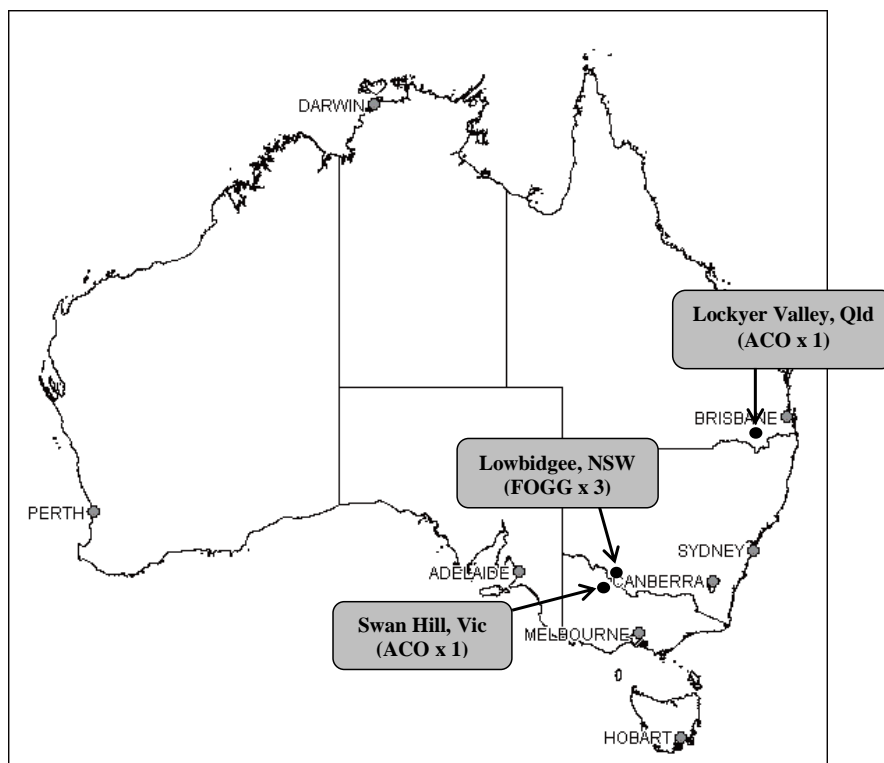


Figure 6.4: Location of certified organic interviewees

(Base map: ©The University of Melbourne 2001)⁸³³

⁸³³ University of Melbourne, above n 417.

The estimated average age⁸³⁴ was about 60 years of age and the highest educational level was high school, except for one ACO grower who had attained TAFE/trade/diploma level.

6.4.1. FOGG Farmers and Farming Systems

The Lowbidgee Floodplain is listed as a nationally important wetland by the Commonwealth Government on the Directory of Important Wetlands in Australia, which notes: ‘following flooding, widespread breeding of many species of waterbirds occurs’ and ‘this area would provide drought refuge when wetlands in other parts of the state are dry’. The Lowbidgee is home to the nationally vulnerable Mossgiel Daisy (*Brachycome papillosa*); the Southern Bell Frog (*Litoria raniformis*) endangered at a state level; species of waterbirds considered to be vulnerable at a state level; nationally important breeding colonies of ibis, spoonbill and egrets, and several species listed under the Japan Australia Migratory Bird Agreement (JAMBA) and China Australia Migratory Bird Agreement (CAMBA).⁸³⁵ Thus, FOGG is interesting in terms of the role of a VSP in achieving conservation objectives in a sensitive and important wetland environment.

The FOGG landholders operated a unique irrigation system, unlike most other irrigation systems in Australia. Given its uniqueness, it is described in detail below. FOGG member Dennis introduces the group and its location:

It’s the Lowbidgee floodplain, halfway between Hay and Ballarat ... In 1990 we become certified with organics with NASAA, myself and about six or seven other farmers, and in that time three or four of them have dropped off, there’s four of us left. We’ve been marketing our grain under our little group called FOGG, Floodplain Organic Grains Group.

⁸³⁴ Not all ages were provided so the mean age is an estimate based on the researcher’s observation in the interviews.

⁸³⁵ Department of Environment (Cth), *Directory of Important Wetlands in Australia* <<http://www.environment.gov.au/topics/water/water-our-environment/wetlands/australian-wetlands-database/directory-important>>. Search for Wetland name: Lowbidgee Floodplain; Wetland refcode: NSW021.

The story of FOGG starts with the history of development of the Murrumbidgee River, and FOGG grower Oliver describes the downstream effect of over a hundred years of upstream dam-building and irrigation development:

[T]his started in the 1890s ... when the local growers and landholders ... got together and formed the Lower Murrumbidgee Defence League. They agitated against upstream development for that very reason that in those days obviously it was grazing that they relied on and in those days everyone had high country, bush country that used to run their stock on in times of flood and then on the recession of the flood they'd run their stock in on the flood country and take benefit from the natural grass that grew after the flood.

The result of upstream development was a change to the flooding regime in the lower reaches:

When they started to regulate the river upstream of us, it took those floods away.

The agitation of the grazing industry eventually saw the construction of infrastructure to mimic the natural flooding regime:

In 1904 Sir John Monash came through and surveyed all this area down here and he recommended to government that they put in a series of weirs to compensate these areas for the loss of flooding due to upstream development ... That became operational in 1940 and ... it actually blocks the river off, raises the level to an artificial flood height and then floods out across this country.

Over time, the traditional grazing enterprises changed to cropping:

[F]or the next probably 40 years that water was used for grazing purposes only and then in the late 70s and early 1980s, which ... coincided with the decline of wool and beef ..., people started to realise you could actually grow crops on this country.

The FOGG system pre-dated the water-allocation process enshrined in legislation for the large government-initiated irrigation schemes in NSW:

We had no allocation and no licence and we had a history of use that went back further than any other irrigation area around here, but no security.

The conflict between upstream and downstream was an ongoing concern. NSW Government water policy prioritized intensive agricultural irrigation schemes, with the interests of the environment or downstream-users dependent on flood regimes of secondary concern:

It was all about generating the ... biggest return possible for the state and that was the charter of the Department of Water Resources ... If someone else could use our water better, that's where it would go, so we had to fight to hang onto it.

FOGG growers' future commercial prospects were being threatened by upstream irrigation developments, which encouraged them to assert their interests aggressively:

I liken us to the fighting Irish or the Palestinians on the West Bank, you grow up fighting so that's all you know, so you know you've got to fight for your water or some bastard's going to take it off you.

FOGG growers defend their system as being an extension of the historical dependence of landholders in the Lowbidgee on the natural flooding regime. But the unconventional nature of their system defied categorization by water bureaucrats:

[T]he Murrumbidgee water sharing plan was completed in 2003 or 2004 and they left us out because it was too hard. They just didn't know how to do it.

However, eventually being part of the mainstream system of water licensing brought a new set of challenges:

[N]ow you've got to pay more for your water and it's all part of that national water initiative: ... all water has got to be licenced and measurable and you've got to pay for it. Once we got a licence, an allocation, we then had a responsibility to pay on a volumetric basis rather than ... on an area basis.

The water policy and regulation historically developed for mainstream irrigation schemes used relatively simple water accounting procedures that were not flexible or imaginative enough to contemplate the FOGG system, with its collective resource characteristics:

We know what we divert from the river, but before it gets to me it runs through about eight different properties and who's used what and how much of it have they retained and how much do they leave? We haven't got the level of

sophistication in our delivery system to be able to measure it individually and then you run it onto your place and do a job with it agriculturally and then you run it back into a wetland and then it comes out of the wetland and then it comes out of that wetland back onto another bloke's place further down. It would've been a nightmare trying to work out who was using what.

Oliver explains their almost accidental entry into organic certification, which suited their system, as well as the collective nature of their resource use:

[I]n 1990-odd we were basically all farming organically ... It was quite a natural progression to go to the organic production because that's what we were doing anyway ... We were approached by one of the larger organic processors in Australia to become certified, which we did.

Water from the natural flooding cycle of the Murrumbidgee was diverted onto paddocks before eventually flowing into the floodplain wetlands. A paddock would be flooded in one year and left fallow, and then planted to a cereal crop – usually wheat or barley – in the second year, as explained by Dennis:

We flood the country the year before, and we leave it under water for a couple of months. The water runs in the winter and the spring the year before. And then we pond it up in these big bays, drain the water off, work the country, then we wait for rain in May/June, sow into the moisture, then hope to get a rain or two to finish the crop off. But you've got that stored sub-soil moisture.

Because of the extended period needed to grow a crop, another FOGG member, Pat, explained that, in any one year, growers needed half their land under crop and half fallow in order to produce a crop every year. The system was opportunistic and dependent on the reliability of natural flooding.

FOGG landholders developed a water governance system that resembles common pool resource management:⁸³⁶

[I]t was pretty obvious that if we didn't come up with some sort of hierarchy system of flooding that people would end up going broke. The people up the top-end of the flood plain would prosper and the blokes down the bottom would starve

⁸³⁶ Ostrom, above n 106.

because there was the ability to trap all this water and not let it through. So as a unit we got together ... and we developed a system of ... environmental flow rules.

Oliver explains the three tiers of water allocations:

Tier 1 was stock and domestic and environmental assets and they had to be watered before any water was extracted for agriculture, bearing in mind all those environmental assets can all be grazed as well as they traditionally always have been, but if you wanted to water land for farming purposes to grow crops that was another tier level, that was Tier 2.

Tier 2 was the next level that was traditionally flooded ... we used the 1983 flood as a benchmark because we thought that was an average flood. Anything that got flooded in that year we declared as Tier 2 and anything that was developed outside that was Tier 3, so it was of a lower priority. You had to water all of Tier 1, then water Tier 2 before you started Tier 3 and that system exists today.

The governance system was formulated by landholders and later ratified by government:

It was something that we grew up co-operatively with all the growers, with all the eleven landholders and it worked very well and it was something that was developed internally and policed internally just basically with peer pressure, but we did have Department of Water Resources in the early days ... agree to enforce our tier system if that was required and if the carrot system didn't work, they'd use a stick system. Over the years I think once they've pulled the stick out when someone was doing the wrong thing and taking water when they shouldn't. It's worked very well.

The co-operative ethos extended to other dimensions of the cereal business, including on-farm operations and marketing.⁸³⁷ The arrangement was built on trust, and the system bound the landholders together in a common pact, which imposed an internal discipline on the group.⁸³⁸ FOGG growers saw the co-operative model as essential to their commercial success: it provided credibility, reliability, security for group

⁸³⁷ Oliver.

⁸³⁸ Oliver.

members and customers, and leverage in dealings with buyers and processors.⁸³⁹ However, the vagaries of the natural flooding regime eventually diminished their reliability in the eyes of customers:

[T]hen we hit that period 2000 onward where that went out the gate, we just didn't have any flood water, so we lost that string to our bow. All of a sudden we weren't the reliable producers that everyone thought we were.⁸⁴⁰

In recent times, a suite of concerns converged: the difficulties of continuing with an organic production system, their age, doubts about how the land would be managed by new owners, and the change to a volumetric fee structure for water, which, according to Oliver, has made their organic cereal production system less viable. Thus, by the time of the interviews, FOGG growers had decided to stop farming and negotiate the sale of their water entitlement and land to the NSW Government.

6.4.2. ACO farmers and farming systems

The choice of fruit and vegetable growers operating under the *ACO Standard*⁸⁴¹ was deliberate for two reasons. Firstly, the other two cases involved forms of agriculture that have a relatively low dependence on chemical inputs for the management of weeds and pests. This is partly due to the semi-arid nature of the environment in which the CLM and FOGG farmers operate, and to the idiosyncrasies of their enterprises (e.g. FOGG members killed weeds by prolonged flooding of paddocks). Graziers in the Maranoa and cereal producers in the Lowbidgee have a relatively low dependence on herbicides, fungicides, miticides, vermicides, insecticides and other pesticides.⁸⁴² By contrast, fruit and vegetable production – especially of soft-bodied fruits – tends to be more dependent on such inputs. Given that poorly managed input use can have deleterious environmental impacts,⁸⁴³ this case was expected to reveal insights into the

⁸³⁹ Pat, Oliver.

⁸⁴⁰ Oliver.

⁸⁴¹ AOL, *Australian Certified Organic Standard 2013* <<http://austorganic.com/australian-certified-organic-standard1/>>.

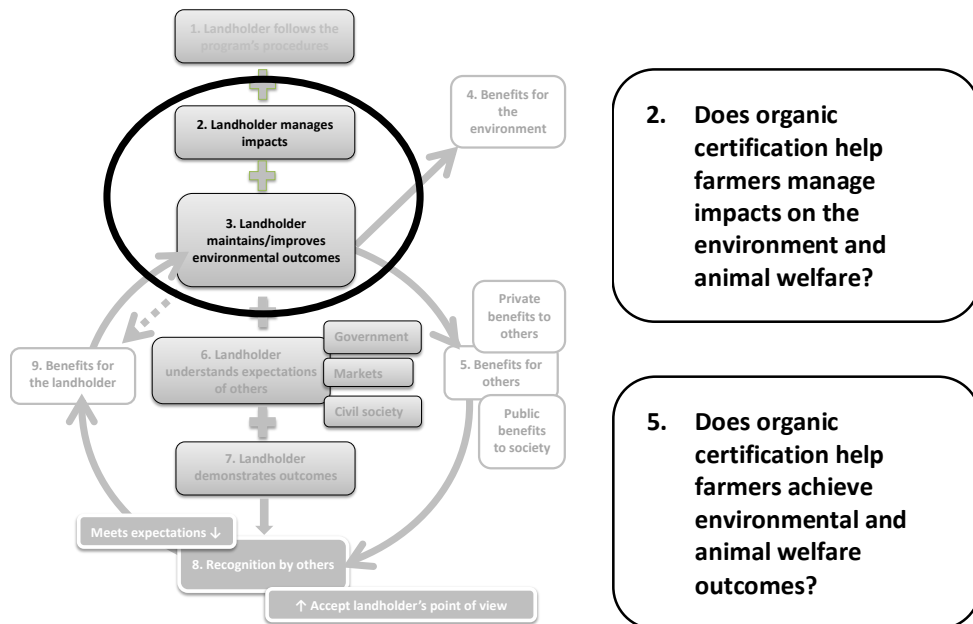
⁸⁴² Vaarst et al, above n 566.

⁸⁴³ G Nachimuthu et al, 'Organic Vegetable Farms are Not Nutritionally Disadvantaged Compared with Adjacent Conventional or Integrated Vegetable Farms in Eastern Australia' (2012) 146 *Scientia Horticulturae* 164; Y Bajgai et al, 'Comparison of Organic and Conventional Managements on Yields, Nutrients and Weeds in a Corn-Cabbage Rotation' (2015) 30(2) *Renewable Agriculture and Food Systems* 132.

application of organics to a sector whose conventional systems are highly dependent on synthetically manufactured inputs.

Secondly, the average size of a typical Australian broad-acre pastoral or cereal farm in the semi-arid climatic zones (as in the cases of CLM and FOGG) was expected to be relatively large (thousands to tens of thousands of hectares), whereas fruit and vegetable farms tend to be smaller and more intensive (tens to hundreds of hectares). Thus, potentially, the CLM and FOGG farms would have greater leeway to devote land to conservation uses (e.g. by fencing-off remnants of native vegetation) than ACO farms. The choice of enterprise for ACO was expected to generate insights on the challenges faced by smaller intensive operations in nature conservation.

6.4.3. General Perceptions of Environmental and Animal Welfare Issues: Element 2 and 3, Research Questions 2 and 5: Managing impacts, and achieving outcomes



Only two of the five respondents regarded themselves as having ‘ecosystems services’, ‘environmental management’ or ‘nature conservation’ enterprises, even though all manage significant natural resources. For one ACO member, Carl, these categories described his whole operation (about 400 ha).⁸⁴⁴ One FOGG landholder, Dennis,

⁸⁴⁴ FS Qs 1, 5 & 7.

regarded these categories as part of his enterprise mix, nominating almost 700 ha of bird breeding habitat in creeklands and frog refuges in a dozen dams (about 4% of his landholding).

Respondents were asked to rate 12 pre-set environmental and four animal welfare issues, with results shown in Appendix 11: half of the pre-set issues in each category were regarded as important or very important by a majority. As with the CLM case study, the organic producers did not rate greenhouse gas issues strongly.

Interviewees recounted their families' close involvement with the district sometimes spanning generations on the one farm.⁸⁴⁵ FOGG growers were keen to relay the special qualities of their properties:

This is sort of unique spot because we're actually one of the 18 listed iconic sites in the Murray Darling Basin ... So you're farming in a fairly sensitive wetland environment ... I guess some of the major issues are obviously if you were farming conventionally would be chemical and fertiliser contamination because all our drainage runs back into the wetlands and I guess one of the reasons why we farm organically is because of that.⁸⁴⁶

The water birds of the wetlands are a particular attraction. FOGG growers were knowledgeable about rare species, and were interested in the natural world around them.⁸⁴⁷ They took some pride in being able to correct visiting researchers about species presence in the district.⁸⁴⁸

For ACO producer, Carl, the biodiversity conservation requirements of the ACO Standard link closely to productivity by providing refugia for the natural predators of the invertebrate pests that attack his fruit and vegetable crops:

In my view it's a necessity ... We virtually don't spray to kill stuff. Organic growing is not about killing, it's about life. It's not about death. I try to avoid death [laughs]. So things living happily together. It's just that great balance.

⁸⁴⁵ Dominic, Oliver.

⁸⁴⁶ Oliver.

⁸⁴⁷ Dennis.

⁸⁴⁸ Dennis.

FOGG members were willing to pursue organic farming because of its benefits for their business. Dennis described the link between productivity and environment in terms of fertility replenishment of the flooding regime and the role of hundreds of thousands of water birds – ‘farmers’ friends’, as he called them – in managing plagues of ‘grubs, crickets, grasshoppers and mice’. The benefits of environmental management for FOGG were closely aligned with marketing angles, and the FOGG growers made a business-case of organic certification and environmental management.⁸⁴⁹

As noted in Chapter 4 (in Damien’s interview), there was a dissonance between landholders’ perceptions of the natural wonders on their farms, and developing profitable enterprises. FOGG members were up-front about the conversion of their farms from grazing enterprises to irrigated cereals:

[T]o develop our farming country, we had to plough up a lot of country that the environmental movement saw as a crime. We were committing a criminal act in the eyes of many in the conservation movement by developing this land in this area. There was people within the organic movement that had really mixed feelings about certifying us in the early days because of their perception that we’d done a lot of damage to the environment down here in a really sensitive area.⁸⁵⁰

The passing of time gives Oliver a sense of perspective about this perception:

You’ve got to have some sympathy for that argument, because when you’re young and you’re farming and you’re trying to survive, you probably don’t see that picture that they would see and they don’t see it from our point of view.

Pat spoke candidly about the constancy of the economic imperative:

[Y]ou’re being pushed from different areas, (a) usually to put bread on the table, (b) pushed by your banker, because we all owed money.

Similarly, commercial viability was a constant concern for ACO producer Dominic:

⁸⁴⁹ Dennis.

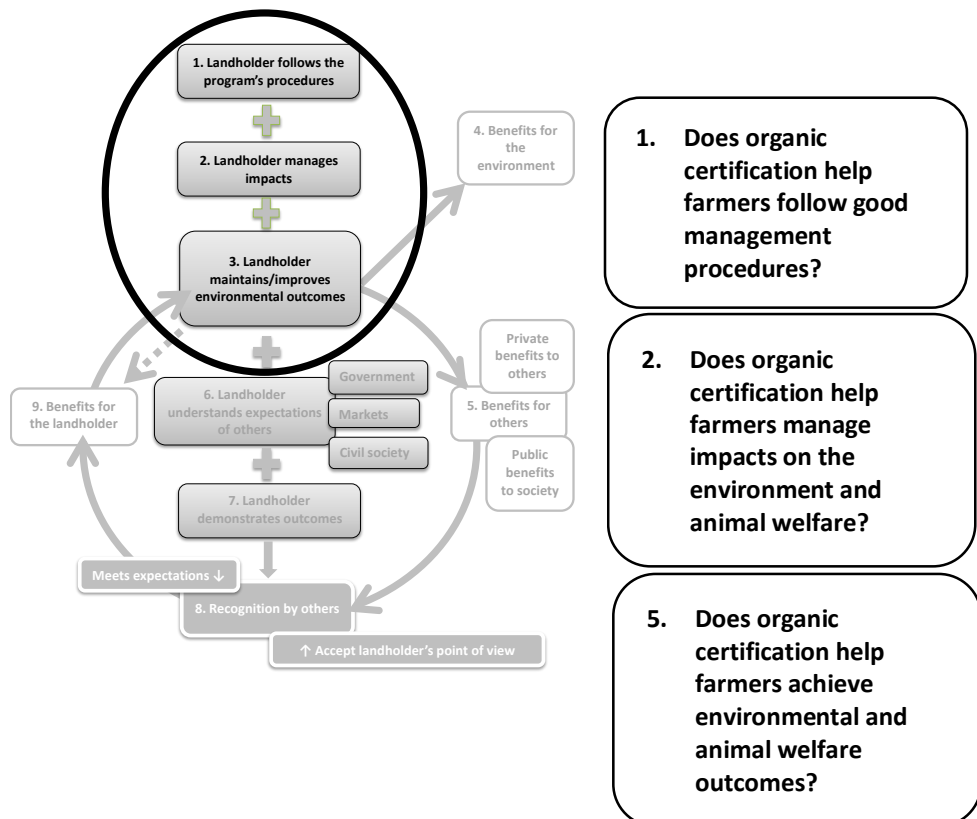
⁸⁵⁰ Oliver.

[T]rying to find markets for what we've got to sell [has] probably taken a lot bigger role than what we expected, because there's no point growing it if you can't sell it.

Like growers in the CLM case study, FOGG growers connected welfare with productivity.⁸⁵¹ Native animals as pests were a concern for FOGG growers, and the discussion of animal welfare in relation to culling native pest animals was overshadowed by their effect on production:

Their welfare?! Oh Jesus, I couldn't possibly agree with that. Look it's a consideration, you don't want to be cruel to them, but I don't need to be eaten out by them.⁸⁵²

6.4.4. General Perceptions of Organic Certification: Element 1, 2 and 3, Research Questions 1, 2 and 5: Following Procedures, Managing Impacts, and Achieving Outcomes



⁸⁵¹ Pat, Dominic.

⁸⁵² Pat.

The results in Table 6.3 show the aggregated profiles for all organic respondents,⁸⁵³ ACO and FOGG combined, revealing a relatively positive perception of organic certification, with improvement in the first four levels of most domains, and a positive picture of actual practice change (Level 6).

Table 6.3: Organic respondents' perceptions of management in six domains

Level in modified Bennett's Hierarchy	As a result of participating in organic certification, do participant-farmers believe they:	Domains					
		Environment	Animal welfare	Monitoring	Laws & Regulations	External stakeholders' expectations	Demonstrating outcomes
6.	– Have <i>changed</i> practices in relation to the domain?						§
5.	– Intend to change practices in relation to the domain?						
4.	– Have more skills for dealing with the domain?						
3.	– Are more confident in dealing with the domain?						
2.	– Are more convinced of the benefits of dealing with the domain?						
1.	– Have improved their knowledge of the domain?	**					

Key: = majority agree* = majority disagree*

* 'Agree' in this chart = strongly agree + agree. 'Disagree' = strongly disagree + disagree
 **Two-part question: environmental knowledge (a) on-farm, and (b) in the wider district. Results were the same for each question.
 § Instead of 'actual practice change', this level was re-framed as whether the respondent had successfully demonstrated outcomes to external stakeholders to date.

Though the FOGG farming system was easily adapted to organic practices,⁸⁵⁴ to be an organic producer in their district at that time meant being perceived as maverick:

We're still viewed as the lunatic fringe.⁸⁵⁵

In the early days of Carl's organic career, there was a dearth of information, and local peer support for organics was non-existent. Being an organic pioneer required self-confidence:

I was regarded as a hippy or a drop-kick or something, but that became a motivation for me. I thought, well there's no good arguing with people about

⁸⁵³ FS Qs 6, 8, 11, 14, 19, 26.

⁸⁵⁴ Dennis, Pat.

⁸⁵⁵ Oliver.

poisons or anything, just be successful and that's the best way, so that was motivation to try and make sure it worked and so far so good.

Dominic avoided communicating to his peers about what he was trying to learn:

I still wasn't telling anyone what I was going to do, but ... I went off to do [a course] and then by the end of that I was confident that ... I can take it on and then came back and got into implementing biological farming practices.

For FOGG growers, the economic imperative was uppermost in their minds and Pat was candid on the importance of a viable business-case for organics:

[I]t doesn't matter whether it's bloody organics, growing chooks or whatever it is. If it can't stand on its own two feet, it will fold, it won't be sustainable.

No single reason stands out in Oliver's rationale for implementing an organic program. It was a mix of factors, including profitability, risk management, avoiding government intervention, maintaining access to natural resources, environmental protection and family health.

For the ACO growers, the impetus to participate in organic farming was less accidental than FOGG. Carl had been involved in organics for the longest of any of the organic interviewees. His decision to enter into organic production grew out of a deep-seated unease with chemical farming:

I've been on the land here from a kid ... and I was born here 60-odd years ago. I wanted to be a farmer then, still want to be a farmer. Started off a chemical farmer and was taught to farm by my dad, DPI and chemical companies. It wasn't really what I thought was farming supposed to be – I thought it was supposed to be driving tractors and doing other good things, but mainly we were throwing poisons around and working out combinations of poisons.

A decisive factor was his growing belief that farmer sickness was linked to farm chemicals:

I started noticing ... local neighbours and friends dying in their 50s: older blokes than me, of course, then but they were dying in their 50s, early 50s, with leukaemia, and over a period of a few years seven of them died of leukaemia in

their 50s, including my dad, and I started to question the whole ethics of spraying and poisoning and so forth.

He adapted easily to the formalities of certification such as auditing and documentation and believes the organic standard should be strictly enforced to protect the collective integrity of organics.

I thought it was good. I embraced it. And I still do, I've never wavered from that: we should always have that.

The other ACO participant, Dominic and his family had been growing fruit in his district for several generations but had progressively converted from non-organic horticulture to biological farming to certified organic over the past decade, which he saw as a way of recouping the costs:

[T]he only way that we could actually cover or do it economically viably was to go certified organic, so that we could reach the customers that would pay the premium for that product.

For the FOGG growers, the primary advantage of organic certification was profit. There were secondary advantages, but they were more difficult to articulate or attribute precisely:

Whether that helped or not, I don't know, but we were using anything we could to hold onto the resource. I'm not sure that it helped all that much, but there's all the little one percenters – you use anything.

In Pat's view, the reputation of organics was enough to fend off bureaucrats:

I think it certainly helped ... I think a number of government agencies, I wouldn't say backed off, but are less likely to pressure us to do something ... [T]hey usually back off when you just say, 'Look we can't do that because our certification ideals don't allow us to do that'.

For ACO participants, the non-financial benefits of organics were more influential than for FOGG growers. ACO growers were no less commercially oriented than FOGG, but for Carl, the health benefit of organic production to farmers and consumers was an under-rated inter-generational public interest benefit:

[I]t's a benefit to the government in the long term because people are healthy ...
[A]s farmers we need to make a decision for the unborn kids and the little kids in what they eat, and we need to be providing guaranteed wholesome, un-poisoned food for those kids who can't make a decision for themselves.

Part of the problem in Carl's view is transparency: the chemical regime used to grow fruit and vegetables is not readily known and knowable by consumers:

[P]eople don't understand what's happening in the real world. They don't understand their fruit is being methyl bromided. They don't understand that it's been 2-4-D'd, and Roundupped and Paraquated.

In his view, growers are using these chemicals in response to supply chain requirements, to the benefit of retailers and chemical companies and detriment of their own health.

Carl was even-handed about the prospects of GMOs. He was against them if they encouraged or required the use of farm chemicals, but envisaged that there could be beneficial applications of GMOs:

I'm not against genetic modification. I am against it in crops at this stage because I believe it's mainly been done for the interests of the chemical companies, but there will be good genetically modified things that come out in science to help people's health and all that sort of thing, so you can't put your head in the sand but we certainly don't need that to be developed for the benefit of selling Roundup.

For Dominic, the effect of organic practice on soil was a key benefit:

The first challenge we have is probably overcoming past farming practices, because organics is based on a biologically active soil and past farming practices have created an inactive biological soil. So it's easy enough to replenish, but there's a lot of other things that have gone on in the last 100 years and organics shows up any of those problems.

In addition, organics was a way for Dominic to get off the chemical treadmill:⁸⁵⁶

⁸⁵⁶ See Tracey Clunies-Ross and Nicholas Hildyard, *The Politics of Industrial Agriculture* (Taylor and Francis, 2013), 97.

[T]he pressures that we saw back in conventional was the products that you wanted to use, where you were held to ransom that phosphorus was going to be short of supply and the price was going to go up. Nitrogen: ‘Get in quick! Something's happened and they're not going to be able to supply it’. Insecticides: ‘This is going to be banned, this is what you're going to have to do’. There's a lot of hype in marketing ... You just felt that you were a pinball. You were bouncing all over the place.

Participation in organic certification comes with transaction costs, but Pat believed being involved in a group could alleviate these:

I looked at organic certification, that was '89 ... We didn't do it as a group at the time ... It was a little daunting and overwhelming, and two years later when we were approached as a group, that was a different kettle of fish, because the impact of one person on their own is far different from all your neighbours being involved as well. It means I had protected boundaries all round me.

The power of group effort through the industry association was important to Carl, who was attracted to AOL's membership-based decision-making structure:

[O]ne of the reasons I've kept closely involved with our group is I realise it is *our* group. We can have influence in there, we're members of it, we've just got to be there and get behind it, put your ideas in or whatever ... so it's a democratically run thing, which I like about it.

6.4.4.1. Learning

Organic practice taught Oliver new methods of cropping and animal husbandry, such as avoiding stubble-burning and reducing the use of dips and drenches, which he found saved him money. Learning was a necessity for the FOGG growers because the system was unique:

[T]here's not too many people that farm like we do, so we've basically paddled our own boat and made our own mistakes and learnt from some of them. Learnt from the ones that cost you money.⁸⁵⁷

From Dominic's observations, conversion to organics was a radical process in terms of the response of his orchards:

⁸⁵⁷ Oliver.

I haven't been into drugs, but the only thing I could imagine is someone coming off drugs. The shock that the trees go through from conventional to organic.

The lack of extension support for organic systems meant there was a high degree of self-learning and in-house research for Dominic:

[I]t was 101 things, trying to develop markets as well as learn how to grow product, develop a network of people who you could contact.

Scientific, evidence-based research, development and extension for organics were in Dominic's view, far behind what were available to him when he practised non-organic horticulture, and the mind-set required for conversion to organic is too big a psychological leap for some farmers:

[T]he big thing is you've got to acknowledge that there's another way of doing it, which is also acknowledging that what you're doing is not right. And it ruins people to do that.

For him, a natural curiosity has been essential in the learning process:

[W]e bought a microscope ... to actually get a compost heap, or get some soil and actually see the things that are in there, the bugs and the bacterias and the things.

... as well as resilience to overcome set-backs:

[W]e had locust plagues, rabbit plagues, snail plagues, whatever plague you could have that would destroy a cover crop, we had for three years in a row, and two wet years where there was so much disease.

... and a humble attitude to the getting of knowledge:

Yeah – the more you know, the more you realise there's things you don't know.

6.4.4.2, Organic Growers' Critique

Organics produces a different set of risks compared with non-organic farming:

There's no safety net, when you get a problem, there's not a silver bullet to fix the problem in a growing crop. Or in your livestock industry, you can't just go out there and give them a needle for something.⁸⁵⁸

These include the risks of contamination from neighbouring properties,⁸⁵⁹ and the incompatibility of organic and non-organic livestock systems.⁸⁶⁰ In drought times especially, animal welfare considerations must prevail over certification.⁸⁶¹

In Pat's view, viability was not just a challenge for farmers but for the certification system as a whole:

[T]here's not enough money in it to have continued employment there. There's a high turnover of people there ... So we get back to that same age old problem, is if there's not enough money in the tin, it's going to be difficult to get more professional, and more sustainable, and get that continuity of people within the group, quality people.

Oliver believed there were 'too many certifying bodies for a start and there's not enough cohesion', but overall, was positive about the role of the certifying organizations:

Some people have been critical of the various certification groups over the years ... I'm not necessarily because I know they're totally under-resourced. Pretty dedicated mob actually, but I think it's up to us to get out there and do that sort of stuff, not up to the certifying bodies.

For Dominic, the resourcing issue extends to appropriate and timely research and development for organic production because:

[O]rganic certification doesn't teach you how to farm the way you need to farm ... So the rules of biological farming is more of an influence to what we have to do, rather than certification.

6.4.4.3. Goal-Setting and Monitoring

⁸⁵⁸ Pat.

⁸⁵⁹ Pat.

⁸⁶⁰ Oliver.

⁸⁶¹ Oliver.

Most respondents used rules of thumb for goal-setting and monitoring⁸⁶² but it was uncertain whether most even believed organic certification had a monitoring system. Carl, the one organic producer who reported having a written monitoring system, found it useful, used the results in ongoing management, and adjusted his management depending on the results. Prior to certification, he did not monitor soils, water and contamination, but after certification, he did. Most organic producers observed an improvement in environmental conditions since they commenced organic certification, though two FOGG growers believed weeds had worsened.

Oliver was monitoring quite technical parameters, despite not being confident that he could say he had a monitoring regime:

We were doing soil tests that showed that everything was still pretty much on track. Soil carbon was one thing we had to watch.

He was supportive of the audit process as a means of ensuring he was covering the array of requirements under the standard:

[W]e get inspected annually and it's interesting because they try to give you different inspectors each time and different inspectors focus on different things ... You can't actually say, 'Well, I know what this bloke is going to look at, so I'm not worried about keeping my diary up to date' ... There's always something that you're thinking, 'Oh, I should've probably done that better'.

The discipline required of certification has increased his professionalism in record-keeping:

It's a bit like having to do a BAS statement,⁸⁶³ you just make sure you keep good records and your books are up to scratch and that helps other aspects of your business anyway.

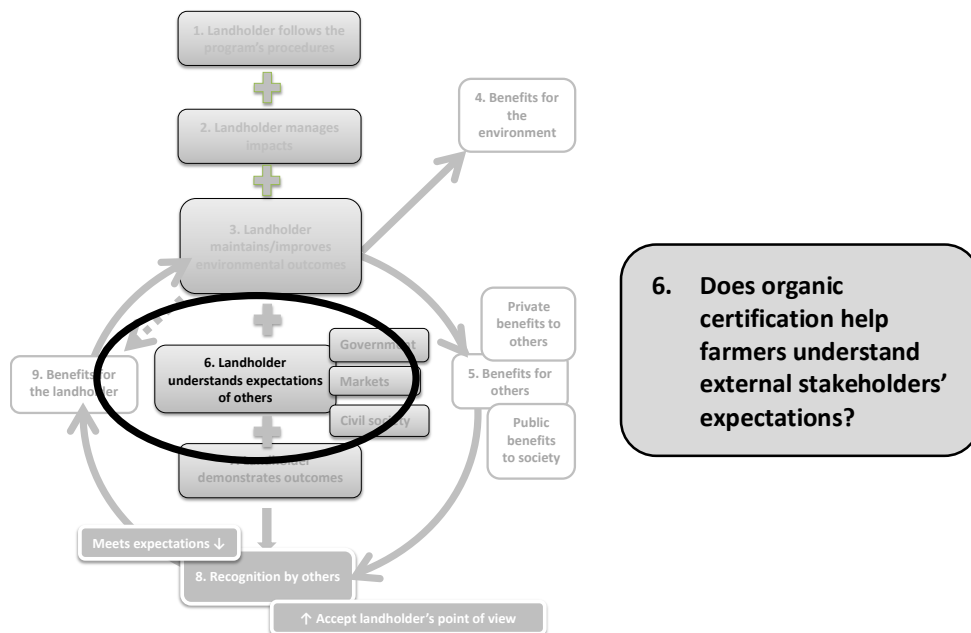
For Dominic, the monitoring required in organic systems is different to non-organic horticulture:

⁸⁶² FS Qs 10, 12, 13.

⁸⁶³ Business activity statement required by the tax office.

[H]ow things respond to that soil seems to be of more value than a chemical analysis. Because we've taken chemical analysis and there's been no change, but the results of what's happening above the soil has been quite a drastic change. I'm interested to get hold of a good penetrometer now, just to look at the differences in the softness of the soil and to what depths. We're seeing with irrigation ... there's a lot bigger water holding capacity, because the trees don't show signs of stress for such a long period of time.

6.4.5. Element 6, Research Question 6: Understanding Stakeholders' Expectations



6.4.5.1. Perceptions of Laws and Regulations

Most organic producers believed that, on balance, current laws and regulations were good for the environment on their properties, but there was no consensus for the off-property environment, or animal welfare. However, most organic producers thought external stakeholders' expectations were good for all options. Most organic respondents believed law and regulations, and external stakeholders' expectations would become more voluminous and complex in the future, and that organic certification would help them deal with this.⁸⁶⁴

⁸⁶⁴ FS Qs 15-17 & 20-22.

Like interviewees in the CLM case study, FOGG growers could recall frustrations with government and regulatory processes. FOGG growers were initially circumspect about promoting their organic credentials with government, and for much of their history, they avoided being noticed by regulators.⁸⁶⁵ They were ambivalent about whether being certified has helped them in their dealings with the law and governments: it may have helped, but the contribution is modest and not easily attributable.⁸⁶⁶ But, overall, FOGG growers were supportive of integrity measures in organic governance, including links to regulation, to pre-empt opportunities for fraud:

If you don't do it ... who's going to be the watchdog? ... If you believe that all organic grain growers are going to do the right thing, Jesus Christ, you believe in fairies.⁸⁶⁷

In contrast, ACO growers tended to see government more in terms of co-ordination and facilitation. Carl's bugbears were European farm subsidies and cheap, low quality, imported produce with no identifiable place of origin. He lamented the lack of protection offered by the law for pesticide/herbicide contamination from neighbouring properties:

[I]t's almost a semi-criminal act of negligence and should be taken up by the law. It's too much for a farmer to try ... Somebody should be stopping it happening ... [S]omething's got to be grabbed by the government and sorted out. Private industry ... organizations can't be fighting those court cases.

Protecting the reputation of the organic descriptor was paramount and the confusing definition at law for domestic produce in Australia concerned him:

[T]here is a definition there but it's not put out there as well as it should be. Where's the OFA? Where's ... Consumer Affairs? Where are they? What are they doing? ... I think that's confusing for consumers, confusing for sellers ... and I also think it's unfair for us certified growers, and I think it's unfair for the customer.

⁸⁶⁵ Pat.

⁸⁶⁶ Dennis.

⁸⁶⁷ Pat.

For Dominic, the challenge is to convince government of the value of organics to agriculture beyond a cottage-industry scale:

[G]overnment controls things: they take the taxes ... they feed them back to where they see the need or the potential growths. And we pay levies to our industry associations and to our organic associations to do the same thing ... So it probably brings us back to government again, to acknowledge that organics is something they can see as being a new and evolving production system for the future ... I suppose develop a partnership: you want growers, organic industry, government, obviously needs to be together.

6.4.5.2. Perceptions of External Stakeholders Generally

Respondents were asked to nominate external stakeholders they perceived to have a significant influence on their business from a list of 17 pre-set options,⁸⁶⁸ and most believed the state and Commonwealth governments, insurers, bankers, and financiers, and Australian consumers significantly impact their management in relation to the environment.

In the interviews, the external stakeholders whom FOGG producers put most effort into accommodating and building relationships with were customers – grain buyers and processors.⁸⁶⁹ As for the expectations of non-commercial or public interest stakeholders, Pat took a robust view:

To be blunt, at the end of the day, it doesn't matter what anyone thinks, because I know that I'm going to have to pay my bills myself, so we better make it work, because all the warm fuzzy feelings don't cut the mustard with the Commonwealth Bank .

And he believed there was little to be gained by trying to please some external stakeholders:

[Y]ou believe in fairies if you're going to get recognition from animal welfare groups. To me, they've got blinkers on, and they aren't interested in giving anyone accolades, particularly if you look like making money.

⁸⁶⁸ FS Q18.

⁸⁶⁹ Dennis.

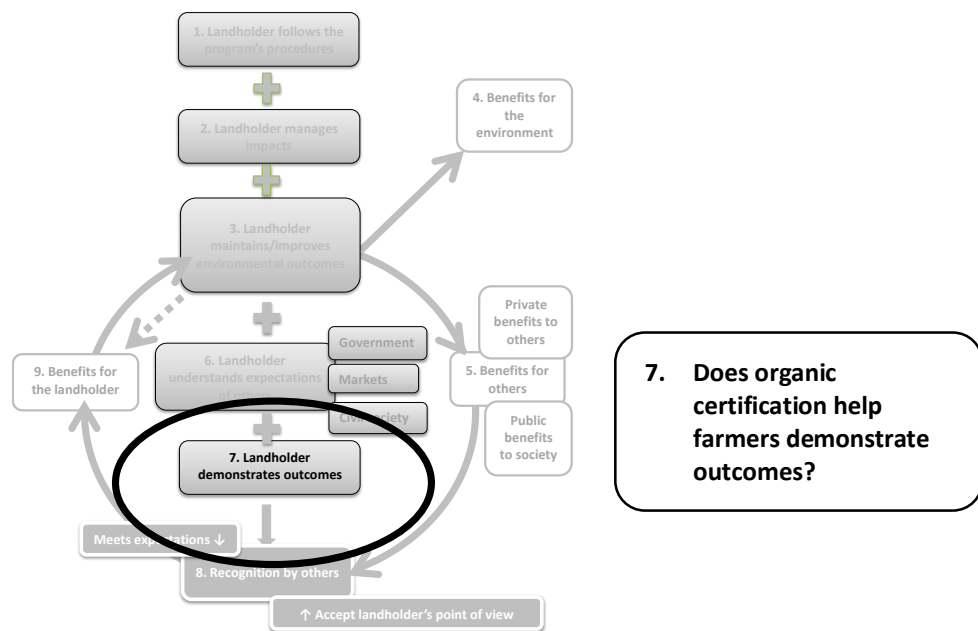
ACO-certified fruit and vegetable grower Carl had a more positive view of external stakeholders' concerns and the opportunity to build relationships with them as consumers became more and more attuned to organic production systems:

[T]he younger generation of mothers now, they're a fairly switched-on crew, they've got access to a lot of information.

In any case, FOGG growers seem to have genuinely enjoyed the interaction with some stakeholders, such as researchers:

They come down for this frog, two carloads of them come down from Canberra and Sydney, in the drought, looking to try and find this Bell Frog. Anyway they said to me, 'It's crashed. We can't find any'. I said 'I don't know anything about bloody Bell Frogs, but if I was looking for some frogs to go fishing ...' and then we found thousands of them ... there's more frogs there than they ever realized. We had a good rapport ... I've got a spare house, and I'd have all these research scientists come and stay at my place, and I'd come over and cook them a feed and tell them wild bush stories.⁸⁷⁰

6.4.6. Element 7, Research Question 7: Demonstration



There was unanimous agreement amongst the respondents that that there will be increasing pressure on landholders to demonstrate outcomes, and that organic

⁸⁷⁰ Dennis

certification could play an important role in helping them. A majority of organic respondents regarded their management plan as a commitment to external parties, as opposed to an internal planning document, and there was almost unanimous support for organic auditing and certification processes now and into the future.⁸⁷¹

When asked in the interviews how they would respond if an external stakeholder with some potential influence on their business asked them to demonstrate good management or prove their environmental and animal welfare credentials, FOGG members were not immediately sure whether their organic certification could act as a tool of demonstration. Pat's response was to turn the question back to the interrogator:

If you asked me that question I'd say, 'How would you go about it? If you're the judge, you tell me how you'd go about it, and then see if you can make money out of it at the same time'. If you can, you're going well.

Similarly, Oliver was unsure whether organic certification could help him demonstrate performance:

I don't know whether I could. I guess there's different benchmarks in that you'd be able to say this particular wetland that I'm growing crops alongside is in bloody good nick and I've got an endangered species here and I've got a threatened species there and they're all breeding here right alongside where I'm farming ... [L]ook I don't know, I don't know ... my crops look healthy, my stock are healthy.

However, as the conversation progressed, Oliver connected aspects of certification with demonstrating outcomes:

[Y]ou would demonstrate that we're under probably closer scrutiny than any other group of farmers from our farming techniques and our treatment of the land.

Eventually he recalled occasions where justifying their management and demonstrating outcomes became essential, especially in relation to water-use efficiency, in a time when water resources governance was evolving to favour the highest-value production:

⁸⁷¹ FS Qs 23-25 & 27.

[S]o that we could actually stand up with anyone else that was irrigating. We were farming efficiently with the resources that we had at the time ... [W]e proved that we weren't creating ground water issues.

FOGG growers were supportive of certification, with its emphases on independent auditing and traceability,⁸⁷² which in one case proved to be critical for the defence of a contamination claim.⁸⁷³

Dominic reflected of the educational and communicational challenges of demonstrating credence qualities and production values:

[I]f you could get people to understand about all the mycorrhiza and fungi and things like that, that you're ... generating and accessing your own nutrition in your soil; if you could measure that and say, 'Well, you've got this on these soils, but you haven't on those soils'.

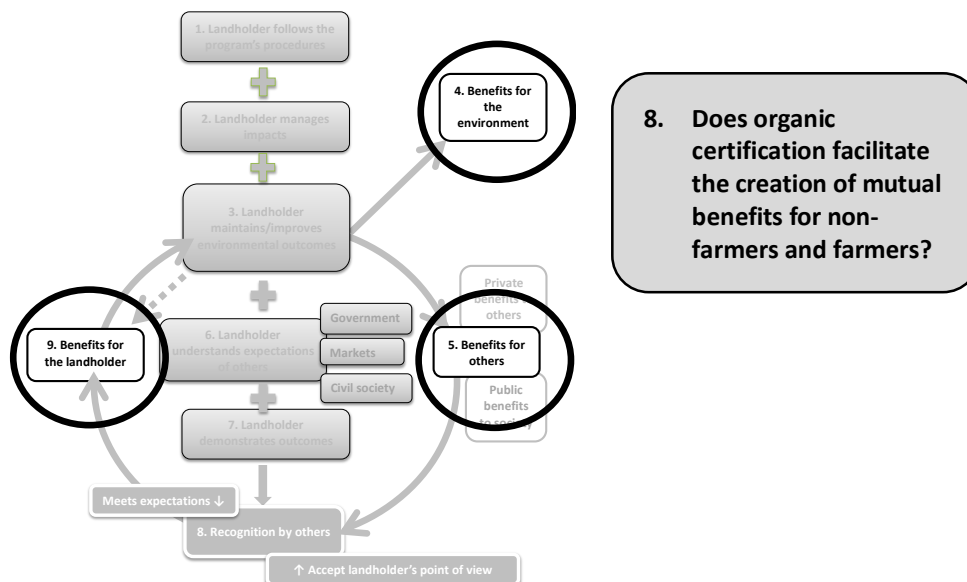
He noted a disconnection between what he sees as important environmentally and what external stakeholders want to see demonstrated:

If I go out there and explain what we're actually doing, how we're doing it, they're not going to understand what I'm talking about. So I've got to simplify things: ... we're creating our own compost to the regulations that we've got to use and that's the core base of our soil management, nutrition management program ... There's a weakness there of being able to identify what you're actually doing.

⁸⁷² Dennis.

⁸⁷³ Oliver.

6.4.7. Elements 4, 5, and 9, Research Question 8: Mutual Benefits



The earlier section in this chapter on the interviewees' general perceptions of organic certification records the benefits they were gaining from participation in organic certification, as well as their perception of benefits to the environment, animals and other stakeholders generally, as relayed in the interviews. In the survey, respondents were asked to select the benefits (current and future) of organic certification from the list of 41 hypothetical benefits, divided into six broad categories.⁸⁷⁴ Results are shown in Appendix 12, which shows a majority believed they are getting almost all the pre-listed benefits.

6.4.7.1. Links with Other Programs

Other programs which these farmers nominated in the survey⁸⁷⁵ and interviews included landcare, a threatened species program, departmental productivity programs, the regional NRM group, supermarket quality assurance programs, food safety and hygiene, occupational health and safety, an indigenous cultural and heritage program mapping cultural and archaeological sites, and joint research projects with the Grains Research & Development Corporation (GRDC).

⁸⁷⁴ FS Q 9.

⁸⁷⁵ FS Qs 32 & 33.

The FOGG landholders believed the various programs they were involved with complemented each other, whereas both ACO participants thought there was too much duplication. The difference between FOGG and ACO producers may be a function of enterprises: fresh, perishable fruit and vegetables require greater attention to food safety than cereals. For Dominic, this was frustrating, and required streamlining:

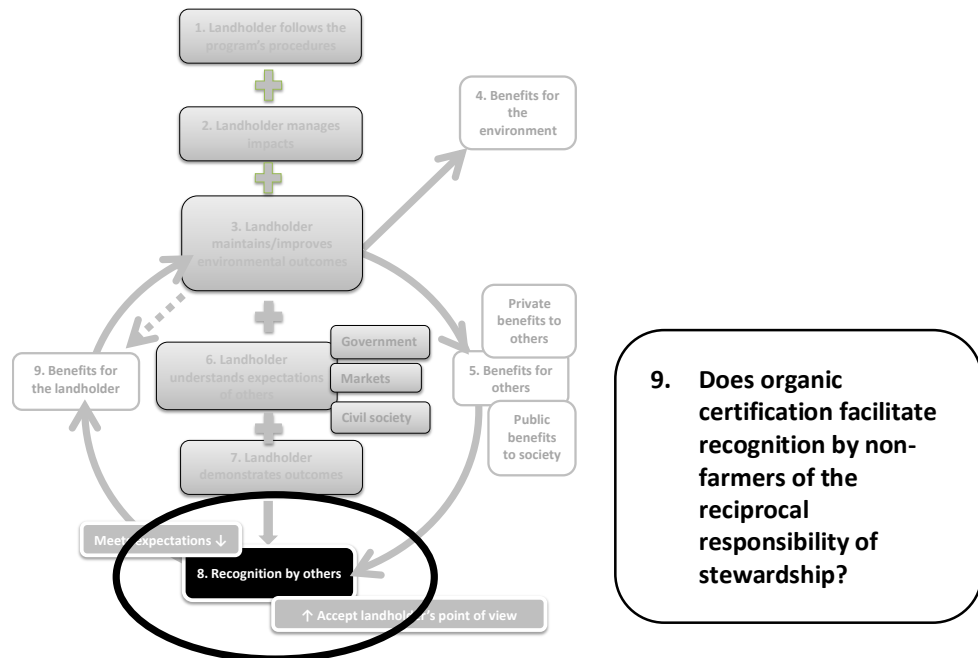
[W]e'll have six audits here a year ... You spend a day here with your auditor, convincing her you're doing everything right ... Then the guys reviewing it all, they get a different message to what we've talked about and then we've got to clarify that once they see that report ... [W]e've got four different quality assurance programs, because Woolworths have a different one to Coles. To get Woolworths' quality assurance you've first got to have another quality assurance prior to that one, and then Coles have a different protocol again ... Fruit fly is another audit ... Yeah, then you've got WorkSafe.

The possibility of harmonizing the processes of different programs depends in part on the willingness of the different program operators. In this regard, streamlining of program auditing processes is being pursued. ACO auditors are able to conduct contemporaneous Freshcare and annual organic certification audits.⁸⁷⁶ According to its website, Freshcare is the horticultural industry's on-farm assurance program covering food safety, food quality and some environmental parameters, benchmarked to the Global Food Safety Initiative (GFSI), and accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).⁸⁷⁷

⁸⁷⁶ <http://aco.net.au/standard/freshcare/>.

⁸⁷⁷ Freshcare website, <http://www.freshcare.com.au/about/history-of-freshcare/>.

6.4.8. Element 8, Research Question 9: Recognition



Most respondents reported that they had already received some recognition as a result of organic certification, including from governments, buyers/customers, processors, environmental groups and markets. Types of recognition included price premiums, preferred supplier relationship and awards. Carl regarded a mention in a celebrity chef’s cookbook, and Dennis, the fact that researchers wanted to access his property, as recognition. All respondents agreed that, in the future, recognition would be linked to demonstration of outcomes and that organic certification would be important to them in this regard.⁸⁷⁸

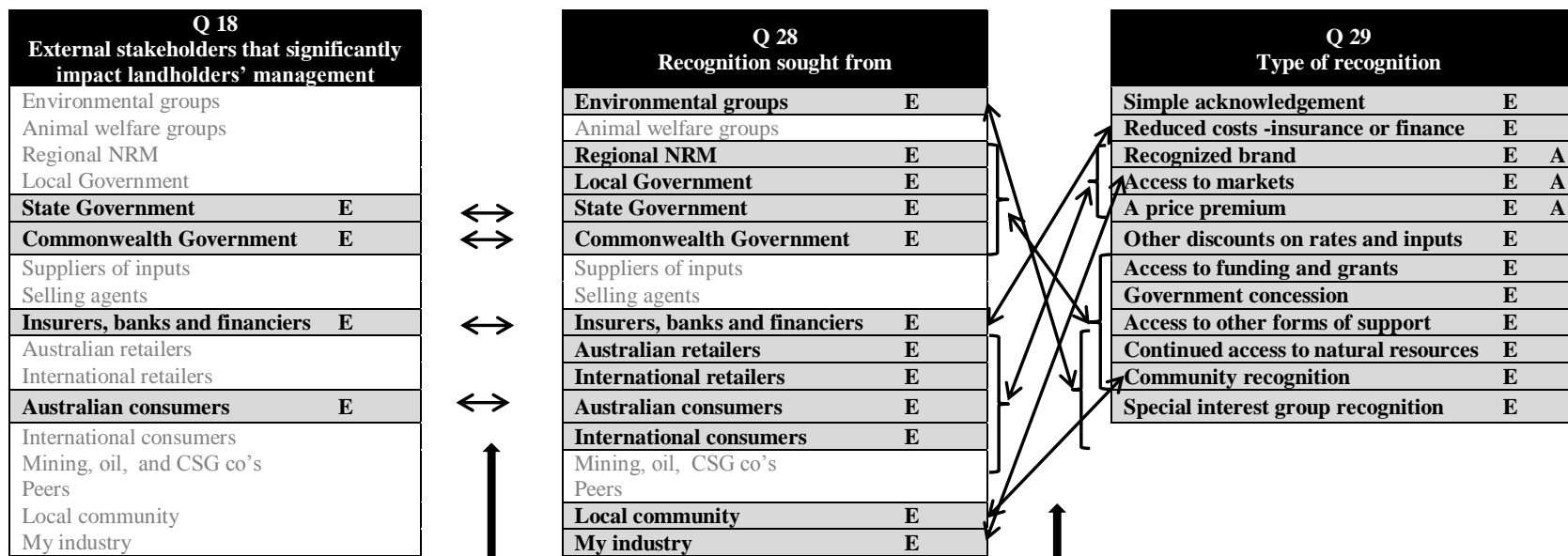
Results for the three questions – stakeholders that significantly impact landholders (Q18), stakeholders from whom recognition is sought (Q 28), and types of recognition sought (Q 29) – are placed side-by-side in Table 6.4. All the pre-set types of recognition were desired for environmental outcomes by a majority of organic respondents and most of the external stakeholders’ were nominated as ones from whom they would like recognition. The most influential stakeholders were targeted for recognition. To this extent, the organic respondents seem to be making rationale

⁸⁷⁸ FS Qs 28-31.

connections between the three categories, at least for environmental outcomes, as indicated by the arrows between the columns.

Table 6.4: Organic landholders, stakeholders and recognition

Bold = Majority landholder response in relation to management of environment (E) or animal welfare (A)



These arrows represent the researcher's interpretation of whether certified organic farmers are connecting recognition with stakeholders they consider to be influential. There appears to be some connections here between influential stakeholders and stakeholders from whom certified organic farmers want recognition.

These arrows represent the researcher's interpretation of whether certified organic farmers are connecting the types of recognition they desire with stakeholders who are potentially able to deliver that type of recognition. There appears to be many connections here between stakeholders from whom certified organic farmers want recognition and stakeholders able to deliver the types of recognition sought.

In Oliver's view, the most relevant forms of recognition were price premiums and market security, which organics, for the most part provided, and which were necessary to cover the transaction costs and other risks of organic production. Recognition from anyone other than market stakeholders was simply not on the FOGG agenda in the early days:

We went a long time here just cruising along under the radar. One of our things was we'll do our own thing here, we won't promote ourselves because we had no security with our water; we don't want people sticking their nose in down here.

It was a strategy that worked initially but eventually the pressure to justify their use of water required a different approach, and organics seems to have played a role:

So then we had people take the reverse action and really get out there and try and promote our credentials as land managers and managers of the environment ... [T]he fact that we were farming organically was always something that we used in that promotion.

For Carl, the best recognition was enhanced value:

[T]he way you recognise landholders is you increase the value of their product to them.

Building district or regional collaborations was important for him as a way of remedying the effect of undifferentiated commoditized produce on farmers' self-esteem:

And that keeps the average vegetable farmer under control ... almost stops him having pride in his product, which I think is a big thing that's lacking. Pride in himself. He can't see his product anywhere. He produces this lovely stuff and it disappears.

Similarly for Dominic, recognition of his professional standing as a farmer was important:

With organics your customers have relationships. You feel like you're worthwhile. Back when you were conventional, all they wanted was the base price on the market and everyone was canning farmers and, 'You use too much water, you're doing this, you're doing that'. Yeah, but why am I here? ...

[F]arming in general was seen as unimportant and everyone had to wear that. I suppose they still are. Whereas at least we have got recognition from our customer base in organics, which is what we didn't have in conventional.

Dominic believed that agricultural industries are part of the problem of recognition of organics. In his view, realization of the impacts of industrialized agriculture on the environment would be too overwhelming for its proponents to accept:

The challenge for the community to acknowledge what we do is, firstly, for them to understand what we do and then, if they understand what we're doing, the ramifications for the conventional industry. It would create so much of a turmoil in people's minds to say, 'Well, this is happening here. Why is all this happening? This is what's happened for the last 80 years.' ... I don't think acknowledgement has to come from within the customer base; that's there at the moment ... It's denial from the industry – the conventional industry itself: they believe they're doing the right thing, as I did ten years ago.

The next chapter summarizes the findings for both CLM and organic certification case studies in terms of answering the nine research questions, and consolidates the policy implications of both case studies.

CHAPTER 7: DISCUSSION

This chapter comprises four sections:

- Section 7.1 A synthesis of findings from the two case studies in response to the nine research questions.
- Section 7.2 Some reflections on the potential value of VSPs, their operators and farmer participants in co-regulatory arrangements, based on the characteristics of the farmer participants and features of the VSPs, synthesized from the data on design and farmers' perceptions.
- Section 7.3 Some of the ongoing challenges to collaborative natural resource governance in rural Australia, drawn from the interviews with stakeholders and farmers.
- Section 7.4 Some reflections on the conceptual framework as an evaluation model.

Suggested policy directions and future research are outlined in Chapter 8.

7.1. Synthesis of Findings

The conceptual framework was designed around the central research question of whether farmers' participation in VSPs contributes to collaborative natural resource governance in rural Australia. The framework raised nine sub-questions for the research. The framework reflected a hypothesis that if empirical investigation of a VSP supported an affirmative answer to any of these nine questions, this indicates that participation in the VSP would contribute to a potential collaborative arrangement, and that the organization managing the VSP and/or the farmers participating in it would potentially be suitable partners in a governance partnership. An affirmative answer does not constitute proof, but it is *prima facie* evidence which could help a range of prospective governance partners weigh-up their involvement in such collaboration.

In answer to the overarching research question, the study makes a preliminary finding, subject to its limitations, that 'yes', farmers' participation in VSPs can make a useful contribution to collaborative natural resource governance in rural Australia. There is

prima facie evidence that the selected VSPs do provide affirmative answers to the nine sub-questions. A summary of this synthesis appears in Appendix 14.

1. Do CLM and organic certification help farmers follow good management procedures?

CLM and organic certification provide support for participants to learn management procedures. In CLM, support is through experienced trainers, workshops, manuals, and *myEMS* – an innovative computerized planning tool. In organic certification, support includes guidance by staff of AOL, NASAA, ACO and NCO, forms available on their websites, publications, technical advice, workshops and training opportunities. Overall, participants’ perceptions suggest they generally find the procedures helpful.

2. Do CLM and organic certification help farmers manage their impacts on environment and animal welfare?

CLM and organic certification have processes to break the management task into ‘bite-sized chunks’. Participants have an enterprise plan to meet legal and social licence obligations and manage (within the limits of feasibility) environmental and animal welfare risks associated with their operations. The auditing processes of CLM and organic participation are designed to ensure participants implement their plans, measure outcomes and adjust plans.

3. Do CLM and organic certification help farmers develop self-standards?

CLM and organic certification systems generally align with the processes for developing self-standards. Development of participants’ symbolizing and self-reflection capabilities is consistent with CLM’s environmental review, monitoring strategies and review workshop, and organic certification’s application and conversion processes, and, in both cases, by the formulation of the management plan, updates, audit and inspection. The forethought capability is strengthened by the systems thinking of CLM, and organics’ planning focus and emphasis on management, not inputs. Vicarious capability is supported by CLM’s group learning and social interactions, and AOL and NASAA’s membership support (newsletters, advice, workshops and training). Self-regulation, self-efficacy and

sense of control are encouraged by CLM's continuous improvement cycle and systems thinking, and by the phases of progress to certification in organic certification's lengthy conversion period.

Participants in CLM and organic certification exhibited self-confidence in relation to their stewardship activities, and they believe that participation in these programs is helping them achieve important outcomes in the public interest arena, including:

- Managing impacts on the environment and animal welfare;
- Monitoring environmental and animal welfare outcomes;
- Complying with environmental and animal welfare laws and regulations;
- Dealing with the expectations of external stakeholders in relation to environment and animal welfare; and
- Demonstrating environmental and animal welfare outcomes.

This is important because the landholders' own confidence in the value of the programs would build confidence in a potential governance partner.

4. Do CLM and organic certification facilitate internalization of stewardship norms by farmers?

CLM and organic certification generally align with the internalization attributes adapted in Chapter 2. Communication of sustainability information is achieved directly at CLM workshop, as well as indirectly through the systems approach, by which participants consider activities, aspects, impacts, objectives, causes, strategies, targets, and indicators. Organic certification standards incorporate sustainability information in guidelines and general principles.

Tailoring to individual capacities was supported by the lengthy conversion phase for organic certification, and CLM catered for landholder heterogeneity. Capacity building was supported by CLM's reviews and systems thinking, and organic certification's harmonization of various external rules and instruments, members' support (newsletters, advice, workshops and training), emphasis on management rather than inputs and testing protocols, and, in both cases, by risk assessment, management plans, monitoring and documentation strategies.

Interdependence and peer support was supported by CLM's peer and social learning, in organics by the mutual benefit/detriment and shared fate in guarding the organic brand, and in both by membership-based governance structures. Autonomy was supported by CLM's self-directed goal setting process. CLM builds trust with a range of external stakeholders by way of its legal review, biodiversity planning, and regional NRM planning processes, and organic certification is informed by extensive stakeholder consultation with stakeholders nationally and internationally.

5. Do CLM and organic certification help farmers achieve public interest outcomes?

CLM, ACO and NCO participants are guided through environmental and animal welfare reviews of their property and operations, and encouraged in the implementation of management plans addressing the same. For CLM, this occurs using the interactive *myEMS* software, workshops, newsletters and other informative events, and for organic certification, through the application process, long conversion process, guidance from organizational staff, and other membership supports (advice, newsletters and workshops). CLM and organic certification participants exhibited awareness of the sustainability and animal welfare issues within their enterprise and the options that they have to address them.

6. Do CLM and organic certification help farmers understand external stakeholders' expectations?

CLM and organic certification systems foster awareness of participants' legal and policy obligations and other expectations of external stakeholders. Participants have a receptive attitude towards external stakeholders and partnerships with stakeholders. Generally they believe, on balance, that law and regulations and the expectations of environmental and animal welfare NGOs were mostly good for the environment and animal welfare. This was somewhat unexpected but is important because it would be difficult to create a co-operative environment for collaborative governance arrangements to work if landholders have a negative perception of the legitimacy of potential collaborators and their concerns.

In general, the participant landholders were future-oriented and willing to maintain participation. In CLM's case, this is despite the lack of tangible and immediate productivity, financial and other business benefits. This is important because potential collaborators (public or private sector) would likely want to work with strategically minded landholders willing to persist with a stewardship program despite the absence of immediate tangible financial benefits. Non-participants, in contrast, tended to be hesitant about engaging with processes like environmental certification unless the benefits were obvious and guaranteed.

Participant landholders exhibited openness to interacting with external stakeholders, including government, and environmental and animal welfare groups; and they exhibited openness to external scrutiny, backed up by monitoring and demonstration. This openness is important because external stakeholders would be unlikely to join governance collaboration as investors or supporters without a belief that landholders were open to their points of view.

The CLM and organic certification systems have mechanisms for participants to update their awareness of external stakeholders' expectations, and of environmental and animal welfare issues potentially relevant to their enterprises.

7. Do CLM and organic certification help farmers to *demonstrate* public interest outcomes?

Participants demonstrate outcomes through the whole process of formulating objectives, preparing plans of action, regular review of their plans, implementation of their plans, and verification of outcomes by independent audit.

8. Do CLM and organic certification facilitate a transfer of benefits between external stakeholders and farmers?

Participants believe participation is beneficial to a range of interests and, arguably, CLM and organic certification provide credible platforms for benefit sharing but, at the end of the day, it is outside of the sphere of influence of participating farmers, ALMG, AOL or NASAA to compel stakeholders to mobilize an exchange of benefits. More research is needed on stakeholders' perspectives of the potential for a flow of benefits.

9. Do CLM and organic certification facilitate recognition amongst non-farmers of the reciprocal responsibility of stewardship?

Participants have a logical view of recognition and believe participation has garnered limited recognition from stakeholders. CLM and organic certification, arguably, provide external stakeholders with a platform for recognition, for instance by recognizing the certification brands and logos of ALMG, AOL, ACO, NASAA and NCO. As with benefits, recognition is outside of the landholders' management domain and requires further investigation of external stakeholder reactions to the platforms provided by CLM and organic certification.

7.2. Reflections on the Potential for Collaboration

This part of the chapter offers some reflections on the potential value and limitations of CLM and organic certification as adjuncts to co-regulation of natural resources. In line with the limits of the research objectives and methodology, these reflections are opinions informed by the balance of evidence and subject to further research. The reflections are organized around five themes:

1. The importance of the larger policy environment
2. The behavioural dimension of governance
3. Adopting stakeholder expectations in management
4. Preparing for the future
5. Potential benefits of partnerships with CLM and organic certification

7.2.1. Whole Policy Environment

The study shows the limits of the capacity of VSPs to ensure public interest outcomes. Arguably, VSPs work best when nested in a broader policy and governance milieu of environmental protection. The historical environmental damage of agriculture attested to by both landholders and external stakeholders could not have been prevented by the subsequent participation in a VSP. The shadow of the law and the policy environment established by government affect the extent to which VSPs can secure genuine protections for the environment. In a nutshell, government has an important role and nothing in this study suggests the removal of government from the governance.

7.2.2. The Behavioural Dimension

One of the rationales for collaborative governance is that it capitalizes on a range of drivers to foster pro-environmental behaviours, not merely fear of the legal sanctions. Theoretically, a co-regulatory regime underpinned by a sound understanding of behavioural processes is more likely to see farmers act out pro-sustainability behaviours than one that is antagonistic to these processes. VSPs that facilitate the self-standard capabilities and reinforce innate and internalized pro-environmental motivations may smooth the process of implementing regulatory objectives, avoid divisive conflicts, and reduce the costs to government of compliance. Internalized social norms may generate a collective stewardship ethos amongst farmers that activates peer-to-peer regulation.

CLM seems consistent with the behavioural theories discussed in Chapter 2. It hones landholders' sense of control by helping them to clarify their management goals; this is achieved by deconstructing management into: *activities*, *aspects* and *impacts*; and setting goals and targets. The aim of management is to manage aspects of the landholders' activities impacting on the environment that are within the landholders' control to manage. The approach allows landholders to divide the sustainability challenge into manageable portions, and CLM participants' plans should be able to match individual skills and capacity to the management tasks. CLM encourages autonomy by allowing landholders to enter into its processes at a level consistent with their skills and motivation and, for the most part, does not impose externally mandated objectives that might crowd-out internal motivators. The systems approach embodied in the CLM methods should direct landholders to causes of degradation and preventative measures.

CLM is designed on the basis of the 'Plan-Do-Check-Act' cycle – Deming's continuous improvement loop – reflected in *ISO 14001*. This cycle is consistent with the foresight, self-reflective and goal-setting capabilities of the social cognitive model. A continuous improvement approach can accommodate participation by landholders regardless of personal capacity or the state of their lands. Anyone can continuously improve, though not everyone can immediately achieve high environmental practice standards from the outset. An absolute standard that strictly demands and rewards excellent land condition risks ignoring the achievements of the landholders wanting to

improve degraded land. It therefore risks alienating managers in such situations from involvement in a process to plan and implement improvement in a supportive context. Restoration of degraded lands is an important public interest activity⁸⁷⁹ but is potentially more difficult and more expensive than maintaining good land in good condition.

Organic certification has some similarities with CLM. For example, the ‘management-not-inputs’ approach of organic certification may direct landholders to address causes through preventative measures rather than via a more reactive, symptom-driven approach. The balance of evidence suggests organic certification is less consciously built around the Deming model but the effect of the planning and review phases is likely to reflect a similar management ethos. On the whole, organic certification seems to rely on different behavioural strategies than CLM. Organic certification has a more restrictive entry threshold and longer ‘apprenticeship’ phase than CLM. For CLM, the locus of decision-making remains with the landholder with respect to adopting practices that give effect to the management plan, whereas organic certification is more reliant on external prescriptions, and decision-making on the choice of practices lies less with individual landholder and more with landholder representatives at the organizational levels – OISCC, AOL, NASAA and IFOAM.

Research suggests organic farmers bring to their organic practice stronger pro-sustainability norms than conventional farmers. In this case, the external standards imposed by organic certification may not be antagonistic to the internal drivers but reinforce them. Organic certification seems to provide a supportive, systematic, rule-based architecture with tangible market rewards for farmers with a pre-existing disposition (and perhaps some established competencies) towards a more environmentally attuned approach to farming.

CLM’s close alignment with the behavioural theories and internalization attributes discussed in Chapter 2 may make it generally better suited than organics to encouraging farmers, who lack confidence and competence in environmental

⁸⁷⁹ S Anderson et al, 'Incorporating Biodiversity into Environmental Management Systems for Victorian Agriculture: A Discussion Paper on Developing a Methodology for Linking Performance Standards and Management Systems' (Parks, Flora and Fauna Division, Department of Natural Resources & Environment (Vic), 2001).

management, to set goals, make use of feedback and self-reflection, gain a sense of control and self-efficacy over a complex and difficult situations, all the while internalizing stewardship norms. These are untested generalizations and exceptions could be expected in both CLM⁸⁸⁰ and organic certification, and both approaches are potentially beneficial to prospective collaborative governance arrangements.

The peer effects of group learning in CLM's workshops, the member support services offered by NASAA and AOL, and the community of practice formed by Australia's 1,700 organic farmers reinforce the self-standard capabilities of vicarious learning, self-reflection and refinement of mental models by providing access to credible role models. The group support and social learning aspects of CLM and organic certification increase the likelihood that pro-environmental social norms will reflect shared (rather than externally imposed) values. New norms of behaviour are introduced in a sympathetic, collegial and non-threatening social environment.

7.2.3. Adopting Stakeholder Expectations in Management

From the perspective of a government considering whether to collaborate with CLM or organic groups (or any non-government program), an important consideration is the extent to which their participants act consistently with government priorities expressed through law and policy. Not all landholders are aware of the laws that apply to them. For supply-chain collaborators, a commitment to compliance with the law can help manage risk, as suppliers caught up in illegality can disrupt smooth supply. Both CLM and organic certification expressly highlight legal compliance as a condition of participation.

CLM requires participants to publically commit to complying with their legal obligations in a written environmental policy, based on ISO requirements. Organic certification commits participants to upholding organic standards in statutory declarations and contracts, and are publically recognized as so doing in their use of the organic certifiers' logos. The act of making the commitment is said to alter the maker's attitude on the topic, by acting on the person's self-perception – in other words, making the commitment alters the way we perceive ourselves, such that we believe: 'I am the sort of person who acts on this topic', which sets in motion a drive towards

⁸⁸⁰ Interviewed CLM participants exhibited high-confidence and high competence, insofar as this could be ascertained in an interaction lasting an hour or two.

consistency: ‘I am the sort of person who honours my commitments’.⁸⁸¹ In addition, public commitment-making provides an entry point for ‘surrogate regulators’ (i.e. non-government public interest advocates, such as NGOs and community groups).⁸⁸²

CLM involves participants using a detailed, interactive database of state and Commonwealth law. This helps landholders identify relevant legislation, and to evaluate their compliance. Participants also document procedures for periodically re-assessing their compliance with legislation, based on ISO requirements. Organic certification embeds legislation and policy in its standards and participants’ management plans, though this function occurs at the organizational level (OISCC, AOL and NASAA) rather than at the landholder level as in the case of CLM.

CLM and organic certification further require that participants attend to two other considerations – biodiversity conservation and animal welfare – which support government and NGO expectations. These are incorporated into management plans with the potential for external audit. In addition, CLM participants must consider how to align their management with the objectives of their regional NRM body. Encompassing environment and animal welfare, CLM and organic certification may help participants respond to demands for ‘ethically’ produced animal products.

CLM and organic certification have some common strategies for assisting landholders align their farm practices with stakeholder expectations – such as management planning, review, and independent auditing – as well as some divergent strategies. The contrasts of the two case studies highlights some of the trade-offs involved in facilitating the development of landholders’ self-standards and pro-sustainability norms, while at the same time capitalizing on stakeholder expectations. Because of its strict standards and high entry threshold, organic certification seems less able to facilitate participation by interested landholders starting at a fairly basic level in terms of personal capacity or the condition of their farms. As mentioned in Chapter 6, this has been highlighted previously as a potential weakness by organic researchers such as Niggli and colleagues.⁸⁸³ For organics to have stronger influence beyond its

⁸⁸¹ Doug McKenzie-Mohr, *Fostering Sustainable Behaviour: An Introduction to Community-Based Social Marketing* (New Society Publishers, 3rd ed, 2011), 46-47.

⁸⁸² Ayres and Braithwaite, above n 78; and Gunningham and Grabosky, above n 79.

⁸⁸³ Niggli et al (2015), above n 538, 8.

relatively small percentage of farmers and farmland, there, perhaps, needs to be greater attention given to getting interested landholders to the entry requirements.

The trade-off is that a high entry threshold and more prescriptive approach have enabled organic production to secure market advantages. Whilst prescriptions and proscriptions may be less conducive to autonomous decision-making and self-determination, they may be favoured by external stakeholders, such as retailers, consumers, environmentalists, animal welfare advocates and governments. Arguably, prescriptions and proscriptions are easier to market and may superficially appear to be more transparent to a casual observer than a more process-oriented standard; it is probably easier to market a claim that ‘This product has been produced without the use of synthetically manufactured pesticides, herbicides, or GMOs’, than a claim that ‘This product has been produced under a system consistent with the development of self-standards, in which the farmer is required to thoroughly assess the risk of environmental and animal welfare impacts’.

7.2.4. Preparing for the Future

Based upon existing trajectories, four developments can be expected to affect natural resource governance in the future:

- Public opinion polls seem to suggest that there is a growing expectation by consumers that businesses must prove achievement of important social and environmental outcomes in the delivery of their business, as well as a growing cynicism about the claims businesses makes in this regard.⁸⁸⁴
- The discussion on the natural resource context in Chapter 1 suggested that, given the budgetary position of government in the long-term,⁸⁸⁵ it would be risky to expect that the Australian Government will provide general, adequate, and sustained good stewardship payment to farmers.
- In addition, whatever funds are available may be subjected to more onerous accountability measures, given the admonishment the Commonwealth

⁸⁸⁴ Australian School of Business, 'Marketing Mayhem: Re-evaluating the Power of Green Persuasion' (2010) <<http://web.archive.org/web/20130513005223/http://knowledge.asb.unsw.edu.au/article.cfm?articleid=1255>>; Mobium Group, 'Living LOHAS - Lifestyles of Health and Sustainability in Australia - Overview - Consumer Trends report' (2007).

⁸⁸⁵ Australian Government, above n 10.

Government has endured from the public auditor in its evaluation of the Commonwealth's administration of environmental grants.⁸⁸⁶

- The growth of VSPs, brands and standards creates the potential for deception and 'greenwash' and unscrupulous operators are likely to attempt to manipulate this growing demand for good outcomes whilst avoiding the costs of delivering the same.⁸⁸⁷

The combined effect of this could be higher expectations about the delivery of public interest outcomes, a relatively scarce pool of public funds to incentivize and compensate landholders for their efforts, more onerous requirements to access them, but increased demand for systems with demonstrable integrity.

CLM and organic certification may help prepare landholders to meet this future. The systems have integrity measures and a foundation for providing measurement-based evaluation of progress. Organic certification requires farmers to develop an extensive system of documentation and record keeping, and CLM requires participants to document procedures for identifying and periodically re-assessing relevant legislation, as well as documenting the actual results of periodic re-assessment. The process of planning and review may heighten landholders' alertness to changing social and legal expectations. The willingness of CLM and organic certification participants to expose themselves to outside review would bode well for participating farmers and/or ALMG, AOL and NASAA being potential partners in a collaborative governance model, because it shows a willingness to take seriously issues of transparency, accountability and openness to the expectations of a wide range of stakeholders.

7.2.5. Potential Benefits of Partnerships with CLM and Organic Certification

There is a chicken-and-egg dilemma at work in this area of study: farmers will not expend time, money and effort on demonstration if there is no reward,⁸⁸⁸ and external stakeholders will not promise a reward unless there is demonstration.⁸⁸⁹ The lack of market advantage is an ongoing challenge for everyone interested in how good

⁸⁸⁶ Australian National Audit Office, 'Regional Delivery Model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality (Audit Report No 21 2007–08, 2008) summary [12]-[15] and [28].

⁸⁸⁷ Harbaugh, Maxwell and Roussillon, above n 162.

⁸⁸⁸ Gordon.

⁸⁸⁹ Kirsty.

managers can be better recompensed for responsible management above and beyond their legal obligations.⁸⁹⁰ Unless at least one of the governance actors is prepared to take a risk and make the first move out of the chicken-and-egg scenario, then no program aiming to link citizen-consumers to environmentally focussed producers will ever get off the ground. Participants in voluntary stewardship programs such as CLM and organic certification are showing a way out of the stalemate by a preparedness to participate in the programs and demonstrate outcomes. This was acknowledged even by non-participants.⁸⁹¹

The balance of the evidence suggests that prospective partners and investors in governance collaborations can expect that CLM participants and certified organic farmers generally:

1. Are aware of their legal and policy obligations, at least to the extent that these are reflected in the CLM and organic certification systems;
2. Have a strong degree of self-efficacy and a detailed awareness of the sustainability and animal welfare issues within their enterprise and the options that they have to address them;
3. Have established clear objectives in an enterprise-wide stewardship plan for managing environmental and animal welfare risks associated with their operations within the limits of feasibility, and are actively implementing and adjusting their plans;
4. Are investing time and money in pursuit of these stewardship objectives, and are achieving stewardship outcomes, consistent with their plans.

Government and private organizations could reasonably anticipate that their support and investment in a prospective governance partnership would be leveraged in five ways:

1. Legal and policy expectations will be known and addressed by CLM and certified organic landholders;
2. The partner/investor will have immediate access to credible information about the landscape characteristics, stewardship issues and planned actions (through

⁸⁹⁰ Tennent and Lockie, above n 136, 17.

⁸⁹¹ Ben, Gordon.

the management plans), and data about changes to landscape conditions over time (through the review process);

3. Participants in CLM and organic certification will be receptive to investing in good stewardship activities, complying with existing legal and policy expectations, and adapting to changing expectations as part of their normal operations. The partner/investor can expect a less resistant attitude to a public good/sustainability rationale for farming;
4. After a specific investment is completed, implementation of pro-sustainability activities is more likely to continue on a participant's property, protecting the value from the investment; and
5. Oversight for the total stewardship program for the enterprise is available, via a credible ISO/IFOAM-based independent review of implementation.

7.3. On-Going Challenges

Despite these positive findings on participation, there remain on-going challenges in using VSPs as a tool of governance. The implications from this study suggest five areas of tension that may impede stakeholders from capitalizing on the potential value of VSPs in co-regulatory arrangements, namely: conflicting worldviews between farmers and stakeholders; misalignment of external stakeholder and VSP interests; a quality versus quantity debate; a wide-but-general versus deep-but-narrow debate around coverage of issues; a tension between rewarding good performance and additionality, and valuing the public interest benefits of experimentation and innovation.

7.3.1. Conflicting Worldviews

For a collaboration between the various parties to work, there needs to be a space in which the parties can negotiate, compromise, or at least identify overlaps of interest. It will be a significant challenge to convince non-participant farmers that such collaboration makes sense. Worldviews on some contentious issues diverge widely between even participant landholders and potential collaborators. This is the case in a range of public interest issues, but was perhaps most starkly exemplified by attitudes about animal welfare.

7.3.2. Strategic Misalignment

The study revealed that including non-government civil society stakeholders, such as environmental and animal welfare NGOs, in a co-regulatory arrangement is complex. They are more forthcoming with moral support than they are with material support or formal public endorsement, even for VSPs that they admire. The desire of public interest NGOs to join collaborative arrangements is not a certainty, and effective ways of capitalizing on the value they could bring to environmental and animal welfare governance needs to be informed by an understanding of their resource constraints and the position they see for themselves in the political discourse.

7.3.3. Quantity vs Quality

An unexpected result of this research was that some external stakeholders favour programs with a low-bar/high-numbers approach over programs that set high standards and likely attract a lower number of participants. If such a view were widely representative of the approach of environmental and animal welfare NGOs, then it suggests they regard the best strategy for their organizations is to direct their attention and material support to the poor-performing end of the farming community (in an environmental sense), which tends to disadvantage high-performing landholders and programs in which they participate.

7.3.4. Coverage of issues – deep or wide?

A parallel debate concerns whether VSPs should adopt wide-but-general or deep-but-narrow attention to specific issues. For every sustainability parameter, there is likely to be subject matter experts who believe a VSP deals with their speciality too lightly. Certainly, the CLM and the organic standards deal with topics such as water management at a fairly general and superficial level, compared with specialist standards, such as the *Water Stewardship Standard*,⁸⁹² and there are likely to be other specialist programs that focus more deeply on biodiversity, threatened species conservation, animal welfare, or greenhouse gas reductions.

But the capacity of farmers and citizens to absorb and apply deep attention to every ethical or public interest dimensions in the short-term is not unlimited, and it remains a rational enough strategy for the moment for CLM and organic certification to aim to

⁸⁹² Alliance for Water Stewardship, *The AWS International Water Stewardship Standard* (2013).

bring both farmers and stakeholders along in the sustainability journey across a wide-but-general range of issues. They already make allowance for a wider range and greater depth of environmental and animal welfare parameters than required by law. Any additional parameter needs to be resourced. CLM and organic certification both have theoretical scope to accommodate requests for additional parameters or additional monitoring and verification as long as the requester is prepared to find funds to facilitate it.

7.3.5. Rewarding Performance vs Additionality

The results reveal a tension between two important public policy principles. On the one hand is the principle that we should reward good performers and sanction bad performers. On the other hand, there is the additionality argument; that is, public sector support should only be directed towards VSPs if society gets more value from farmers' participation in them than it would have got without them. This can lead to a dismissive attitude to the work of high-performing farmers, along the lines of 'they would have done it anyway'.

7.3.6. Valuing Innovation

Läpple notes that organic farming is information-intensive, requiring considerable learning and alteration of farming systems.⁸⁹³ Furthermore, it can be personally draining to have to take the journey of radical re-assessment of one's farming system alone and in secret,⁸⁹⁴ or to be regarded by one's local community as 'a hippy or a drop-kick',⁸⁹⁵ or on the 'lunatic fringe'.⁸⁹⁶ Lutikholt observes that the costs of sustainable production, including the costs associated with integrity measures (such as auditing and certification) are not only transaction costs for farmers but also for consumers.⁸⁹⁷

This study argues that the public interest calculation ought to take into account that stewardship schemes and farmers' participation in them are forms of experimentation and innovation. The experimenters and innovators – the operators of the schemes, the

⁸⁹³ Läpple, above n 546, 329.

⁸⁹⁴ Dominic.

⁸⁹⁵ Carl.

⁸⁹⁶ Oliver.

⁸⁹⁷ Lutikholt, above n 528, 356.

farmers who join, and the customers who support them – bear the costs of designing, managing, maintaining and participating in the schemes. Farmers, policymakers, markets and consumers not involved in these processes do not bear these costs.⁸⁹⁸ If the experiment is successful, then non-participants can become participants at little cost, knowing the benefits with more certainty than the original participants did. However, unless the original experiment can be initiated and maintained in its prototype phase, then its long-term benefits cannot be assured.

7.4. Some Reflections on the Conceptual Framework

The conceptual framework is an idealized model and necessarily simplistic; it represents a view of the exchange mechanism by which VSP facilitate sustained mutual benefits to the environment, landholders, external stakeholders and society as a whole. In the framework, causation is neat and logical, whereas the real world is messier and causation is difficult to attribute to any one intervention.

The framework assumes that external stakeholders will not pay for the benefits provided by participants' management unless there is demonstration by participants, and conversely assumes they will pay if there is demonstration. Of course this is not the reality: 'Western consumers are generally supportive of the environment – so long as they don't have to do anything about it'.⁸⁹⁹

The framework focuses on the individual farmer and does not explicitly address mechanisms for collective action and shared responsibility amongst farmers. Similarly, it does not speak to the need for an individual to be embedded in a viable community. Additionally, the framework relies on the agency of the individual farmer and assumes that Elements 1, 2, 3, 6 and 7 are within the farmer's managerial control,

⁸⁹⁸ Nic Lampkin and Stephan Dabbert, 'Organic Farming: Can Policy and Markets Mix?' (Paper presented at the 'Reform, Trade and Sustainability', Agra-Europe Outlook, London, 2003), 6.

⁸⁹⁹ John Rice and Nigel Martin, 'What Our Love Affair with Coffee Pods Reveals about our Values' (2014) *The Conversation* <<http://theconversation.com/what-our-love-affair-with-coffee-pods-reveals-about-our-values-30068>>. See also E Tee, A-M Boland and A Medhurst, 'Voluntary Adoption of Environmental Management Systems in the Australian Wine and Grape Industry Depends on Understanding Stakeholder Objectives and Drivers' (2007) 47 *Australian Journal of Experimental Agriculture* 273; John Cary, Suku Bhaskaran and Michael Polonsky, 'Green Marketing and EMS: Assessing Potential Consumer Influence on EMS Development in Fresh Food Chains' (Report No 04/175, RIRDC, 2004).

without critiquing the powerful economic and cultural drivers that mean landholders have less control than they (or we) think they do.

Despite these limitations, the framework works as an organizing tool for bounding the investigation. Each of the nine elements provides a broad direction for interview and survey questions, and the research design was flexible enough to capture farmers' experiences that deviated from the model.

The model embedded in the framework was accurate for some participants, some non-participants and some external stakeholders, but it was not universally accurate. For landholders (especially non-participants) who are disappointed by the lack of market rewards, the framework works accurately, since it anticipates that landholders will not go to the trouble of participation unless a reward perceived to be adequate is received. Some of the comments of the interviewed external stakeholders revealed they also can see the logic of rewarding landholders for demonstrated good practice, and they could understand that it would be difficult for landholders to sustain good practice without adequate resources.

However, in some instances the framework does not accurately reflect the intentions of the various parties. In the case of external stakeholders, the model assumes external stakeholders would be willing to recognize and direct a flow of benefits to high performing landholders in order to activate the virtuous cycle embedded in the model. However, this model did not resonate with some external stakeholders, who do not see recognition as part of their role.

The framework seems accurate to the extent that some non-participants had a 'wait-and-see' attitude; that is, they would like recognition of their environmental efforts and might join CLM when the flow of benefits becomes obvious. But the framework is inaccurate to the extent that some non-participants are simply not interested in recognition or are ambivalent about it or regard the concept of recognition by and a flow of benefits from external stakeholders as fanciful.

For some CLM participants, the framework was overly simplistic. While it assumes a flow of benefits is critical, CLM participants tend to be less hesitant about making a first move in order to break the impasse between action and reward. Most CLM participants tend also to be less focussed on CLM as a mechanism for realizing price

premiums and more focussed on a range of perceived benefits from CLM and on how CLM works as just one tool integrated with a suite of initiatives. Most CLM participants were upbeat about participation *despite* the lack of market recognition and advantages, which suggests the framework does not accurately reflect their experience. It is also possible that the direct flow of benefits for landholders from managing impacts and maintaining or improving outcomes (the dotted line between Elements 3 and 9) is stronger than assumed by the framework. And it remains an ongoing project to properly quantify the long-term private benefits of many land regenerative practices and biodiversity conservation.

For organic certification, the framework exhibited similar accuracies and inaccuracies. For the FOGG growers, the model was accurate to the extent that organic certification did provide them with a clear business advantage, and they were happy to continue following the *NASAA Standard* whilst that advantage flowed. However, for Carl and Dominic, the ACO certified fruit and vegetable producers, the framework did not seem to cover the full range of their motivations, such as the alignment of organic practice with their farming philosophies. The agronomic features of organic farming and the potential health benefits in their family farming contexts seemed as influential as market advantages.

CHAPTER 8: CONCLUSION & RECOMMENDATIONS

This study investigated whether farmers' participation in voluntary stewardship programs contributes to collaborative natural resource governance in rural Australia. The aim was to make some empirical headway into a subject matter to which great hopes are attached, but whose promise is mostly based on theory, wishful thinking or applications that may not be relevant to rural natural resources in Australia. Given limited resources, the study's objectives are necessarily constrained and the findings preliminary; continued work is needed to match the expected growth of collaborative governance and private regulation of agriculture and food production. However, within these limitations, the study is significant for three reasons:

1. It has attempted to overcome the reticence of environmental law and governance scholarship to a more evaluative and empirical approach to research on implementation of governance measures, by applying an integrated and disciplined research methodology;
2. It has attempted to begin filling the critical gaps in understanding of collaborative natural resource governance in rural Australia through empirical investigation; and
3. It does affirm that VSPs have the potential to make some important contributions to natural resource governance in partnership with other government and non-government actors. To the author's knowledge, it is the first study in Australia to apply the kinds of methodological and empirical approaches used in this study to investigate and affirm the collaborative governance potential of the selected VSPs.

This chapter attempts to synthesize the whole learning experience of the study, by charting the progress of the research in four parts:

1. The background to the study, including the challenging context of governance and management of Australia's rural natural resources, and the critical need for more empirical validation of collaborative governance as a response to these challenges.
2. The development of concepts and methods for conducting an empirical evaluation on one aspect of the larger collaborative governance story, namely

the potential of VSPs for farmers to add value to co-regulation of natural resources.

3. Public policy implications of the findings; and
4. Some suggested directions for policy development (including a strawman proposal to stimulate discussion) and recommendations for future research.

8.1. Background

The study's objectives were informed by a review of the literature in Chapter 1, which outlined the difficulties for the maintaining, improving and governing of natural resource condition in rural Australia. Farmers and other natural resource managers are faced with complex, self-perpetuating and dynamic biophysical problems, which are resistant to simple solutions and which require sustained collective effort over the long term. The reality of rural demography means that rural natural resource management relies on a small, highly dispersed population with insufficient resources to solve or manage environmental problems.

Governments' ability to govern rural natural resources is stymied by the difficulty of supervising huge areas, numerous landholders with a range of attitudes to government authority (from amenable to hostile), and multiple tenures and property rights, each allowing a different degree of authority to government to insist on a particular view of 'good' land management. The long-term budgetary outlook for government will impede its ability to use traditional forms of public law to regulate, supervise and enforce land management practices, as well as its ability to provide practical extension assistance and funds for environmental maintenance and remediation, or to pay land managers for environmental services.

Chapter 1 highlighted the crises of confidence experienced by both traditional, government-centric modes of governance, and non-government voluntary and self-regulatory modes. This has led to a tendency to valorize collaborative governance as a 'middle-ground' of governance that theoretically hybridizes the best of both worlds – government and non-government – and balances the weakness of one with the strengths of the other. For better or worse, collaborative governance has gained much currency as a governance innovation. However, it remains a relatively recent concept in rural natural resource governance. It retains an experimental character and, so far,

there has been a paucity of empirical assessment of what collaborative arrangements work, when and why.

The lack of empirical validation is a critical gap. Collaborative natural resource governance experiments are already underway in rural Australia, but arguably these experiments are progressing well ahead of our understanding of the implications of collaborative governance. Many of the advantages and disadvantages of collaborative governance that have been explored in research are theoretical or have not been adequately tested in the rural Australian context. Many of the contexts in which voluntary and co-regulatory approaches are likely to succeed are noticeably absent in rural Australia. Much of the theoretical and empirical research on co-regulation relates to large, industrial firms with corporate structures, and it is uncertain how this literature applies to the smaller scales and substantially family-oriented structures of Australian farms.

On the whole, the promise of collaborative natural resource governance in rural Australia remains under-examined. Consequently, its practical efficacy may be underestimated or over-hyped. Without some empirical evaluation of collaborative experiments, it will be difficult for the parties with a stake in the good management of rural natural resources – including farmers, environmental organizations, governments, businesses along the agricultural supply chain, and non-farming citizens – to make informed judgements about collaborative governance, including decisions about whether to embrace or reject involvement in collaborative governance arrangements.

This study takes up the challenge to begin plugging this critical gap and attempt a preliminary investigation of some basic facets of collaborative governance. As such, it is neither the whole story nor the end of the story – it is a start and a part of a bigger effort to ground the risks and opportunities of hybrid forms governance with some empirical content. Collaborative governance is a wide umbrella term for models, arrangements and instruments too broad, numerous and ambitious for one researcher to comprehensively investigate in one project. Therefore, this study's scope was limited to farmers' participation in VSPs as a potential component of a co-regulatory model of collaborative governance.

8.2. Concepts and Methods for Empirical Evaluation

Chapter 2 developed a framework to conceptualize how a system of collaborative governance involving farmers, VSPs and other players could work to achieve lasting maintenance and remediation of the natural resources used and affected by farming. The framework outlined nine elements in an idealized model of the operation of farmers' participation in a hypothetical co-regulatory arrangement incorporating VSPs and other government and/or non-government stakeholders and instruments. This is similar to the model trialled in Queensland's *Accreditation Framework for Farm Management System (FMS) Programs*. The framework posits that achievement of the elements will activate a virtuous cycle that mobilizes a flow of resources from non-farmers to farmers in recognition of the public benefits of farmers' good land management.

The conceptual framework hypothesizes that any process that facilitates achievement of the elements of the framework contributes to natural resource management – a public interest concern – and is a potentially useful inclusion in a collaborative governance arrangement. Furthermore, those who operate the process – participating farmers, and other organizations and people who support participation – are potentially useful partners with other governance actors – governments, markets, NGOs, and others – in a co-regulatory or other co-governance arrangement.

Chapter 3 highlighted some factors that make empirical evaluation of the implementation of natural resource governance singularly difficult. Environmental law and governance scholarship dealing with implementation does not have the benefit of a commonly accepted and comprehensive research paradigm. Easily measured parameters can be over-emphasized and those hard to measure – such as the effects of learning, behaviour change and social or ecological outcomes – can be under-emphasized. Disentangling dynamic and deeply entwined complexities of context, cause and effect is especially challenging.

Despite these difficulties, Chapter 3 described how the elements of the conceptual framework and its associated research questions were employed to investigate real-life problems using empirical research methods within an integrated research methodology. This comprised a case study approach investigating three working VSPs (CLM, and two organic certification cases – ACO and FOGG). Twenty-three

landholders on 16 properties in the rural Australia were interviewed and surveyed in late 2013 and early 2014. All were identified as being good land managers. A CLM trainer was interviewed on the inner workings of CLM, and seven other stakeholders from government, civil society and academia were interviewed to assess the extent that participation in CLM and organic certification facilitates farmers' understanding of external points of view. The standards that guided participation for CLM, ACO and FOGG participants were reviewed in detail.

8.3. Public Policy Implications

Due to the small, purposefully selected sample of interviewees, no statistical inferences have been drawn, and given the paucity of previous empirical evaluation, limitations of resources and the complex problems of causation, the results of this study must be regarded as preliminary indications only, subject to further investigation. However, within these limitations, the preliminary results point to four implications that respond to the material concerns of government:

1. The preliminary results suggest that participation in CLM and organic certification align well with the criteria outlined in the conceptual framework and would likely make a valuable contribution to collaborative natural resource governance in rural Australia. Broadly speaking, the VSPs reinforce public interest values and norms, and guide participants towards implementing public interest outcomes. Participants have well-developed management plans that are subject to regular internal and independent external review. They are likely to invest time and money in the implementation of their plans, and are generally well-disposed to engaging with the concerns of external stakeholders and opening their operations to outside scrutiny. On balance, there does appear to be some policy relevant differences between participants and non-participants in terms of their willingness to engage with the concerns of external stakeholders and willingness to find a variety of ways to make participation in VSPs work to the advantage of their businesses.
2. The psychological and emotional capacity building of landholders is an underrated factor in sustainable resource use in rural Australia. The study shows how the design of VSPs can accommodate and support the development of important behavioural and motivational drivers. Traditional law and regulation may not have the agility to accommodate these factors to the same degree, which

suggests there could be advantages for traditional governance to join with non-traditional forms in hybrid systems.

3. Farmers' management of their impacts on natural resources and animal's welfare, as well as their achievement of actual outcomes in this regard are direct interests of government, as public interest concerns and as contentious political issues. It would be expected that successful participation in these VSPs would make it smoother for regulators to implement environmental and animal welfare protections. In a fiscal environment where budgetary constraints will likely impede the ability of government to fund environmental amelioration and provide regulatory oversight, mechanisms that turn farmers' attention to capturing benefits, resources and rewards from the widest range of markets and non-government sources should be attractive to governments.
4. VSPs such as CLM and organic certification have databases with a wealth of information on the state of natural resource condition as well as the nature and value of improvements in condition attributable to farmers' actions. Though these databases are not necessarily designed to collect, collate and report on data in forms that can be used by policymakers, potentially they could be, subject to allaying landholders' legitimate concerns about privacy and exposure of inadvertent breaches of law and policy. This could go some way to alleviating the historically patchy performance of publicly funded environmental programs to account for spending against outcomes.

8.4. Suggested Policy Directions & Recommendations for Future Research

This study was a small-scale trial of the efficacy of VSPs as partners in co-regulation and more work would need to occur to develop the institutional arrangements to capitalize on the possible benefits. This chapter outlines a strawman proposal comprising three institutionalization options for government:

Option 1: The government oversees the development of a set of guidelines for sustainability claims about agricultural systems.

Option 2: The government oversees a recognition framework for accrediting VSPs that meet a set of minimum standards.

Option 3: The government uses the accreditation framework as a means of prioritizing regulatory concessions and advantages.

Each option could be developed as a stand-alone instrument, but there is a strong interrelationship among them, such that they could comprise three steps in a larger process of institutionalization. Each of these will be explored in more detail below. The options are expected to be relevant to five audience clusters:

1. For governments, to co-opt other governance partners for improved natural resource management;
2. For consumers and markets, to increase confidence that a VSP is credible, given the confusion and mistrust that might ensue from the proliferation of so-called green brands and labels;
3. For VSPs and civil society groups, to enable the concerned citizenry to distinguish VSPs in the market place;
4. For farmers, to provide a pathway for recognition of environmental achievements; and
5. For industry, to protect the 'clean-and-green' brand of Australian farm produce.

Ideas for future research are integrated in the discussion of options below. Fortunately, there is much valuable previous work that could be revisited to model the options, and a significant part of a future research program would be harvesting and synthesizing the learning from prior research and practical experience.⁹⁰⁰

8.4.1. Option 1 – Guideline for Sustainability Claims about Agricultural Systems

This option could be modelled on the process the Commonwealth Government used in 2008-09 in relation to claims about voluntary greenhouse gas offset schemes. In that instance, the Australian Consumer and Competition Commission (ACCC) published a guideline called *Carbon Claims and the Trade Practices Act*,⁹⁰¹ as a part of its

⁹⁰⁰ Including further harvesting of insights from CLM and organic certification; see, eg, Tony Gleeson, 'A Voluntary Australian Land Management Certification System' (RIRDC, 2006); Alexandra and May, above n 125.

⁹⁰¹ This guide is no longer available from ACCC. An ACCC press release describing the guidelines can be accessed at: ACCC, ACCC Addresses Carbon Claims (27 June 2008) <<https://www.accc.gov.au/media-release/accc-addresses-carbon-claims>>. A similar guide was

administration of the *Australian Consumer Law*, particularly the provisions relating to misleading or deceptive conduct.⁹⁰² The steps for developing a similar guideline for claims about the sustainability of farming systems are as follows.

Firstly, the ACCC would develop an issues paper for circulation to interested stakeholders, such as farmers and farm industry groups, VSPs, consumer groups, environmental and animal welfare NGOs, public regulators, and supply chain aggregators such as retailers and wholesalers. The ACCC would invite responses from these stakeholders to ensure there was a demand for a guideline and to garner input into the guideline's design. This would be accompanied by intensive consultation with stakeholders to determine the extent to which the market sees a need for a government-endorsed process for sorting credible VSPs from greenwash varieties.⁹⁰³

If the consultation process revealed a need for the guideline, then the next steps would be development and publication. The government in this case would play a convening and co-ordinating role and the aim would be to develop a consensus position on a set of minimum criteria for claims about farm sustainability.

The audience for the guideline would depend on whether a particular farming system interfaces with consumers directly. For example, the organic systems that were investigated in this study – ACO and NCO – have certification logos that appear at the point of sale, which end-consumers can use in their purchasing decisions. In this case, the guideline could have appeal to end-consumers. For a system that does not directly interface with end-consumers, a more relevant audience for the guideline would be wholesalers and retailers, such as large supermarket chains eager to reduce the reputational risk associated with stocking products produced under greenwash systems. The guideline could be similarly attractive to banks and insurers as a shorthand way of assessing environmental risks on farms.

produced by the New Zealand Government: New Zealand Government, *Guidelines for Carbon Claims - Fair Trading Act 1986* (2009).

⁹⁰² *Australian Consumer Law*, s 18, found in sch 2 of the *Competition and Consumer Act 2010* (Cth) and formerly s 52 of the *Trade Practices Act 1974* (Cth): 'A person must not, in trade or commerce, engage in conduct that is misleading or deceptive or is likely to mislead or deceive'.

⁹⁰³ This step could also gather market intelligence for Options 2 and 3, for example, on the extent to which major supermarket chains would support recognized VSPs at the supermarket shelf and the funding of the operations of the accreditation framework.

In this option, the role of government would stop at convening the stakeholders and commissioning the guideline. The guideline would not constitute a legislative or regulatory document, nor would it constitute a definitive ruling on misleading or deceptive conduct, which only a court can determine. It would be left to surrogate regulators to expand its application. Thus, an additional audience would be organizations that could perform surrogate regulatory roles, such as media, environmental and animal welfare NGOs, and consumer associations. Such groups could use the guideline to publish ratings lists or score cards for various VSPs.

8.4.2. Option 2: Recognition Framework

This option builds on Option 1 by allowing VSPs to nominate for inclusion in a recognition framework. In this option, the Commonwealth Government would oversee a national accreditation process for VSPs that meet minimum sustainability criteria. Once again, there are a number of previous initiatives which are likely to prove valuable in this regard; for example the work of Australia 21 on the development of a national certification scheme for agri-environmental management, which could be revisited and harvested for insights.⁹⁰⁴

In this option, the government would convene the stakeholders, oversee the recognition scheme, accredit VSPs, and licence the use of a special brand or logo for accredited programs. This option plays a similar role as the guideline in Option 1, except that in this case, rather than being left to surrogate regulators, the benchmarking and filtering of claims is facilitated with public funds, enabling the potential audiences to have ready access to a list of VSPs already assessed by an independent process as having met the guidelines.

It is envisaged that government would again play a co-ordinating and convening role in the development of the framework consistent with the collaborative governance paradigm ('steering, not rowing'). The framework would outline the minimum integrity measures required for accreditation, which would enable the display of a publically recognized stewardship brand that could be used and supported by markets,

⁹⁰⁴ Philippa Rowland, *Developing a National Certification Process for Environmental Management in Australian Agriculture* (RIRDC, 2005). See also Australian Government, *Australia's National Framework for Environmental Management Systems in Agriculture* (Natural Resource Management Ministerial Council, 2002).

philanthropies and other non-government stakeholders. The basic features that would need to be developed in a recognition framework include the following:

1. Minimum Recognition Criteria

The recognition framework would require minimum criteria for VSP systems, standards, rules of participation, and opportunities for learning. As for Option 1, it is envisaged that the government would be engaged to convene and co-ordinate a consensus-building process amongst interested stakeholders to determine the attributes that a candidate for accreditation needs to possess at a minimum.

This study provides some insights on the attributes that might be relevant in this regard, although, at the end of the day, these would be for the consensus-building process to determine. Possible matters of relevance include a process for assessing a VSP's consistency with law, policy, stakeholder expectations and social licence. Minimum criteria could include environmental and animal welfare planning and risk assessment processes, as well as either ambitious rule-based standards or processes consistent with the development of self-standards and the internalization of stewardship norms. Process-based systems for enabling landholders to better manage impacts and performance-based systems for achieving environmental, animal welfare or other public interest outcomes are also warranted. Also important are opportunities to understand external stakeholders' expectations.

Matters relating to this basic feature of the recognition framework that could be the subject of future research include:

- On-ground verification of the implementation of VSP participants' management plan, and of the associated environmental and animal welfare outcomes;
- Distinguishing causation from correlation, in terms of whether participation in VSPs makes better environmental and animal welfare performers or whether better performers are more attracted to participation;
- Assessing the capacity for participation in VSPs to change behaviours of poor performing land managers and animal producers (in contrast to rewarding the achievements of good performers), which was the objective of some interviewed stakeholders.

- Exploration of other case studies, particularly other styles of VSPs, including the experience of leading farm sector schemes, such as DairySAT.⁹⁰⁵
- Understanding the capacity of VSPs in co-regulatory arrangements to achieve *collective* action on a landscape scale.

Devising assessment criteria for farm sustainability schemes is not a novel undertaking, and the consensus-building process would have the benefit of other initiatives, such as the SAFA process developed by the United Nations' Food and Agriculture Organization (FAO).⁹⁰⁶ SAFA has a set of nested components, shown in Figure 8.1. In summary, there are four broad sustainability 'dimensions' covered by SAFA: good governance, environmental integrity (which includes animal welfare considerations), economic resilience and social wellbeing. Around each of the four dimensions are 21 themes (shaded in the figure). Each theme is further supported by 58 sub-themes (also shown in the figure), and 116 indicators.

There are at least two possible benefits to making use of previous work such as SAFA. Firstly, it would save costs to take advantage of the effort that has gone into preparing SAFA (including its consultation processes) and, secondly, there may be some benefit for the consensus-building process to be informed by contemporary international developments such as SAFA, given the export character of Australian farm production. Future research could further explore the efficacy of processes such as SAFA in assessing sustainable framing systems in Australia.

⁹⁰⁵ Dairy Australia, *Dairying for Tomorrow - DairySAT - A Self-assessment Tool to Improve Productivity and Environmental Outcomes on Your Farm* (2010).

⁹⁰⁶ FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) Tool - User Manual* (Version 2.2.40, 2014); FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) - Guidelines* (version 3.0, 2013); FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) – Indicators* (2013).

GOOD GOVERNANCE					
Corporate Ethics	Mission Statement			Due Diligence	
Accountability	Holistic Audits		Responsibility	Transparency	
Participation	Stakeholder Dialogue	Grievance Procedures		Conflict Resolution	
Rule of Law	Legitimacy	Remedy, Restoration & Prevention		Civic Responsibility	Resource Appropriation
Holistic Management	Sustainability Management Plan			Full-Cost Accounting	
ENVIRONMENTAL INTEGRITY					
Atmosphere	Greenhouse Gases			Air Quality	
Water	Water Withdrawal			Water Quality	
Land	Soil Quality			Land Degradation	
Biodiversity	Ecosystem Diversity		Species Diversity	Genetic Diversity	
Materials & Energy	Material Use	Energy Use		Waste Reduction & Disposal	
Animal Welfare	Animal Health			Freedom from Stress	
ECONOMIC RESILIENCE					
Investment	Internal Investment		Community Investment	Long-Ranging Investment	Profitability
Vulnerability	Stability of Production	Stability of Supply	Stability of Market	Liquidity	Risk Management
Product Quality & Information	Food Safety		Food Quality	Product Information	
Local Economy	Value Creation			Local Procurement	
SOCIAL WELL-BEING					
Decent Livelihood	Quality of Life	Capacity Development		Fair Access to Means of Production	
Fair Trading Practices	Responsible Buyers			Rights of Suppliers	
Labour Rights	Employment Relations	Forced Labour	Child Labour	Freedom of Association & Right to Bargaining	
Equity	Non Discrimination	Gender Equality		Support to Vulnerable People	
Human Safety & Health	Workplace Safety and Health Provisions			Public Health	
Cultural Diversity	Indigenous Knowledge			Food Sovereignty	

Figure 8.1: SAFA dimensions, themes, and sub-themes
 (Source: SAFA Guidelines (version 3.0) (FAO 2013, 77))

2. Demonstration mechanism and integrity measures

Given the emphasis in this study of not only managing impacts and achieving outcomes but also *demonstrating* the same, demonstration and the integrity of verification would be an important component of the recognition framework. This study focussed on VSPs with certification processes and independent auditing, but

a recognition framework could encompass alternative assurance processes such as community supported agriculture (CSA) or participatory guarantee systems (PGS).

An important research endeavour for furthering this aspect of the framework is integrating performance standards with demonstration measures. Once again, there is prior experience to harvest in this regard; for example, the generic environmental stewardship system (ESS) proposed by Andrew and colleagues for the Murray Darling Basin Commission (MDBC),⁹⁰⁷ summarized in Figure 8.2.

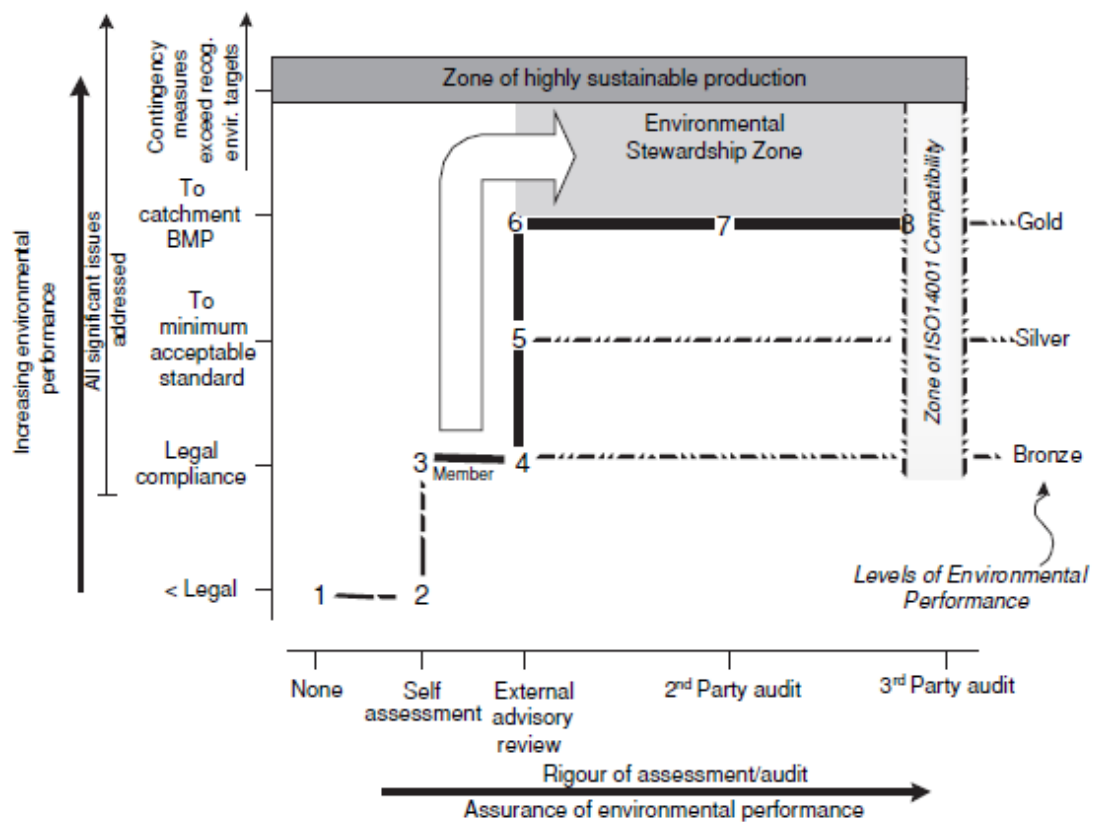


Figure 8.2: Recognition model for environmental stewardship combining environmental performance and auditing rigour

(Source: M Andrews et al 2007, 249)

Andrew et al conceive environmental performance and auditing as independent concepts; in the figure, environmental performance is shown on the vertical axis and auditing on the horizontal. Rising up the vertical axis are four levels of increasing environmental performance, corresponding respectively with minimum legal requirements, a minimum ‘local stewardship standard’, the standard necessary

⁹⁰⁷ M Andrew et al, 'The Environmental Stewardship System (ESS): A Generic System for Assuring Rural Environmental Performance' (2007) 47 *Australian Journal of Experimental Agriculture* 245.

to achieve regional NRM/catchment targets, and a standard exceeding these targets. The horizontal axis shows increasing levels of audit rigour, passing through first, second and third party audits respectively. Further research could investigate the integration of this type of schema in a recognition framework.

3. Accreditation

The development of an overarching accreditation system for VSP recognition would benefit from more empirical work on Queensland's experience with its *Accreditation Framework for Farm Management System (FMS) Programs*, discussed in Chapter 1. To date, only Cotton BMP has gained accreditation under that process and a greater understanding of the obstacles for VSP accreditation would aid construction of the proposed recognition framework.

4. Monitoring & Evaluation

The recognition framework should incorporate monitoring and evaluation mechanisms and, once again, previous initiatives can be usefully harvested, such as the ROOFS project in Tasmania,⁹⁰⁸ for insights on establishing baselines, consolidating data across multiple participants' farms, and information sharing between VSPs and public agencies, subject to appropriate landholder permissions and confidentiality agreements. Research would explore the appropriate scales, roles and responsibilities of different governance partners for monitoring; for example, the possibility of monitoring and reporting:

- Localized issues with benefits for farm production at the farmers' cost;
- Specialized issues (e.g. GMO-free status) at beneficiaries' cost; and
- Globalized or higher level public interest issues remote from local concerns (such as greenhouse gas abatement and biodiversity) and the achievement of collective action at a landscape scale at government's cost.

⁹⁰⁸ Saan Ecker, Jacky Williams and Ian Kininmonth, 'Regional Outcomes for OnFarm Sustainability (ROOFS) - Draft Conceptual Model' (Discussion Paper developed for the ROOFS Working Group, 2006).

5. Enforcement/ compliance

The recognition framework would require an allocation of responsibilities for enforcement.⁹⁰⁹ In addition to its convening and co-ordination role, the Commonwealth would add value by helping the framework to navigate WTO trade rules.

8.4.3. Option 3 – Regulatory Concessions and Advantages

Option 2 develops a recognition framework allowing accreditation of VSPs that meet the recognition criteria. The framework would provide interested stakeholders with a list of recognized and accredited VSPs. However, Option 2 does not grant any special concessions or advantages for accredited VSPs. While the list would provide a degree of oversight and filtering of VSPs using a set of published criteria, as for Option 1, it would be left to surrogate regulators, VSPs and participating farmers themselves to make use of the filtering process and capture commercial advantages.

In Option 3, the Commonwealth and/or the states would use the listing in the recognition framework as a way of prioritizing concessions and regulatory advantages for participating farmers and accredited VSPs. Once again, there are previous initiatives that could be modelled or harvested for insights, including the organic export model discussed in Chapter 6 whereby the government accredits specific organizations to certify that produce for export meets standards at least as stringent as a common national standard. The ‘regulatory advantage’ in this case is the opportunity to export farm produce labelled as organic. A similar process could be used in Option 3 for the opportunity to export under a hypothetical national ‘clean-and-green’ brand. Other regulatory advantages that could be explored include:

- Greater recognition of farmers’ membership of specific VSPs in promotion of Australian agriculture internationally and domestically;
- Financial incentives or supports to accredited VSP participants, and the VSPs themselves to improve the program infrastructures, or configuring systems to link participants’ actions to regional or national NRM targets using aggregated data (with appropriate controls and landholder permission);

⁹⁰⁹ For an example of a matrix allocating governance responsibilities, see Table 1.1 in Chapter 1 relating to the hypothetical delegated co-management model for fisheries.

- Recognition of participation in voluntary certification schemes in the prioritization of on-ground investments, recognizing the likelihood of reduced risks to outcomes and of significant co-investment;⁹¹⁰
- Recognition in ‘green procurement’ programs of government agencies; and
- Concessions and exemptions from regulatory processes where these processes and VSP processes effectively align, in the manner of the LWMP exemption under the Queensland *Water Act 2002*, discussed in Chapter 2. Such concessions could include allowance for group reporting and accounting for mandatory regulatory outcomes, whereby VSPs report and account to government on behalf of all participants.

Further research could include the development of alternative pathways for compliance for landholders that decline to participate in accredited schemes, such as Green Dot or the Queensland equivalence framework for LWMPs provide alternative avenues for regulatory compliance.

8.5. Concluding Remarks

This study suggests a need for a policy discussion about how to create a new collaborative governance framework that does properly recognize credible voluntary stewardship programs. The strawman proposal in this chapter is designed to stimulate further discussion on the possibility of institutionalizing the potential benefits of VSPs in governance arrangements. The study does not underestimate the challenge of bringing parties with divergent interests together and reaching a consensus position on sustainability criteria, nor the difficulties in evaluating the effectiveness and credibility of such a framework, nor the limited experience of all stakeholders in creating and operating new forms of partnership. However, these are challenges that can only be met by engaging with them. They are challenges that must be overcome if Australia is to secure the benefits of new models of collaborative governance.

A working instance of a VSP constitutes a space for a range of actors to explore practically the ethical dimensions of sustainability. Such a space should include not

⁹¹⁰ For examples of regulatory advantages for certified organic farmers in the EU, see *Regulation (EU) No 1307/2013*.

only farmers but creates a ‘framework for mindfulness’⁹¹¹ for non-farmers to consider the ethics of consumption. Reaching a consensus on such contested issues and translating the consensus into a workable system that supports good environmental performance is an ongoing project. Part of the value of farmers participating in voluntary stewardship programs is that the programs act as an important laboratory in a larger social experiment. They represent a crucible or space in which the weighty legal and ethical questions can be tested and debated, though not necessarily resolved. This is not a one-way process – of farmers learning how to be better land stewards – it is a two-way process involving non-farmers moving from consumers to citizens, learning to take shared responsibility for the risks of better natural resources management.

⁹¹¹ Phrase used by Louise Luttikholt at IFOAM Organic World Congress, Istanbul 2014.

REFERENCES

A Articles/Books/Reports

ABARE-BRS, 'National Land Use 2005-06 (Version 4) Summary Statistics' (2010)

Aggarwal, R, 'Demutualization and Corporate Governance of Stock Exchanges' (2002) *Journal of Applied Corporate Finance* 15

Aisbett, Emma and Marit Kragt, 'Valuing Ecosystem Services to Agricultural Production to Inform Policy Design: An Introduction - Research Report No. 73' (Environmental Economics Research Hub, Australian National University, 2010)

Alberini, Anna and Kathleen Segerson, 'Assessing Voluntary Programs to Improve Environmental Quality' (2002) 22 *Environmental and Resource Economics* 157

Alexandra, Jason and Rod May, 'Australian Organic Agriculture – Prospects for Growth?' (RIRDC, 2004)

Altieri, Miguel A et al, 'Agroecology and the Design of Climate Change-Resilient Farming Systems' (2015) 35 *Agronomy for Sustainable Development* 869

Andersen, K et al, 'Suicide in Selected Occupations in Queensland: Evidence from the State Suicide Register' (2010) 44(3) *Australian and New Zealand Journal of Psychiatry* 243

Anderson, S et al, 'Incorporating Biodiversity into Environmental Management Systems for Victorian Agriculture: A Discussion Paper on Developing a Methodology for Linking Performance Standards and Management Systems' (Parks, Flora and Fauna Division, Department of Natural Resources & Environment (Vic), 2001)

Andrew, M et al, 'The Environmental Stewardship System (ESS): A Generic System for Assuring Rural Environmental Performance' (2007) 47 *Australian Journal of Experimental Agriculture* 245

Andrews, Peter, *Back from the Brink: How Australia's Landscape Can Be Saved* (ABC Books, 2006).

- Annandale, David, Angus Morrison-Saunders and George Bouma, 'The Impact of Voluntary Environmental Protection Instruments on Company Environmental Performance' (2004) 13 *Business Strategy and the Environment* 1
- Ansell, Chris and Alison Gash, 'Collaborative Governance in Theory and Practice' (2007) 18 *Journal of Public Administration Research and Theory* 543
- Arbenz, Markus, 'Moving Toward Organic 3.0' in Helga Willer and Julia Lernoud (eds), *The World of Organic Agriculture: Statistics and Emerging Trends 2015* (FiBL and IFOAM, 2015) 272
- Argabright, Karen, Jerry McGuire and Jeff King, 'Extension Through a New Lens: Creativity and Innovation Now and for the Future' (2012) 50(2) *Journal of Extension* 1
- Australian Bureau of Statistics, *4102.0 - Australian Social Trends, Dec 2012 - Australian Farming and Farmers*
- Australian Bureau of Statistics, *Australian Historical Population Statistics, 2014 (Release No. 3105.0.65.001) - Population distribution tables*
- Australian Centre for Agricultural Health & Safety, 'Guidance Note Number 13 - Farm Chemicals' (RIRDC,
- Australian Communications & Media Authority, 'Optimal Conditions for Effective Self- and Co-regulatory Arrangements' (Occasional Paper, 2010)
- Australian Government, 'Australia's National Framework for Environmental Management Systems in Agriculture' (Natural Resource Management Ministerial Council, 2002)
- Australian Government, *Best Practice Regulation Handbook* (2010)
- Australian Government, *European Union Cattle Accreditation Scheme - Information for Farms* (Department of Agriculture, 2014)
- Australian Government, 'Intergenerational Report - Australia in 2055' (2015)

Australian National Audit Office, 'Regional Delivery Model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality' (Audit Report No 21 2007–08, 2008)

Axelrod, Robert *The Evolution of Cooperation* (Basic Books, Inc, 1984)

Ayres, Ian and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (Oxford University Press, 1992)

Bajgai, Y et al, 'Comparison of Organic and Conventional Managements on Yields, Nutrients and Weeds in a Corn-Cabbage Rotation' (2015) 30(2) *Renewable Agriculture and Food Systems* 132

Baldwin, Claudia, 'Understanding the Social Obligations of Farmers' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO, 2011) 13

Baldwin, Claudia, Mark Hamstead and Vikki Uhlmann, 'Co-management as a Social Licence Initiative' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO, 2011) 173

Bandura, Albert, 'On the Psychosocial Impact and Mechanisms of Spiritual Modeling' (2003) 13(3) *The International Journal for the Psychology of Religion* 167

Bandura, Albert, *Self-efficacy: The Exercise of Control* (WH Freeman and Company, 1997)

Bandura, Albert, 'Social Cognitive Theory of Self-Regulation' (1991) 50 *Organizational Behavior and Human Decision Processes* 248

Bandura, Albert 'Toward an Agentic Theory of the Self' in Herbert Marsh, Rhonda G Craven and Dennis M McInerney (eds), *Self-Processes, Learning and Enabling Human Potential - Dynamic New Approaches* (Information Age Publishing, 2008) 15

- Barański, Marcin et al, 'Higher Antioxidant and Lower Cadmium Concentrations and Lower Incidence of Pesticide Residues in Organically Grown Crops: A Systematic Literature Review and Meta-Analyses' (2014) 112 *British Journal of Nutrition* 794
- Barrett, G W et al, 'Colonisation of Native Tree and Shrub Plantings by Woodland Birds in an Agricultural Landscape' (2008) 35 *Wildlife Research* 19
- Bartel, Robyn, 'Vernacular Knowledge and Environmental Law: Cause and Cure for Regulatory Failure' (2014) 19(8) *Local Environment: The International Journal of Justice and Sustainability* 891
- Bassett, Anna 'Technical Advice Fact Sheet No. 1 - Welfare and Belgian Blue Cattle' (Animal Welfare Approved, 2009)
- Beardsley, D, T Davies and R Hersh, 'Improving Environmental Management' (1997) 39(7) *Environment: Science and Policy for Sustainable Development* 6
- Bechara, John P and Andrew Van De Ven, 'Philosophy of Science Underlying Engaged Scholarship' in Andrew Van De Ven (ed), *Engaged Scholarship - A Guide for Organizational and Social Research* (Oxford University Press, 2007)
- Becker, G, 'Crime and Punishment: An Economic Approach. ' (1968) 76 *Journal of Political Economy* 169
- Bennett, C F, 'Analyzing Impacts of Extension Programs' (US Dept of Agriculture, Extension Service, 1979)
- Berg, J, J Dickhaut and K McCabe, 'Trust, Reciprocity, and Social History' (1995) 10 *Games and Economic Behavior* 122
- Bernard, Russell H and Gery W Ryan, *Analyzing Qualitative Data: Systematic Approaches* (SAGE, 2010)
- Bertoldi, Paolo and Silvia Rezessy, 'Voluntary Agreements in the Field of Energy Efficiency and Emission Reduction: Review and Analysis of the Experience in Member States of the European Union' (Report prepared by the Joint Research Centre of the European Commission, 2010)

Birks, Stuart 'Why the shadow of the law is important for economists' (2012) 46(1) *New Zealand Economic Papers* 79

Böhringer, Christoph and Manuel Frondel, 'Assessing Voluntary Commitments in the German Cement Industry: The Importance of Baselines' in R.D. Morgenstern and W.A. Pizer (eds), *Reality Check - The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007) 105

Brophy, M, A Netherwood and R Starkey, 'The Voluntary Approach: An Effective Means of Achieving Sustainable Development?' (1995) 2 *Eco-Management and Auditing* 127

Brorson, T and G Larsson, *Environmental Management: How to Implement an Environmental Management System within a Company or Other Organization* (EMS AB, 1999)

Brown, Valerie A et al, 'Towards a Just and Sustainable Future' in Valerie A Brown, John Alfred Harris and Jacqueline Y Russell (eds), *Tackling Wicked Problems Through the Transdisciplinary Imagination* (Taylor & Francis, 2010) 1

Byron, Neil et al, 'A Review of Biodiversity Legislation in NSW' (Final Report of Independent Biodiversity Legislation Review Panel for NSW Government Office of Environment and Heritage, 2014)

Cabugueira, Manuel F, 'The Voluntary Agreement as an Environmental Policy Instrument - Evaluation Criteria' (Paper presented at the Workshop of the European Research Network on Voluntary Approaches (CAVA), Copenhagen 1999)

Carlsson, Lars and Fikret Berkes, 'Co-management: Concepts and Methodological Implications' (2005) 75 *Journal of Environmental Management* 65

Carraro, C and F Lévêque, 'Introduction: The Rationale and Potential of Voluntary Approaches' in C. Carraro and F. Lévêque (eds), *Voluntary Approaches in Environmental Policy* (Kluwer Academic Publishers, 1999)

- Carson, Jennifer, 'How Much Carbon Can Soil Store?' (Soil Quality Pty Ltd, undated)
- Cary, John, Suku Bhaskaran and Michael Polonsky, 'Green Marketing and EMS: Assessing Potential Consumer Influence on EMS Development in Fresh Food Chains' (Report no 04/175, RIRIDC, 2004)
- Cave, Jonathan, Chris Marsden and Steve Simmons, 'Options for and Effectiveness of Internet Self- and Co-regulation' (Technical Report for the European Commission, Rand Corporation, 2008)
- Chan, K Y et al, 'Scoping Paper: Soil Organic Carbon Sequestration Potential for Agriculture in NSW' (Department of Primary Industries (NSW), 2008)
- Chan, Yin, 'Increasing soil organic carbon of agricultural land' (Department of Primray Industries (NSW), 2008)
- Chilton, Mary-Dell, 'A Vector for Introducing New Genes into Plants' (1983) 248 *Scientific American* 51
- Chirkov, V et al, 'Differentiating Autonomy From Individualism and Independence: A Self-Determination Theory Perspective on Internalization of Cultural Orientations and Well-being' (2003) 84 *Journal of Personality and Social Psychology* 97
- Clements, R B, *Complete Guide to ISO 14000*, (Prentice Hall, 1996)
- Clemons, Rachel and Angela Cartwright, 'What does 'Free Range' Really Mean, and Are Consumers Being Misled?', *Choice* 2014, ACA
<<https://www.choice.com.au/food-and-drink/meat-fish-and-eggs/eggs/articles/free-range-eggs>>
- Clunies-Ross, Tracey and Nicholas Hildyard, *The Politics of Industrial Agriculture* (Taylor and Francis, 2013)
- Cooksey, Ray and Gael McDonald, *Surviving and Thriving in Postgraduate Research* (Tilde University Press, 2011)

- Cooper, Tamsin, Kaley Hart and David Baldock, 'Provision of Public Goods Through Agriculture in the European Union' (Report prepared for the DG Agriculture and Rural Development, Institute for European Environmental Policy, 2009)
- CSIRO and Bureau of Meteorology, 'Climate Change in Australia - Information for Australia's Natural Resource Management Regions' (Technical Report, 2015)
- Curtis, Nicole, 'Cross-contamination by Chemicals of Farming Family Members: A Snapshot of Farmers' Health in the Esperance Port Zone 2010–2013' (RIRDC, 2014)
- Dangour, Alan et al, 'Comparison of Putative Health Effects of Organically and Conventionally Produced Foodstuffs: A Systematic Review - Report for the Food Standards Agency' (Nutrition and Public Health Intervention Research Unit - London School of Hygiene & Tropical Medicine, 2009)
- Darbas, Toni et al, 'Co-regulation and Cotton: Governance of Natural Resource Management in the Australian Cotton Industry' (2008) 12(2) *Australasian Journal of Natural Resources Law and Policy* 87
- Darby, M and E Karni, 'Free Competition and the Optimal Amount of Fraud' (1973) 18 *Journal of Law and Economics* 67
- Dart, J, R J Petheram and W Straw, 'Review of Evaluation in Agricultural Extension' (Project No VCA-DA, RIRDC, 1998)
- Davidson, Julie et al, 'Governance Principles for Regional Natural Resource Management' (Report No 1 of the Project 'Pathways to Good Practice in Regional NRM Governance', Land and Water Australia, 2006)
- de Clercq, Marc and Andre Suck, 'Theoretical Reflections on the Proliferation of Negotiated Agreements' in Marc De Clercq (ed), *Negotiating Environmental Agreements in Europe: Critical Factors for Success* (Edward Elgar, 2002) 9
- de Leeuw, Edith D and Joop J Hox, 'Self-Administered Questionnaires: Mail Surveys and Other Applications' in Edith D de Leeuw, Joop J Hox and Don A Dillman (eds),

International Handbook of Survey Methodology (Lawrence Erlbaum Associates - Taylor and Francis Group, 2008) 239

de Man, Reinier and Tom R Burns, 'Sustainability: Supply Chains, Partner Linkages, and New Forms of Self-regulation' (2006) 25(1) *Human System Management* 1

Deguine, Jean-Philippe, Pierre Ferron and Derek Russell, 'Sustainable Pest Management for Cotton Production: A Review' in Eric Lichtfouse et al (eds), *Sustainable Agriculture* (Springer Science & Business Media, vol 1, 2009) 411

Deming, W E, *Out of Crisis* (MIT Center for Advanced Engineering Study, 1986)

Department of Environment & Resource Management (Qld), 'Queensland Regional Natural Resource Management Framework' (2011)

Department of Environment (Cth), *Tender Based Approaches and Auctions for Conservation Payments* <<http://www.environment.gov.au/node/13922>>

Department of Natural Resources & Mines (Qld), *A Framework for the Accreditation of Farm Management System Programs* (2005)

Department of Natural Resources & Water (Qld), *Delbessie Agreement (State Rural Leasehold Land Strategy)* (December 2007)

Department of Primary Industries (NSW) – Office of Water, *History of Irrigation Corporations in NSW* <<http://www.water.nsw.gov.au/water-licensing/corporate-licences/irrigation-corporations/history-of-irrigation-corporations-in-nsw>>

Department of Primary Industries (Vic), 'A Guide for the Establishment of Community Supported Agriculture Farms in Victoria' (2004)

Department of Treasury and Finance (Vic), *Victorian Guide to Regulation* (2.1 ed, 2011)

Dietz, T, E Ostrom and Stern PC, 'The Struggle to Govern the Commons' (2003) 302 *Science* 1907

Drechsel, Pay and Lucy A Gyiele, 'The Economic Assessment of Soil Nutrient Depletion - Analytical Issues for Framework Development' in *Issues in Sustainable*

Land Management No. 7 (International Board for Soil Research and Management, 1999)

Drinkwater, L E, P Wagoner and M Sarrantonio, 'Legume-Based Cropping Systems Have Reduced Carbon and Nitrogen Losses' (1998) 396 *Nature* 262

Dulleck, Uwe, Rudolf Kerschbamer and Matthias Sutter, 'The Economics of Credence Goods: An Experiment on the Role of Liability, Verifiability, Reputation, and Competition' (2011) 101 *American Economic Review* 526

Dunlap, R E and K D Van Liere, 'The New Environmental Paradigm' (1978) (9) *Journal of Environmental Education* 10

Dunlap, Riley E. et al, 'Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale' (2000) 56(3) *Journal of Social Issues* 425

Ecker, Saan, Jacky Williams and Ian Kininmonth, 'Regional Outcomes for OnFarm Sustainability (ROOFS) - Draft Conceptual Model - A Discussion Paper developed for the ROOFS Working Group' (2006)

Emerson, Kirk, Tina Nabatchi and Stephen Balogh, 'An Integrative Framework for Collaborative Governance ' (2012) 22(1) *Journal of Public Administration Research and Theory* 1

European Environment Agency, 'Environmental Agreements, Environmental Effectiveness' (1997) 3 *EEA Environmental Issue Series* 1

FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) - Guidelines* (version 3.0, (2013)

FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) - Indicators* (2013)

FAO, *Sustainability Assessment of Food and Agriculture Systems (SAFA) Tool - User Manual* (Version 2.2.40, 2014)

- Faure, Michael G., 'Instruments for Environmental Governance: What Works?' in Paul Martin et al (eds), *Environmental Governance and Sustainability* (IUCN Academy of Environmental Law, Edward Elgar, 2012)
- Fenton, John, *Untrained Environmentalist: How an Australian Grazier Brought His Barren Property Back to Life* (Allen & Unwin, 2010)
- Feola, Giuseppe and Claudia R Binder, 'Towards an Improved Understanding of Farmers' Behaviour: The Integrative Agent-centred (IAC) Framework' (2010) 69(12) *Ecological Economics* 2323
- FiBL, 'Chilean Nitrate and Organic Farming' (2005)
- Fisher, Elizabeth et al, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21(2) *Journal of Environmental Law* 213
- Fisheries Research & Development Corporation, 'Co-management: Managing Australia's Fisheries through Partnership and Delegation' (Report Project No. 2006/068, FRDC's National Working Group for the Fisheries Co-Management Initiative) <www.frdc.com.au>
- Foley, Peter, 'Farmer is Killed by Splash of Herbicide', *The Queensland Times* (Ipswich, Australia), 13 Nov 2012 2012 <<http://www.qt.com.au/news/man-rushed-to-hospital-after-swallowing-herbicide/1618297/>>
- Folke, Carl et al, 'Adaptive Governance of Social-Ecological Systems' (2005) 30 *Annual Review Environment and Resources* 441
- Freeman, Jody 'Collaborative Governance in the Administrative State' (1997) 45 *UCLA Law Review*, 22
- Frey, B S, *Not Just for the Money: An Economic Theory of Personal Motivation* (Edward Elgar, 1997)
- Frey, B S and F Oberholzer-Gee, 'The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out' (1997) 87 *American Economic Review* 746

Frey, Bruno S and Margit Osterloh, *Successful Management by Motivation : Balancing Intrinsic and Extrinsic Incentives* (Springer-Verlag, 2002)

Freyer, Bernhard, Jim Bingen and Milena Klimek, 'Ethics in the Organic Movement' in B Freyer and J Bingen (eds), *Re-Thinking Organic Food and Farming in a Changing World, The International Library of Environmental - Volume 22 of The International Library of Environmental, Agricultural and Food Ethics* (Springer Science+Business Media, 2015)

Fuller, R et al, 'Benefits of Organic Farming to Biodiversity Vary Among Taxa' (2005) 1(4) *Biology Letters* 431

Genskow, Kenneth D and Danielle M Wood, 'Improving Voluntary Environmental Management Programs: Facilitating Learning and Adaptation' (2011) 47 *Environmental Management* 907

Georg, S 'Regulating the Environment: Changing from Constraint to Gentle Coercion' (1994) 3(2) *Business Strategy and the Environment* 11

Gerber, Alexander and Volker Hoffmann, 'The Diffusion of Eco-farming in Germany' in N G Roling and M A E Wagemakers (eds), *Facilitating Sustainable Agriculture: Participatory Learning and Adaptive Management in Times of Environmental Uncertainty* (Cambridge University Press, 2000)

Glasbergen, P, 'Setting the Scene: The Partnership Paradigm in the Making' in P Glasbergen, F Biermann and A P J Mol (eds), *Partnerships, Governance and Sustainable Development: Reflections on Theory and Practice* (Edward Elgar, 2007)

1

Glasgow, David, 'The Law of the Jungle: Advocating for Animals in Australia' (2008) 13 *Deakin Law Review* 181

Gleeson, Tony, 'Better Managing Our Environmental Impacts' (Paper prepared for Land Management Reference Panel, 2011)

Gleeson, Tony, 'A Voluntary Australian Land Management Certification System' (RIRDC, 2006)

Gneezy, U and A Rustichini, 'A Fine is a Price' (2000) 24 *Journal of Legal Studies* 1

Graham, John , Bruce Amos and Tim Plumptre, 'Principles for Good Governance in the 21st Century (Policy Brief No 15, Institute on Good Governance, 2003)

Gray, Nathan, '*Smart Barcodes' to Replace Eco Labels as Consumers Become More Information Savvy* FoodNavigator.com <<http://www.foodnavigator.com/Financial-Industry/Smart-barcodes-to-replace-eco-labels-as-consumers-become-more-information-savvy>>

Gunningham, Neil, 'Regulatory Reform and Reflexive Regulation: Beyond Command and Control' in Eric Brousseau, Tom Dedeurwaerdere and Bernd Siebenhüner (eds), *Reflexive Governance for Global Public Goods* (MIT Press, 2012)

Gunningham, Neil, 'Cotton, Health and Environment: A Case Study of Self-Regulation' (Working Paper 29, National Research Centre for Occupational Health and Safety Regulation, 2004)

Gunningham, Neil, 'Environmental Law: Regulation and Governance: Shifting Architectures' (2009) 21(2) *Journal of Environmental Law* 179

Gunningham, Neil, 'The New Collaborative Environmental Governance: The Localization of Regulation' (2009) 36(11) *Journal of Law and Society* 145

Gunningham, Neil and Peter Grabosky, *Smart Regulation: Designing Environmental Policy* (Clarendon Press, 1998)

Gunningham, Neil and Darren Sinclair, 'Environmental Partnerships: Combining Sustainability and Commercial Advantage in the Agriculture Sector' (RIRDC, 2002)

Guthman, J, 'The Trouble with 'Organic Life' in California: A Rejoinder to the 'Conventionalisation' Debate' (2004) 44(3) *Sociologia Ruralis* 310

Handrek, K, *Organic Matter and Soils* (CSIRO, 1979)

Handrek, K and N Black, *Growing Media for Ornamental Plants and Turf* (UNSW Press, 2002)

- Hanna, EG, *Environmental Health and Primary Health Care: Towards a New Workforce Model* (School of Public Health, La Trobe University, 2005)
- Harbaugh, Rick, John W Maxwell and Beatrice Roussillon, 'Label Confusion: The Groucho Effect of Uncertain Standards' (2011) *Management Science* 1
- Hardin, Garrett, 'The Tragedy of the Commons' (1968) 162 *Science* 1243
- Harrison, K, 'Talking with the Donkey: Cooperative Approaches to Environmental Protection' (1999) 2(3) *Journal of Industrial Ecology* 51
- Hawcroft, Lucy J and Taciano L Milfont, 'The Use (and Abuse) of the New Environmental Paradigm Scale Over the Last 30 Years: A Meta-Analysis' (2010) 30 *Journal of Environmental Psychology* 143
- Head, Brian W, 'From Government to Governance: Explaining and Assessing New Approaches to NRM' in Marcus B. Lane, Cathy Robinson and Bruce Taylor (eds), *Contested Country: Local and Regional Natural Resources Management in Australia* (CSIRO Publishing, 2009) 15
- Heckman, J, 'A History of Organic Farming: Transitions from Sir Albert Howard's War in the Soil to USDA National Organic Program' (2005) 21(3) *Renewable Agriculture and Food Systems* 143
- Hicks, John et al, 'Succession Planning in Australian Farming' (2012) 6(4) *Australasian Accounting, Business and Finance Journal* 94
- Hole, D et al, 'Does Organic Farming Benefit Biodiversity?' (2004) 122(1) *Biological Conservation* 113
- Holley, Cameron, Neil Gunningham and Clifford Shearing, *The New Environmental Governance* (Routledge, 2013)
- Holling, C S and Gary K Meffe, 'Command and Control and the Pathology of Natural Resource Management' (1996) 10(2) *Conservation Biology* 328

Howarth, R, B Haddad and B Paton, 'The Economics of Energy Efficiency: Insights from Voluntary Programs' (2000) *Energy Policy* 477

IFOAM, *Organic Agriculture and Participatory Guarantee Systems*
<http://www.ifoam.org/about_ifoam/standards/pgs/PGS-Brochure-Dec2011_Web.pdf>

IFOAM, 'Principles of Organic Agriculture' <www.ifoam.bio>

Jaffe, A B and R N Stavins, 'Dynamic Incentives of Environmental Regulations: The Effects of Alternative Policy Instruments on Technology Diffusion' (1995) 29 *Journal of Environmental Economics and Management* S43

Jones, Rebecca, *Green Harvest: A History of Organic Farming and Gardening in Australia* (CSIRO Publishing, 2010)

Karkkainen, Bradley C 'Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism' (2003) 87 *Minnesota Law Review* 943

Keogh, Mick, 'Private Sector Investment in Agricultural Research and Development in Australia' (2011) 8(2) *Australian Farm Business Management Journal* 13

Khanna, M and L Damon, 'EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic performance of Firms' (1999) 37(1) *Journal of Environmental Economics and Management* 1

Khanna, Madhu, 'Non-mandatory Approaches to Environmental Protection ' (2002) 15(3) *Journal of Economic Surveys* 291

King, F H, *Farmers of Forty Centuries or, Permanent Agriculture in China, Korea and Japan* (Project Gutenberg, 2004 ed, 1911)

Kings, David and Brian Ilbery, 'The Lifeworlds of Organic and Conventional Farmers in Central-southern England: A Phenomenological Enquiry' (2015) 55(1) *Sociologia Ruralis* 62

Koch, Andrea et al, 'Soil Security: Solving the Global Soil Crisis' (2013) 4(4) *Global Policy* 434

- Kuepper, George, 'A Brief Overview of the History and Philosophy of Organic Agriculture' (Kerr Center for Sustainable Agriculture, 2010)
- Labatt, S and V W Maclaren, 'Voluntary Corporate Environmental Initiatives: A Typology and Preliminary Investigation' (1998) 16(2) *Environment and Planning C: Government and Policy* 191
- Lam, Shu Kee et al, 'The Potential for Carbon Sequestration in Australian Agricultural Soils is Technically and Economically Limited' (2013) 3 *Science Reports* 2179
- Lampkin, Nic and Stephan Dabbert, 'Organic Farming: Can Policy and Markets Mix? ' (Paper presented at the 'Reform, Trade and Sustainability', Agra-Europe Outlook, London, 2003)
- Lane, Marcus, Bruce Taylor and Cathy Robinson, 'Introduction' in Marcus B Lane, Cathy Robinson and Bruce Taylor (eds), *Contested Country: Local and Regional Natural Resources Management in Australia* (CSIRO Publishing, 2009) 1
- Läpple, Doris, 'Comparing Attitudes and Characteristics of Organic, Former Organic and Conventional Farmers: Evidence from Ireland' (2012) 28(4) *Renewable Agriculture and Food Systems* 329
- Latacz-Lohmann, U and C Van der Hamsvoort, 'Auctioning Conservation Contracts: A Theoretical Analysis and an Application' (1997) 79 *American Journal of Agricultural Economics* 407
- Lenox, Michael J and Jennifer Nash, 'Industry Self-Regulation and Adverse Selection: A Comparison Across Four Trade Association Programs' (2003) 12 *Business Strategy and the Environment* 343
- Leopold, Aldo, *A Sand County Almanac - With Other Essays on Conservation from Round River* (Oxford University Press, 1966 ed, 1949)
- Leu, Andre 'The Australian Standard for Organic and Biodynamic Products and Regulation - Organic Federation of Australia Position Paper ' (2009)

- Leu, Andre and Liz Clay, 'Assuring Environmental Outcomes on Organic Farms - Incorporating EMS into the National Organic Certification Program' (Paper presented at the Practical approaches: Exploring the future of EMS in Australia: 1st National EMS Forum, Toowoomba, Australia, 14 -17 May 2007)
- Levin, Kelly et al, 'Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change' (2012) 45 *Policy Sciences* 123
- Lin, Biing-Hwan, Travis A Smith and Chung L Huang, 'Organic Premiums of US Fresh Produce' (2008) 23(3) *Renewable Agriculture and Food Systems* 208
- Lockeretz, William (ed), *Organic Farming: An International History* (CABI, 2007)
- Lockie, S et al, *Going Organic: Mobilising Networks for Environmentally Responsible Food Production* (CABI, 2006)
- Lockie, Stewart and Vaughan Higgins, 'Roll-Out Neoliberalism and Hybrid Practices of Regulation in Australian Agri-Environmental Governance' (2007) 23 *Journal of Rural Studies* 1
- Loconto, Allison and Marc Barbier, 'Transitioning Sustainability: Performing "Governing by Standards" in Susana Borræs and Jakob Edler (eds), *The Governance of Socio-Technical Systems: Explaining Change* (Edward Elgar, 2014)
- Lord Northbourne, Walter, *Look to the Land* (JM Dent & Sons, 1940)
- Lotter, DW, R Seidel and W Liebhart, 'The Performance of Organic and Conventional Cropping Systems in an Extreme Climate Year' (2003) 18(3) *American Journal of Alternative Agriculture* 146
- Luttikholt, LWM, 'Principles of organic agriculture as formulated by the International Federation of Organic Agriculture Movements' (2007) 43(4) *NJAS - Wageningen Journal of Life Sciences* 347
- Lyster, Rosemary, '(De)Regulating the Rural Environment' (2002) 19 *Environmental and Planning Law Journal* 34

Mäder, P et al, 'Soil Fertility and Biodiversity in Organic Farming' (2002) 296
Science 1696

Majchrzak, Ann, *Methods for Policy Research, Applied Social Research Methods*
(SAGE, 1984)

Mann, Stefan, 'Ethological Farm Programs and the 'Market' for Animal Welfare'
(2005) 18 *Journal of Agricultural and Environmental Ethics* 369

Marshall, G R, 'Nesting, Subsidiarity, and Community-based Environmental
Governance Beyond the Local Level ' (2008) 2(1) *International Journal of the
Commons* 75

Martin, P V, J A Williams and C Stone, 'Transaction Costs and Water Reform: The
Devils Hiding in the Details' (Technical Report 08/08, CRC for Irrigation Futures,
2008)

Martin, Paul and Donna Craig, 'Accelerating the Evolution of Environmental Law
through Continuous Learning from Applied Experience' in Paul Martin and Amanda
Kennedy (eds), *Implementing Environmental Law* (Edward Elgar, 2015) 27

Martin, Paul and Neil Gunningham, 'Leading Reform of Natural Resource
Management Law: Core Principles.' (2011) 28 *Environmental and Planning Law
Journal* 137

Martin, Paul and Jacqueline Williams, 'Next Generation Rural Landscape
Governance for Australia' in V Mauerhofer (ed), *Legal Aspects of Sustainable
Development: horizontal and sectorial policy issue* (Springer International
Publishing, 2015) 607

Mascitelli, Bruno et al, 'Australian Organic Market Report 2014' (Australian Organic
Ltd, 2014)

McCoy, S and G Parleviliet, 'The Export Market Potential for Clean and Organic
Agricultural Products' (RIRDC and Agriculture WA, 1998)

McGrath, Chris, *Does Environmental Law Work? How to Evaluate the Effectiveness
of an Environmental Legal System* (Lambert Academic Publishing, 2010)

McKenzie-Mohr, Doug, *Fostering Sustainable Behaviour: An Introduction to Community-Based Social Marketing* (New Society Publishers, 3rd ed, 2011)

McKittrick, Meredith, 'Industrial Agriculture' in J R McNeill and Erin Stewart Mauldin (eds), *A Companion to Global Environmental History* (John Wiley & Sons, 2012)

Measham, Thomas G, Gail J Kelly and F. Patrick Smith, 'Best Management Practice for Complex Problems: a Case Study of Defining BMP for Dryland Salinity' (2007) 45(3) *Geographical Research* 262

Mech, Thea and Michael D Young, 'Designing Voluntary Environmental Management Arrangements to Improve Natural Resource Management in Agriculture and Allied Rural Industries' (RIRDC, 2001)

Midttun, Atle, 'Partnered Governance: Aligning Corporate Responsibility and Public Policy in the Global Economy' (2008) 8(4) *Corporate Governance* 406

Mobium Group, 'Living LOHAS - Lifestyles of Health and Sustainability in Australia - Overview - Consumer Trends report' (2007)

Moore-Colyer, Richard, 'Towards 'Mother Earth': Jorian Jenks, Organicism, the Right and the British Union of Fascists' (2004) 39(3) *Journal of Contemporary History* 353

Morgenstern, Richard D and William A Pizer, 'Concluding Observations: What Can We Learn from the Case Studies' in Richard D Morgenstern and William A. Pizer (eds), *Reality Check – The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007b)

Morgenstern, Richard D and William A Pizer, 'Introduction: The Challenge of Evaluating Voluntary Programs' in Richard D Morgenstern and William A Pizer (eds), *Reality Check - The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan* (Resources for the Future, 2007a)

1

- Nachimuthu, G et al, 'Organic Vegetable Farms are Not Nutritionally Disadvantaged Compared with Adjacent Conventional or Integrated Vegetable Farms in Eastern Australia' (2012) 146 *Scientia Horticulturae* 164
- Næss, Arne, 'The Shallow and the Deep, Long-Range Ecology Movement' (1973) 16 *Inquiry* 95
- Nash, J and J Ehrenfeld, 'Codes of Environmental Management Practice: Assessing Their Potential as a Tool for Change' (1997) 22 *Annual Review of Energy and Environment* 487
- Neale, J M and R M Liebert, *Science and Behavior, an Introduction to Methods of Research* (Prentice Hall, 1980)
- Neeson, Robyn 'On-line Organic Information', *Organic News* January 2014
- Nemetz, P N, 'Federal Environmental Regulation in Canada' (1986) 26 *Natural Resources Journal* 551
- Neuman, W Lawrence, *Social Research Methods - Qualitative and Quantitative Approaches* (Allyn and Bacon, 5th ed, 2003)
- Newton, T and G Harte, 'Green Business: Technician Kitsch?' (1997) 34(1) *Journal of Management Studies* 75
- Niggli, Urs 'Incorporating Agroecology Into Organic Research: An Ongoing Challenge' (2015) 4(3) *Sustainable Agriculture Research* 149
- Niggli, Urs et al, 'A Global Vision and Strategy for Organic Farming Research - First Draft' (Paper presented at the IFOAM Organic World Congress 2014 - TIPI workshop: Practitioners' Research Agenda, Istanbul, 2014)
- Niggli, Urs et al, 'Towards More Organics in Europe and Worldwide: A Contribution to the Discourse on Ecological or 'Organic Agriculture 3.0' (Paper presented at the BioFach, 2015)

- Nikoloyuk, Jordan, Tom R Burns and Reinier de Man, 'The Promise and Limitations of Partnered Governance: The Case of Sustainable Palm Oil' (2010) 10(10) *Corporate Governance* 59
- Noble, Ian et al, 'Chapter 6 - Land Resources' in *Australia: State of the Environment 1996* (Australian Government, 1996)
- OECD, 'Agricultural Policy Monitoring and Evaluation 2015 - Highlights' (2015)
- Office of Water, Department of Primary Industries (NSW), *History of Irrigation Corporations in NSW*
- Osofsky, H M, 'Multidimensional Governance and the BP Deepwater Horizon Oil Spill' (2011) 63(5) *Florida Law Review* 1077
- Ostrom, Elinor, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990)
- Paton, Bruce, 'Voluntary Environmental Initiatives and Sustainable Industry' (2000) 9 *Business Strategy and the Environment* 328
- Paton, Sandy et al, 'Regional Natural Resource Management: Is it Sustainable' (2004) 11(4) *Australasian Journal of Environmental Management* 259
- Patton, Michael Quinn, *Qualitative Research and Evaluation Methods* (SAGE, 3rd ed, 2002)
- Paulhus, D L, 'Measurement and Control of Response Bias' in J P Robinson, P R Shaver and L S Wrightsman (eds), *Measures of Personality and Social Psychological Attitudes* (Academic Press, 1991) 17
- Paull, John, 'A History of the Organic Agriculture Movement in Australia,' in B Mascitelli and A Lobo (eds), *Organics in the Global Food Chain* (Connor Court Publishing, 2013) 37
- Paull, John, 'The Lost History of Organic Farming in Australia' (2008) 3(2) *Journal of Organic Systems* 2

- Paull, John, 'The Making of an Agricultural Classic: Farmers of Forty Centuries or Permanent Agriculture in China, Korea and Japan, 1911-2011' (2011) 2(3) *Agricultural Sciences* 175
- Paull, John, 'The Organics Iceberg and the Tyranny of Organic Certification' (2013) 8(2) *Journal of Organic Systems* 2
- Pearson, David, Joanna Henryks and Hannah Jones, 'Organic Food: What We Know (and Do Not Know) About Consumers' (2010) *Renewable Agriculture and Food Systems* 1
- Pettigrew, A M, 'Longitudinal Field Research on Change: Theory and Practice' (1990) 1(3) *Organization Science* 267
- Pimentel, David et al, 'Environmental, Energetic, and Economic Comparisons of Organic and Conventional Farming Systems' (2005) 55(7) *BioScience* 573
- Podolinsky, Alex, 'An Organic Industry Overview' (1995)
- Ponisio, Lauren C et al, 'Diversification Practices Reduce Organic to Conventional Yield Gap' (2014) 282 *Proceedings of the Royal Society - B*
- Posner, Richard A, 'The Decline of Law as an Autonomous Discipline: 1962-1987' (1987) 100 *Harvard Law Review* 761
- Potts, Jason et al, 'The State of Sustainability Initiatives Review 2014 - Standards and the Green Economy' (ISSD & IIED, 2014)
- Pretty, Jules, *Agri-Culture - Reconnecting People, Land and Nature* (Earthscan, 2002)
- Queensland Farmers Federation & Queensland Government, *Memorandum of Understanding (MOU) between the Queensland Government and the Queensland Farmers Federation relating to Farm Management Systems* (2005)
- Rees, J V, 'Reforming the Workplace: A Study of Self-regulation' in *Occupational Safety* (University of Pennsylvania Press, 1988)

- Reeson, Andrew F and John G Tisdell, 'Institutions, Motivations and Public Goods: An Experimental Test of Motivational Crowding' (2008) 68 *Journal of Economic Behavior & Organization* 273
- Reganold, J et al, 'Sustainability of Three Apple Production Systems' (2001) 410 *Nature* 926
- Rice, John and Nigel Martin, 'What Our Love Affair with Coffee Pods Reveals about our Values' (2014) *The Conversation* <<http://theconversation.com/what-our-love-affair-with-coffee-pods-reveals-about-our-values-30068>>
- Ritchie, Euan G et al, 'Continental-scale Governance Failure will Hasten Loss of Australia's Biodiversity' (2013) 27(6) *Conservation Biology* 1133
- Rittel, H and M Webber, 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155
- Roberts, Kate and Jeff Coutts, 'Methods, Monitoring , Evaluation and Reporting of Extension' (Paper presented at the APEN 2007 National Forum 'Capture, Consolidate and Communicate - The Changing Nature of Contemporary Extension', Canberra, 13-14 November 2007 2007)
- Robson, Colin, *Real World Research* (Blackwell, 2nd ed, 2002)
- Rodale Institute, *Regenerative Organic Agriculture and Climate Change - A Down-to-Earth Solution to Global Warming* (2014)
- Roth, Guy, 'Retaining the Social Licence: The Australian Cotton Industry Case Study' in Jacqueline Williams and Paul Martin (eds), *Defending the Social Licence of Farming: Issues, Challenges and New Directions for Agriculture* (CSIRO Publishing, 2011) 69
- Rousso, Ada S and Shvetank P Shah, 'Packaging Taxes and Recycling Incentives: The German Green Dot Program' (1994) 47(3) *National Tax Journal* 689
- Rowland, Philippa, 'Developing a National Certification Process for Environmental Management in Australian Agriculture' (RIRDC, 2005)

Rowland, Philippa 'National Inventory of Environmental Management Systems in Australian Agriculture' (RIRDC, 2009)

RSPCA, 'Kangaroo Shooting Code Compliance: A Survey of the Extent of Compliance with the Requirements of the Code of Practice for the Humane Shooting of Kangaroos' (Report to the Commonwealth Department of Environment, 2002)

Rugman, A M and A Verbeke, 'Corporate Strategies and Environmental Regulations: An Organizing Framework' (1998) 19(4) *Strategic Management Journal* 363

Rützler, Hanni and Wolfgang Reiter, 'Organic 3.0 - Analysis of Trends and Potential for an Organic Future' (Zukunftsinstitut Austria GmbH, 2014)
<<https://www.biofach.de/de/presse/organic-studie/>>

Ryan, Richard M and Edward L Deci, 'Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being' (2000) 55(1) *American Psychologist* 68

Ryan, Richard M and Edward L Deci, 'Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions' (2000) 25 *Contemporary Educational Psychology* 54

Scherr, Sara J and Jeffrey A McNeely, 'Biodiversity Conservation and Agricultural Sustainability: Towards a New Paradigm of "Ecoagriculture" Landscapes' (2008) 363 *Philosophical Transactions of the Royal Society B* 477

Selsky, John W and Barbara Parker, 'Cross-Sector Partnerships to Address Social Issues: Challenges to Theory and Practice' (2005) 31 *Journal of Management* 849

Sharma, Sanjay, 'Different Strokes: Regulatory Styles and Environmental Strategy in the North American Oil and Gas Industry' (2001) 10 *Business Strategy and the Environment* 344

Sharp, J, E Imerman and G Peters, 'Community Supported Agriculture (CSA): Building Community Among Farmers and Non-Farmers' (2002) 40(3) *Journal of Extension*

Sidman, M, *Coercion and its Fallout* (Authors Cooperative Inc, 1989)

Simpson, J A and E S C Weiner (eds), *Oxford English Dictionary* (Clarendon Press, 2nd ed, 1989)

Skinner, DH, 'The Science of Organic Farming' in William Lockeretz (ed), *Organic Farming: An International History* (CABI, 2007)

Smith-Spangler, Crystal et al, 'Are Organic Foods Safer or Healthier Than Conventional Alternatives?: A Systematic Review' (2012) 157(5) *Annals of Internal Medicine* 348

Smith, A G and A E Robbins, 'Structured Ethnography: The Study of Parental Involvement' (1982) 26(1) *American Behavioural Scientist* 45

Smith, Peter G and Ray Bradley, 'Bovine Spongiform Encephalopathy (BSE) and its Epidemiology' (2003) 66 *British Medical Bulletin* 185

Smyth, Anita K and Craig D James, 'Characteristics of Australia's Rangelands and Key Design Issues for Monitoring Biodiversity' (2004) 29 *Austral Ecology* 3

Sommer, Rolf and Deborah Bossio, 'Dynamics and Climate Change Mitigation Potential of Soil Organic Carbon Sequestration' (2014) 144 *Journal of Environmental Management* 83

Soule, M et al, 'The Role of Connectivity in Australian Conservation' (2006) 10(4) *Pacific Conservation Biology* 266

Spash, Clive L, 'The Brave New World of Carbon Trading' (2009) 15(2) *New Political Economy* 169

Średnicka-Tober, Dominika et al, 'Higher PUFA and N-3 PUFA, Conjugated Linoleic Acid, A-Tocopherol and Iron, but Lower Iodine and Selenium Concentrations in Organic Milk: A Systematic Literature Review and Meta- and Redundancy Analyses' (2016) *British Journal of Nutrition* 1

Stake, Robert E, 'Case Studies' in Norman K Denzin and Yvonna S Lincoln (eds), *Strategies of Qualitative Inquiry* (SAGE, 2nd ed, 2003)

State of the Environment 2011 Committee, *Australia State of the Environment 2011 - In Brief* (DSEWPaC, 2011)

Steelman, Toddi A, *Implementing Innovation: Fostering Enduring Change in Environmental and Natural Resource Governance* (Georgetown University Press, 2010)

Stenson, Kevin and Paul Watt, 'Governmentality and `the Death of the Social`?: A Discourse Analysis of Local Government Texts in South-east England' (1999) 36(1) *Urban Studies* 189

Stevenson, J, *Humus Chemistry in Soil Chemistry* (Wiley 1998)

Stobbelaar, Derk Jan et al, 'Internalization of Agri-environmental Policies and the Role of Institutions' (2009) 90 *Journal of Environmental Management* S175

Stoeckl, Natalie, 'The Private Costs and Benefits of Environmental Self-Regulation: Which Firms Have Most to Gain?' (2004) 13 *Business Strategy and the Environment* 135

Stolze, Matthias and Nicolas Lampkin, 'Policy for Organic Farming: Rationale and Concepts' (2009) 34 *Food Policy* 237

Strang, Veronica 'Integrating the Social and Natural Sciences in Environmental Research: A Discussion Paper' (2009) 11 *Environment, Development and Sustainability* 1

Tanner, Caroline M et al, 'Rotenone, Paraquat and Parkinson's Disease' (2011) 119(6) *Environmental Health Perspectives* 866

Taylor, Eric L, A Gordon Holley and Melanie Kirk, 'Pesticide Development - A Brief Look at the History' (Southern Regional Extension Forestry, 2007)

Tee, E, A-M Boland and A Medhurst, 'Voluntary Adoption of Environmental Management Systems in the Australian Wine and Grape Industry Depends on Understanding Stakeholder Objectives and Drivers' (2007) 47 *Australian Journal of Experimental Agriculture* 273

Tennent, R and S Lockie, 'Market-Based Instruments and Competitive Stewardship Funding for Biodiversity Conservation: The Achievable Reality' (2013) 20(1) *Australasian Journal of Environmental Management* 6

Thompson, Lyndal-Joy and Stewart Lockie, 'Private Standards, Grower Networks, and Power in a Food Supply System' (2012) *Agriculture and Human Values*

Thomson, Carolina Rios, Lucimar Santiago de Abreu and Diego Grespan de Oliveira, 'The Campinas and Region Natural Agriculture Association's Participatory Guarantee System: A Case Study in Brazil' (Paper presented at the 4th ISOFAR Scientific Conference at the Organic World Congress 2014, Istanbul, Turkey, 2014)

Tibor, T and I Feldman, *The Development of ISO 14000: A Guide to the New Environmental Management Standards* (Irwin Professional Publishing, 1996)

Triandis, Harry C and Michele J Gelfand, 'Converging Measurement of Horizontal and Vertical Individualism and Collectivism' (1998) 74 *Journal of Personality and Social Psychology* 118

Tyler, Tom R, *Why People Obey the Law* (Princeton University Press, 2006)

Vaarst, M et al, 'Animal Health and Nutrition in Organic Farming' in P Kristiansen, A Taji and J Reganold (eds), *Organic Agriculture: A Global Perspective* (CSIRO Publishing, 2006) 167

Van den Bosch, Robert, *The Pesticide Conspiracy* (University of California Press, first published Doubleday, 1978, Garden City, USA, 1989)

Vanclay, F, 'Social Principles for Agricultural Extension to Assist in the Promotion of Natural Resource Management' (2004) 44 *Australian Journal of Experimental Agriculture* 213

Verbeke, A and C Coeck, 'Environmental Taxation: A Green Stick or a Green Carrot for Corporate Social Performance' (1997) 18 *Managerial and Decision Economics* 507

Vesala, Hannu T and Kari Mikko Vesala, 'Entrepreneurs and Producers: Identities of Finnish Farmers in 2001 and 2006' (2010) 26 *Journal of Rural Studies* 21

- Vetter, Szilvia, László Vasa and László Ózsvári, 'Economic Aspects of Animal Welfare' (2014) 11(7) *Acta Polytechnica Hungarica*
- Vogl, Christian R, Lukas Kilcher and Hanspeter Schmidt, 'Are Standards and Regulations of Organic Farming Moving Away from Small Farmers' Knowledge?' (2005) 26(1) *Journal of Sustainable Agriculture* 5
- Waddock, S, 'A Typology of Social Partnership Organizations' (1991) 22(4) *Administration & Society* 480
- Ward, Halina and Mai-Lan Ha, *Voluntary Social and Environmental Standards and Public Governance: Reviewing the Evidence and Setting Principles for Standards-setters* (The Pacific Institute, 2012)
- Weintraub, J, 'The Theory and Politics of the Public/Private Distinction' in J Weintraub and K Kumar (eds), *Public and Private in Thought and Practice - Perspectives on a Grand Dichotomy* (University of Chicago Press, 1997)
- Welsh, Rick, 'The Economics of Organic Grain and Soybean Production in the Midwestern United States' (Policy Studies Report No 13, Henry A Wallace Institute for Alternative Agriculture, 1999)
- White, S, 'Regulation of Animal Welfare in Australia and the Emergent Commonwealth: Entrenching the Traditional Approach of the States and Territories or Laying the Ground for Reform?' (2007) 35(3) *Federal Law Review* 347
- WHO, 'Public Health Impact of Pesticides Used in Agriculture' (1990)
- Willer, Helga and Julia Lernoud, *The World of Organic Agriculture - Statistics and Emerging Trends 2015* (FiBL and IFOAM, 2015)
- Williams, J, 'Tamar Valley Farmers Public Good NRM Contributions 2011-2012' (Australian Centre for Agriculture & Law, 2015)
- Williams, J A, Beeton R J S and G T McDonald, 'Success Attributes of Regional Natural Resource Management ' (2008) 3(3) *International Journal of Sustainable Development and Planning* 203

Willingham, Richard and Tom Allard, 'Ban on Live Cattle Trade to Indonesia', *Sydney Morning Herald* 8 June 2011 2011 <<http://www.smh.com.au/national/ban-on-live-cattle-trade-to-indonesia-20110607-1frdg.html> >

Wilson, James Q, *Bureaucracy: What Government Agencies Do And Why They Do It* (Basic Books, 1989)

Wilson, Kelpie, 'Justus von Liebig and the Birth of Modern Biochar' (2014) *Biochar Journal*

Wynen, Els, 'Economic Management in Organic Agriculture' in Paul Kristiansen, Acram Taji and John Reganold (eds), *Organic Agriculture - A Global Perspective* (CSIRO, 2006) 231

Wynen, Els 'Standards and Compliance Systems for Organic and Bio-Dynamic Agriculture in Australia: Past, Present and Future' (2007) 2 *Journal of Organic Systems* 42

Yin, Robert K, *Case Study Research - Design and Methods*, Applied Social Research Methods Series (SAGE, 4th ed, 2009)

Zimmer, G, *The Biological Farmer* (Acres USA, 2000)

B Cases

ACCC v G O Drew Pty Ltd [2007] FCA 1246

Commonwealth v Tasmania [1983] HCA 21; (1983) 158 CLR 1 ('*Tasmanian Dam Case*')

Marsh v Baxter [2014] WASC 187

C Legislation

Agricultural and Veterinary Chemicals Code Act 1994 (Cth)

Australia New Zealand Food Standards Code

Commission Regulation (EC) No. 889/2008

Competition and Consumer Act 2010 (Cth)

References

Council Regulation (EC) No. 834/2007

Council Regulation (EEC) No. 2092/91

Environmental Protection Act 1994 (Qld)

Environmental Protection and Biodiversity Conservation Act 1999 (Cth) ('EPBC Act')

Exports Control Act 1982 (Cth)

Export Control (Organic Produce Certification) Orders (Cth)

Export Control (Orders) Regulations 1982 (Cth)

Export Control (Export of Live-stock to the Republic of Indonesia) Order 2011 (Cth)

Food Production (Safety) Act 2000 (Qld)

Food Standards Australia New Zealand Act 1991 (Cth)

Irrigation Corporations Act 1994 (NSW)

Legislative Instruments Act 2003 (Cth)

Organic Produce Certification Orders 1997 (Cth)

Pesticides Act 1999 (Cth)

Pesticides Regulation 2009 (Cth)

Primary Industries (Excise) Levies Act 1999 (Cth)

Primary Industries Levies and Charges Collection Act 1991 (Cth)

Regulation (EU) No 1307/2013

Therapeutic Goods Act 1989 (Cth)

Trade Marks Act 1995 (Cth)

Trade Practices Act 1974 (Cth)

Water Act 2002 (Qld)

E Other

ACCC, 'ACCC Addresses Carbon Claims' (27 June 2008

<<https://www.accc.gov.au/media-release/accc-addresses-carbon-claims>>

Alliance for Water Stewardship, *The AWS International Water Stewardship Standard* (2013)

ALMG, *Biodiversity Monitoring Framework for CLM* (2nd ed, 2012)

ALMG, *CLM Features* <<http://almg.org.au/certified-land-management/CLM-features>>

AOL, *Australian Certified Organic Standard 2013*

<<http://austorganic.com/australian-certified-organic-standard1/>>

AS 6000-2009 – Organic and Biodynamic Products

Australian Government, *National Landcare Programme - Regional NRM*

Organisations <<http://www.nrm.gov.au/regional/regional-nrm-organisations>>

Australian Research Council, *National Competitive Grants Program - Linkage Projects* (last modified 27 September 2013)

<http://www.arc.gov.au/ncgp/lp/lp_default.htm>

Australian School of Business, 'Marketing Mayhem: Re-evaluating the Power of Green Persuasion' (2010)

<<http://web.archive.org/web/20130513005223/http://knowledge.asb.unsw.edu.au/article.cfm?articleid=1255>>

Crawford, Peter, *ALM Group Monitoring Manual* (2010)

Crawford, Peter and Tony Gleeson, *The Australian EMS Manual - A Guide to Developing and Implementing an Environmental Management System for Australian Land Managers* (Australian Landcare Management System Group, 2007)

Dairy Australia, *Dairying for Tomorrow - DairySAT - A Self-assessment Tool to Improve Productivity and Environmental Outcomes on Your Farm* (2010)

Department of Agriculture (Cth), *Organic and biodynamic produce*
<<http://www.agriculture.gov.au/ag-farm-food/food/organic-biodynamic> >

Department of Agriculture (Cth), *What We Do - Planned Outcomes for 2013-14*
<<http://www.agriculture.gov.au/about/what-we-do>>

Department of Environment (Cth), *Directory of Important Wetlands in Australia*
<<http://www.environment.gov.au/topics/water/water-our-environment/wetlands/australian-wetlands-database/directory-important>>

Department of Environment (Cth), *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* <<http://www.environment.gov.au/epbc>>

EU Interinstitutional Agreement on Better Law-Making – [2003] OJ C 321/01

Fertiliser Australia and Australian Fertiliser Services Association, 'Code of Practice for Fertilizer Description and Labelling ' (2011)

FutureBeef, *Grazing Land Management* (15 June 2015)
<<https://futurebeef.com.au/knowledge-centre/grazing-land-management/>>

IFOAM, 'Family of Standards' (2015) <<http://www.ifoam.bio/es/ifoam-family-standards>>

ISO 14001: 2015 – Environmental Management Systems (3rd ed, 2015)

ISO 19011: 2011 – Guidelines for Auditing Management Systems (2nd ed, 2011)

ISO, *ISO 9001 Certifications Top One Million Mark, Food Safety and Information Security Continue Meteoric Increase* (2010)
<<http://www.iso.org/iso/news.htm?refid=Ref1363>>

IUCN, 'Resolutions and Recommendations - Resolution 3.012 Governance of Natural Resources for Conservation and Sustainable Development' (2005)

Meat and Livestock Australia, *Meat Standards Australia*

<<http://www.mla.com.au/Marketing-beef-and-lamb/Meat-Standards-Australia>>

NASAA, 'NASAA Organic Standard' (2012)

<<http://www.nasaa.com.au/publications.html>> ('*NASAA Standard*')

New Zealand Government, 'Guidelines for Carbon Claims - Fair Trading Act 1986' (2009)

OISCC, 'National Standard for Organic and Bio-Dynamic Produce - Edition 3.6' (2015) <http://www.ofa.org.au/national_standard> ('*National Standard*')

OISCC, 'Terms of Reference' (2010) <www.OISCC.org/about-us.html>

Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003 (UN, EU, IMF, OECD, WB, 2003)

University of Melbourne, *Map Collection - Outline Maps*

<<http://www.lib.unimelb.edu.au/collections/maps/digital/outline-maps/>>

USDA, *National Organic Program* <<http://www.ams.usda.gov/about-ams/programs-offices/national-organic-program>>

Websites

ACO website, <<http://aco.net.au>>

ALMG website, <<http://www.almg.org.au>>

AOL website, <<http://austorganic.com>>

AUS-MEAT website, <<https://www.ausmeat.com.au/about-us/history.aspx>>

AUS-QUAL website, <<http://www.ausqual.com.au/about-us.aspx>>

BDRI website, <<http://www.demeter.org.au/about1.htm>>

CottonBMP website, <<http://www.bmpcotton.com.au/>>

Freshcare website, <<http://www.freshcare.com.au/about/history-of-freshcare/>>

FSANZ website, <<http://www.foodstandards.gov.au/about/Pages/default.aspx>>

GlobalGAP website, <http://www.globalgap.org/cms/front_content.php?idcat=2>

GrazingBMP website, <<https://www.bmpgrazing.com.au/> - &panel1-2>

Human Development Index website, <<http://hdr.undp.org/en/content/table-1-human-development-index-and-its-components>>

Human Rights Risk Index website, <<http://reliefweb.int/map/world/world-human-rights-risk-index-2014>>

ISEAL website, <<http://www.isealalliance.org/about-us>>

NASAA, <<http://www.nasaa.com.au>>

NATA website, <<http://www.nata.com.au/nata/about-nata>>

NRM Regions Australia website, <<http://nrmregionsaustralia.com.au/>>

OFA website: <http://www.ofa.org.au/national_organic_mark>

OFC website, <<http://www.organicfoodchain.com.au/>>

OISCC website, <<http://www.oiscc.org/about-us.html>>

OTA-RE website, <<http://organictrustaustralia.org.au/>>

QMDC, <<http://www.qmdc.org.au/about-qmdc.html>>

SFPQ website,

<http://www.safefood.qld.gov.au/index.php?option=com_content&view=article&catid=56&id=66&Itemid=38>

TOP website, <<http://www.tasorganicdynamic.com.au/>>

Urgenci website, <<http://urgenci.net/>>

APPENDICES

Appendix 1: External Stakeholder Interview Questions

Interview questions
1. What are your organization's expectations of the way farmers manage their land?
2. How could voluntary programs for farmers help achieve your organization's expectations? <ul style="list-style-type: none">– In your view, what are the downsides of voluntary programs as a way of achieving your organization's expectations?
3. What would your organization expect to see when farmers claim that they can prove that they are good land managers?
4. What are you organization's expectations of the voluntary programs themselves? <ul style="list-style-type: none">– What would you need to see in those programs in order for you to take their claims seriously, in terms of the structure, management or governance or the programs?
5. What is the potential for your organization to influence the achievement of good environmental outcomes by farmers through voluntary schemes? <ul style="list-style-type: none">– What recognition could your organization give to a voluntary program or to farmers participating in a program, where they meet your organization's expectations?– What benefits can you offer a farmer who utilizes a voluntary program to demonstrate good land management?– What benefits can you offer the voluntary program itself?
6. Are there barriers to your organization giving them recognition? <ul style="list-style-type: none">– How could these barriers be overcome?– Would it help to have a joint effort involving the voluntary program being back-up with some regulation from government?
7. Do you have any other views on this subject that you'd like to share?

Appendix 2: Farmer Interview Questions

Interview Questions	Element of Conceptual Framework Frame- work
1. Introduction – Can you tell me something about your life on the land, and the operations and enterprises you undertake on the land?	2 & 3
2. Land management – Can you tell me something about environmental issues on this property and in the district?	2 & 3
3. Animal welfare – Can you tell me something about the challenges of managing for animal welfare on this property?	2 & 3
4. *Participation in the certification scheme – Can you tell me about your participation in the certification scheme?	1-3
5. Monitoring – Can you tell me about how you work out whether your goals for land management and animal welfare are being achieved?	1-7
6. Law and legal obligations – Can you tell me about the challenges you face in trying to comply with law and regulation in relation to land management and animal welfare?	6
7. Understanding the perspectives of external parties – Can you tell me about some of the main external parties who impact on your management of land and animal welfare?	6
8. Demonstrating land management – If an external party requested you to demonstrate, or prove, or show that your management is leading to positive environmental outcomes or positive animal welfare outcomes, how would you respond?	7
9. Recognition – How could external parties <i>recognize</i> or <i>acknowledge</i> your land management and animal welfare efforts?	8
10. Links with other programs – Can you tell me about any other programs that you participate in?	6, 7 & 8
11. Any other suggestions – Thank you, we've covered a lot of ground in this conversation. Do you have any other ideas or stories that you'd like to add before we finish up?	All

* Not asked of non-participants

Appendix 3: Farmer Survey Form for CLM Participants

[This version is identical to the version used for the ACO participants and FOGG members in the organic case study, except that the words ‘organic certification’ were substituted in every place that ‘CLM’ is mentioned].

BACKGROUND INFORMATION

Question 1 – Enterprises

How would you describe the enterprises on your property? Please cross or mark the circle of the relevant options. Choose as many options as you wish. Please estimate the approximate size of your operations, using whatever measures you usually use to describe your operations (e.g. head of livestock, tonnage, acreage, etc.)

	Approximate size of operation
<input type="radio"/> Broadacre grazing livestock	
<input type="radio"/> Intensive animal enterprise (dairy, piggery, poultry, aquaculture, etc.)	
<input type="radio"/> Broadacre dryland cropping	
<input type="radio"/> Broadacre irrigated cropping	
<input type="radio"/> Intensive plant production (e.g. glasshouse)	
<input type="radio"/> Pasture or fodder production	
<input type="radio"/> Horticulture	
<input type="radio"/> Orchard	
<input type="radio"/> Enterprise based on feral or wild animals	
<input type="radio"/> Ecosystems services	
<input type="radio"/> Environmental management	
<input type="radio"/> Nature conservation	
<input type="radio"/> Real estate management	
<input type="radio"/> Tourism or homestay	
<input type="radio"/> Other (please add):	

Question 2 – Your property and district

Postcode

--	--	--	--

 Do you live on your property? No Yes

Local government area: Regional group: NRM

Question 3

How would you describe yourself?

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

If more than one person is completing this survey together (as a family or business team), please provide details for all team members below.

Team member 2:

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

Team member 3:

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

Question 4

How would you describe your enterprise structure?

- Family operation – family members work on the property
- Corporate operation – operated by shareholders and directors who don't work on the property. The corporation engages managers and other staff to work on the property
- Sole operator – owner works on the property
- Non-profit or philanthropic or social enterprise – employs staff who work on the property
- Other:

ENVIRONMENTAL & ANIMAL WELFARE ISSUES

Question 5 – Environment

From the list below, what are the most significant environmental challenges on your property and in the wider district beyond your property? Please cross or mark the appropriate circle to indicate importance to you.

Environmental challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
• Soil issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pasture or crop issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Water resources issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Native vegetation issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Climate issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Greenhouse gas issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Weeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pest animals – native	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pest animals – non-native	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Nature conservation and biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Economic challenges on my property or in the district that affect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Social challenges on my property or in the district that affect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Any others? Please add:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 6

Below are some statements about your views on your own management in relation to the environment as a result of participating in CLM. Please indicate whether you agree or disagree with each statement by crossing or marking the circle that best matches your response.

As a result of participating in CLM:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of environmental issues <i>on my property</i> has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) My knowledge of environmental issues <i>in the wider district</i> has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I am more convinced that dealing with environmental issues is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I feel more confident that I can deal with environmental issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I have gained more skills that will improve my management in relation to the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I intend to change the way I manage for environmental outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) I have actually made changes to the way I manage for environmental outcomes (mark no or yes below)					
<input type="radio"/> No	<input type="radio"/> Yes	(feel free to describe):			

Question 7 – Animal Welfare

What are the most significant *animal welfare* challenges for you?

Animal welfare challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
• Livestock husbandry and handling practices <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Livestock handling <i>outside my property</i> (e.g. transport to and from my property; welfare in saleyards)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Management of <i>native pest animal species</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Management of <i>non-native pest species</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Any others? Please add:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 8

As a result of participating in CLM, what are your views on your own management in relation to animal welfare?

As a result of participating in CLM:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of animal welfare has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am more convinced that managing for animal welfare is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel more confident that I can manage for animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I have gained more skills that will improve my management in relation to animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I manage for animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have actually changed management practices in relation to animal welfare (mark no or yes below)					
<input type="radio"/> No	<input type="radio"/> Yes	(feel free to describe):			

BENEFITS OF PARTICIPATING IN CLM – CURRENT & FUTURE

Question 9

Below is a list of hypothetical benefits of participation in CLM grouped around six broad categories (A-F).

- If you think you have received or are receiving any of the listed benefits now due to your participation in CLM, please mark the “Current” circle.
- If you are *not* getting the benefit now, but you expect to get the benefit in the future as long as you keep participating in CLM, please mark the “Future” circle.
- If you don’t think you’ve achieved or are achieving a listed benefit now *and* you don’t expect to achieve this benefit in the future, just leave it blank and move onto the next benefit in the list.

BENEFITS OF CLM?		Current	Future
A.	Productivity, financial and other business benefits		
1.	Production efficiencies and increased productivity (including savings in time or money)	<input type="radio"/>	<input type="radio"/>
2.	Improved profitability	<input type="radio"/>	<input type="radio"/>
3.	Product differentiation in the market-place	<input type="radio"/>	<input type="radio"/>
4.	Access to markets for my products (includes access to new markets and maintaining access to current markets)	<input type="radio"/>	<input type="radio"/>
5.	Price premium	<input type="radio"/>	<input type="radio"/>
6.	Reduced costs of insurance or finance	<input type="radio"/>	<input type="radio"/>
7.	Discounts on rates or other inputs	<input type="radio"/>	<input type="radio"/>
8.	Maintaining land values	<input type="radio"/>	<input type="radio"/>
9.	Maintaining social licence	<input type="radio"/>	<input type="radio"/>
10.	Access to funding (e.g. grants, subsidy from government or philanthropic group)	<input type="radio"/>	<input type="radio"/>
11.	Government concession (e.g. relief from regulation)	<input type="radio"/>	<input type="radio"/>
12.	Access to other forms of support (e.g. extension services and advice)	<input type="radio"/>	<input type="radio"/>

B. Risk management benefits			
13.	Reduced risk	<input type="radio"/>	<input type="radio"/>
14.	Reduced legal risk (i.e. reduced risk of prosecution and penalties for non-compliance)	<input type="radio"/>	<input type="radio"/>
15.	Reduced risk of having outsiders impose conditions on my management	<input type="radio"/>	<input type="radio"/>
16.	Maintaining access to natural resources	<input type="radio"/>	<input type="radio"/>
C. Benefits to others - family, staff, community, industry, etc.			
17.	Improved family and workplace relations and communications	<input type="radio"/>	<input type="radio"/>
18.	Broad benefits to the local community	<input type="radio"/>	<input type="radio"/>
19.	Broad benefit to industry as a whole	<input type="radio"/>	<input type="radio"/>
20.	Broad benefits to the wider community (regional, national, international)	<input type="radio"/>	<input type="radio"/>
21.	Broad benefits to my children or future generations	<input type="radio"/>	<input type="radio"/>
D. Personal and intrinsic benefits			
22.	Increased self-esteem	<input type="radio"/>	<input type="radio"/>
23.	Increased confidence in managing for environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>
24.	Increased personal satisfaction	<input type="radio"/>	<input type="radio"/>
25.	Enhanced sense of professionalism	<input type="radio"/>	<input type="radio"/>
26.	Recognition as a good land manager	<input type="radio"/>	<input type="radio"/>
27.	A moral benefit – the sense that I am doing the right thing	<input type="radio"/>	<input type="radio"/>
28.	Opportunity to work with like-minded people	<input type="radio"/>	<input type="radio"/>
29.	Social opportunities – chance to socialize	<input type="radio"/>	<input type="radio"/>
30.	Better health	<input type="radio"/>	<input type="radio"/>
31.	Community recognition	<input type="radio"/>	<input type="radio"/>
32.	Special interest group recognition (e.g. environmental groups, animal welfare groups)	<input type="radio"/>	<input type="radio"/>

E. Benefits to the environment and animal welfare			
33.	Improvement in the biophysical environment around me	<input type="radio"/>	<input type="radio"/>
34.	Benefits to nature	<input type="radio"/>	<input type="radio"/>
35.	Benefits to flora and fauna	<input type="radio"/>	<input type="radio"/>
36.	Improved welfare of animals	<input type="radio"/>	<input type="radio"/>
F. Benefits for planning			
37.	Compliance with natural resource management (NRM) regulation	<input type="radio"/>	<input type="radio"/>
38.	Achievement of local government requirements (e.g. Maranoa Regional Council)	<input type="radio"/>	<input type="radio"/>
39.	Achievement of the targets of the regional NRM body (e.g. Queensland Murray Darling Committee – QMDC)	<input type="radio"/>	<input type="radio"/>
40.	Integrated property planning	<input type="radio"/>	<input type="radio"/>
41.	Improved communication about my business with outside agencies and with mining, oil and coal seam gas companies	<input type="radio"/>	<input type="radio"/>
G. Any other benefits?			
	Feel free to add:	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>

MONITORING YOUR GOALS

Question 10

How do you work out whether you are achieving your management goals in relation to the environment and animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• I am not yet able to work out whether I'm achieving my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I use rules of thumb and assess my goals in my head	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I have prepared a baseline position for my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I track how my efforts have moved from the baseline position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I implement a written monitoring system for tracking progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 11

As a result of participating in CLM, what are your views on the way you monitor whether you are achieving your management goals for the environment and animal welfare?

As a result of participating in CLM:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of monitoring has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am more convinced that monitoring my goals is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel more confident that I can monitor my goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I have gained more skills in monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I monitor my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(f) I have actually changed management practices on my property to improve the monitoring of my goals (mark no or yes below)

No Yes (feel free to describe):

Question 12

If you have a written monitoring system, how useful is it? If you do not have a written monitoring system, skip this question and move on.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• I do not think the items I'm expected to monitor are relevant to my operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I only carry out the monitoring because it is required by someone else (e.g. government, regional NRM group, CLM, market specification etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I find the monitoring system useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I use the results of the monitoring system in my ongoing management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I adjust my management depending on the results of the monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 13

Since you started participating in CLM, have you noticed any changes in the state of the environment or animal welfare on your property? Please cross or mark the circle for the relevant option. Where any of the statements below applies to both environment *and* animal welfare, mark both circles. If any statement is not relevant to you, leave it blank.

Since I started participating in CLM:

- I have not noticed any changes
- I have noticed an improvement
- I have noticed a worsening
- I have noticed some things improving and some things getting worse
- I think something has changed but I'm not sure whether it's an actual change or an improvement in my powers of observation

Environment	Animal Welfare
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

Feel free to add notes about any changes you've observed:

LAWS & REGULATIONS

Question 14

As a result of participating in CLM, what are your views on the way you deal with laws and government regulations relating to the environment and animal welfare?

As a result of participating in CLM:

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of laws and regulations has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am more convinced that complying with laws and regulations is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel more confident that I can comply with laws and regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I have gained more skills for improved compliance with laws and regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I comply with law and regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>actually changed</i> the way I comply with law and regulation (mark no or yes below)					

No Yes (feel free to describe):

Question 15

What do you think about the laws and regulations that affect your management in relation to the environment and animal welfare?

On balance, the current laws and regulations are:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Mostly good for the environment <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Mostly good for the environment <i>in the wider district beyond my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Mostly good for animal welfare <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Mostly good for animal welfare <i>in my industry as a whole</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 16

Going into the future, how do you think laws and regulations will impact on your management in relation to the environment and animal welfare?

In the future, laws and regulations will:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Increase in number	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Become more complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Become more difficult to comply with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 17

Going into the future, how do you think voluntary programs such as CLM will affect the way you deal with laws and regulations?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
Going into the future, I think voluntary programs such as CLM will become more important to help me deal with laws and regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

EXTERNAL PARTIES

In this section, “external party” means any person or organization *outside* of your property and outside the enterprises that you and your family operate on your property.

Question 18

Which of the external parties listed below have a significant impact on your management in relation to the environment and animal welfare? Please mark the appropriate circle.

If any of the external parties listed below significantly impacts on *both* environment *and* animal welfare, mark both circles. If any has no impact on either option, *please leave blank*.

External parties:	Environment	Animal Welfare
• Environmental groups	<input type="radio"/>	<input type="radio"/>
• Animal welfare groups	<input type="radio"/>	<input type="radio"/>
• Regional NRM group (e.g. Queensland Murray Darling Committee – QMDC)	<input type="radio"/>	<input type="radio"/>
• Local Government (e.g. Maranoa Regional Council)	<input type="radio"/>	<input type="radio"/>
• State Government	<input type="radio"/>	<input type="radio"/>
• Commonwealth Government	<input type="radio"/>	<input type="radio"/>
• Suppliers of inputs (e.g. fertilizers, chemicals, seed, livestock services)	<input type="radio"/>	<input type="radio"/>
• Selling agents (e.g. stock and station agents)	<input type="radio"/>	<input type="radio"/>
• Insurers, banks and other financiers	<input type="radio"/>	<input type="radio"/>
• Australian retailers (e.g. Coles, Woolworths)	<input type="radio"/>	<input type="radio"/>
• International retailers	<input type="radio"/>	<input type="radio"/>
• Australian consumers	<input type="radio"/>	<input type="radio"/>
• International consumers	<input type="radio"/>	<input type="radio"/>
• Mining, oil, and coal seam gas companies	<input type="radio"/>	<input type="radio"/>
• Peers	<input type="radio"/>	<input type="radio"/>
• Local community	<input type="radio"/>	<input type="radio"/>
• My industry	<input type="radio"/>	<input type="radio"/>
• Any others? Feel free to add:	<input type="radio"/>	<input type="radio"/>

Question 19

As a result of participating in CLM, what are your views on the way you go about dealing with external parties in relation to environment and animal welfare?

As a result of participating in CLM:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of external parties' expectations has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am more convinced that dealing with external parties' expectations is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel more confident that I can deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I have more skills for dealing with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I <i>intend</i> to change the way I deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>actually changed</i> the way I deal with external parties' expectations (mark no or yes below)					

No Yes (feel free to describe):

Question 20

What do you think about external parties' expectations on your management in relation to environment and animal welfare?

On balance, I think external parties' expectations are:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Mostly good for the environment <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Mostly good for the environment <i>in the wider district beyond my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Mostly good for animal welfare <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Mostly good for animal welfare <i>in my industry as a whole</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 21

Going into the future, how do you think external parties' expectations will affect your management of the environment and animal welfare?

In the future, I think external parties' expectations will:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• Increase in number	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Become more complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Become more difficult to comply with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 22

Going into the future, how do you think voluntary programs such as CLM will affect the way you deal with external parties' expectations?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
Going into the future, I think voluntary programs such as CLM will become more important to help me deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MANAGEMENT PLANS, AUDITING & CERTIFICATION

Question 23

How do you regard your CLM management plan (i.e. the plan against which you would be audited)?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) I regard my CLM management plan as a planning or aspirational document for internal use only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I regard my CLM management plan as a commitment to external parties and I aim to be accountable to them for the targets in my plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 24

How useful do you think CLM's auditing and certification process is now or in the future?

	Very useful	Useful	A bit useful	Not useful	Don't know
(a) Currently, for me auditing & certification is ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) In the future, auditing & certification will be ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 25

If you answered "Not useful" above, what are the barriers to certification being more useful?

Barriers?	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• Cost of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Lack of benefits to offset the costs of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Uncertainty about the benefits of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Complexity of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Any others? Feel free to add:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

.....

DEMONSTRATING ENVIRONMENTAL & ANIMAL WELFARE OUTCOMES

In this section, “demonstrating” means the way you would prove or show to external parties that you are managing your land and animal welfare well.

Question 26

As a result of participating in CLM, what are your views on *demonstrating* environmental and animal welfare outcomes?

As a result of participating in CLM:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of <i>demonstrating</i> environmental and animal welfare outcomes has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am more convinced that <i>demonstrating</i> outcomes is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel more confident that I can <i>demonstrate</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I have more skills in <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to implement a system of <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>successfully demonstrated</i> environmental and animal welfare outcomes to an external party (mark no or yes below)					
	<input type="radio"/> No	<input type="radio"/> Yes	(feel free to describe):		

Question 27

Going into the future, how important will it be for landholders to demonstrate environmental and animal welfare outcomes? What role will voluntary programs such as CLM play?

Going into the future, I think that:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Demonstrating environmental and animal welfare outcomes will become increasingly required of landholders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Voluntary programs such as CLM will become more important to help me demonstrate outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

RECOGNITION

In this section, “recognition” means an external party *acknowledges* the fact that it is satisfied with your management in relation to the environment or animal welfare.

Question 28

If recognition is one of your aims for participating in CLM, ideally, from whom would you like to receive recognition?

Ideally, I would like to receive recognition from:

- Environmental groups
- Animal welfare groups
- Regional NRM group
- (e.g. Queensland Murray Darling Committee)
- Local Government (e.g. Maranoa Regional Council)
- State Government
- Commonwealth Government
- Suppliers of inputs (e.g. fertilizers, chemicals, seed, livestock services)
- Selling agents (e.g. stock and station agents)
- Insurers, banks and other financiers
- Australian retailers (e.g. Coles, Woolworths)
- International retailers
- Australian consumers
- International consumers
- Mining, oil, and coal seam gas companies
- Peers
- Local community
- My industry
- Any others? Feel free to add:

.....

Environment	Animal Welfare
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

Question 29

If you nominated some groups from whom you want recognition in the previous question, ideally, how would you like to be recognized for your management in relation to the environment and animal welfare?

If any recognition measure is not relevant to you, then please leave it blank.

Possible recognition measures?	Environment	Animal Welfare
• Simple acknowledgement (public or private) recognizing me as a good manager	<input type="radio"/>	<input type="radio"/>
• A recognized brand to differentiate my products	<input type="radio"/>	<input type="radio"/>
• Access to markets for my products	<input type="radio"/>	<input type="radio"/>
• A price premium	<input type="radio"/>	<input type="radio"/>
• Reduced costs of insurance or finance	<input type="radio"/>	<input type="radio"/>
• Other discounts on rates and inputs	<input type="radio"/>	<input type="radio"/>
• Access to funding and grants	<input type="radio"/>	<input type="radio"/>
• Government concession (e.g. relief from regulation)	<input type="radio"/>	<input type="radio"/>
• Access to other forms of support (e.g. extension services and advice)	<input type="radio"/>	<input type="radio"/>
• Continued access to natural resources	<input type="radio"/>	<input type="radio"/>
• Community recognition	<input type="radio"/>	<input type="radio"/>
• Special interest group recognition (e.g. by environmental groups, animal welfare groups, etc.)	<input type="radio"/>	<input type="radio"/>
• Any others? Feel free to add:	<input type="radio"/>	<input type="radio"/>

Question 30

As a result of your participation in CLM, have you already received some recognition for your management in relation to the environment or animal welfare? (Mark no or yes below)

- No Yes (feel free to describe):

Recognized by:

Recognition measure/result:

Question 31

Going into the future, what are your thoughts about recognition and the role of voluntary programs such as CLM?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Even though I may not be gaining recognition now, I foresee that I will be recognized in the future as long as I continue participating in CLM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Going into the future, I think that recognition will be more and more dependent on my <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Going into the future, I think that voluntary programs such as CLM will become more and more important to help me gain recognition for my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

LINKS WITH OTHER PROGRAMS

Question 32

(a) When did you start participating in CLM? **Year (approx):**

(b) In addition to CLM, are you involved with other programs or schemes that affect your management in relation to the environment or animal welfare? If easily recalled, please write below the name of the program and approximate years you participated (e.g. 2004-09). If you can't recall these details, simply cross the appropriate box (or both boxes if a program impacts on both environment and animal welfare).

Programs that relate to:

- Productivity programs (e.g. pastures, crops, livestock, soils, water management).
- Industry programs
- Any other environmental or natural resource management-type programs
- Food safety and hygiene
- Quality assurance
- Financial planning
- Property planning
- Animal welfare programs
- Landcare
- Occupational health & safety
- Any others? Feel free to add:

Name & years participated (approx.)

Environment	Animal Welfare

Question 33

If you have highlighted more than one program above, how do they interact with each other?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) These programs fit well with each other and they complement each other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) There is too much duplication amongst the programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

GENERAL VIEWS ON THE ENVIRONMENT

Question 34

Do you agree or disagree that:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) We are approaching the limit of the number of people the earth can support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Humans have the right to modify the natural environment to suit their needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) When humans interfere with nature it often produces disastrous consequences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Human ingenuity will insure that we do NOT make the earth unliveable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Humans are severely abusing the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) The earth has plenty of natural resources if we just learn how to develop them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) Plants and animals have as much right as humans to exist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) The balance of nature is strong enough to cope with the impacts of modern industrial nations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(i) Despite our special abilities humans are still subject to the laws of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(j) The so-called "ecological crisis" facing humankind has been greatly exaggerated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(k) The earth is like a spaceship with very limited room and resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(l) Humans were meant to rule over the rest of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(m) The balance of nature is very delicate and easily upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(n) Humans will eventually learn enough about how nature works to be able to control it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(o) If things continue on their present course, we will soon experience a major ecological catastrophe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SUGGESTIONS

Question 35

(a) Is there anything else you'd like to add about your experience participating in CLM?

.....

(b) Would you have any other suggestions about voluntary programs for managing for environmental and animal welfare outcomes such as CLM?

.....

Appendix 4: Farmer Survey Form for Non-Participants

BACKGROUND INFORMATION

Question 1 – Enterprises

How would you describe the enterprises on your property? Please cross or mark the circle of the relevant options. Choose as many options as you wish. Please estimate the approximate size of your operations, using whatever measures you usually use to describe your operations (e.g. head of livestock, tonnage, acreage, etc.)

	Approximate size of operation
<input type="radio"/> Broadacre grazing livestock	
<input type="radio"/> Intensive animal enterprise (dairy, piggery, poultry, aquaculture, etc.)	
<input type="radio"/> Broadacre dryland cropping	
<input type="radio"/> Broadacre irrigated cropping	
<input type="radio"/> Intensive plant production (e.g. glasshouse)	
<input type="radio"/> Pasture or fodder production	
<input type="radio"/> Horticulture	
<input type="radio"/> Orchard	
<input type="radio"/> Enterprise based on feral or wild animals	
<input type="radio"/> Ecosystems services	
<input type="radio"/> Environmental management	
<input type="radio"/> Nature conservation	
<input type="radio"/> Real estate management	
<input type="radio"/> Tourism or homestay	
<input type="radio"/> Other (please add):	

Question 2 – Your property and district

Postcode

--	--	--	--

 Do you live on your property? No Yes

Local government area: Regional NRM group:

Question 3

How would you describe yourself?

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

If more than one person is completing this survey together (as a family or business team), please provide details for all team members below.

Team member 2:

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

Team member 3:

<input type="radio"/> Principal/Owner/Director <input type="radio"/> Business Partner <input type="radio"/> Manager <input type="radio"/> Family member <input type="radio"/> Staff member <input type="radio"/> Other:	Sex:	Age:
	Education: <input type="radio"/> School <input type="radio"/> TAFE, trade qualification, diploma <input type="radio"/> University	

Question 4

How would you describe your enterprise structure?

- Family operation – family members work on the property
- Corporate operation – operated by shareholders and directors who don't work on the property. The corporation engages managers and other staff to work on the property
- Sole operator – owner works on the property
- Non-profit or philanthropic or social enterprise – employs staff who work on the property
- Other:

ENVIRONMENTAL & ANIMAL WELFARE ISSUES

Question 5 – Environment

From the list below, what are the most significant environmental challenges on your property and in the wider district beyond your property? Please cross or mark the appropriate circle to indicate importance to you.

Environmental challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
• Soil issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pasture or crop issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Water resources issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Native vegetation issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Climate issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Greenhouse gas issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Weeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pest animals – native	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Pest animals – non-native	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Nature conservation and biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Economic challenges on my property or in the district that affect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Social challenges on my property or in the district	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Environmental challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
that affect the environment					
• Any others? Please add:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
.....					

Question 6

Below are some statements about your views on your own management in relation to the environment. Please indicate whether you agree or disagree with each statement by crossing or marking the circle that best matches your response.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of environmental issues <i>on my property</i> needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) My knowledge of environmental issues <i>in the wider district</i> needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Dealing with environmental issues is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I feel confident that I can deal with environmental issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I need more skills to improve my management in relation to the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I intend to change the way I manage for environmental outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) I have actually made changes to the way I manage for environmental outcomes (please mark no or yes below)					
<input type="radio"/> No					
<input type="radio"/> Yes (feel free to describe):					
.....					

Question 7 – Animal Welfare

What are the most significant *animal welfare* challenges for you?

Animal welfare challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
• Livestock husbandry and handling practices <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Livestock handling <i>outside my property</i> (e.g. transport to and from my property; welfare in saleyards)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Animal welfare challenges:	Very important	Important	Somewhat Important	Not important	Don't Know
• Management of <i>native pest animal species</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Management of <i>non-native pest species</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Any others? Please add:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

.....

Question 8

What are your views on your own management in relation to animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of animal welfare needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Managing for animal welfare is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel confident that I can manage for animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I need more skills to improve my management in relation to animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I manage for animal welfare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have actually changed management practices in relation to animal welfare (please mark no or yes below)					
<input type="radio"/> No	<input type="radio"/> Yes	(feel free to describe):			

.....

**BENEFITS OF MANAGING FOR ENVIRONMENTAL & ANIMAL WELFARE OUTCOMES–
CURRENT & FUTURE**

Question 9

Below is a list of hypothetical benefits of managing for environmental and animal welfare outcomes, grouped around six broad categories (A-F).

- If you think you have received or are receiving any of the listed benefits now as a result of the way you manage for environmental and animal welfare outcomes, please mark the “Current” circle.
- If you are *not* getting the benefit now, but you expect to get the benefit in the future as long as you keep managing for environmental and animal welfare outcomes, please mark the “Future” circle.
- If you don’t think you’ve achieved or are achieving a listed benefit now *and* you don’t expect to achieve this benefit in the future, just leave it blank and move onto the next benefit in the list.

BENEFITS?		Current	Future
A.	Productivity, financial and other business benefits		
1.	Production efficiencies and increased productivity (including savings in time or money)	<input type="radio"/>	<input type="radio"/>
2.	Improved profitability	<input type="radio"/>	<input type="radio"/>
3.	Product differentiation in the market-place	<input type="radio"/>	<input type="radio"/>
4.	Access to markets for my products (includes access to new markets and maintaining access to current markets)	<input type="radio"/>	<input type="radio"/>
5.	Price premium	<input type="radio"/>	<input type="radio"/>
6.	Reduced costs of insurance or finance	<input type="radio"/>	<input type="radio"/>
7.	Discounts on rates or other inputs	<input type="radio"/>	<input type="radio"/>
8.	Maintaining land values	<input type="radio"/>	<input type="radio"/>
9.	Maintaining social licence	<input type="radio"/>	<input type="radio"/>
10.	Access to funding (e.g. grants, subsidy from government or philanthropic group)	<input type="radio"/>	<input type="radio"/>
11.	Government concession (e.g. relief from regulation)	<input type="radio"/>	<input type="radio"/>
12.	Access to other forms of support (e.g. extension services and advice)	<input type="radio"/>	<input type="radio"/>

B. Risk management benefits			
13.	Reduced risk	<input type="radio"/>	<input type="radio"/>
14.	Reduced legal risk (i.e. reduced risk of prosecution and penalties for non-compliance)	<input type="radio"/>	<input type="radio"/>
15.	Reduced risk of having outsiders impose conditions on my management	<input type="radio"/>	<input type="radio"/>
16.	Maintaining access to natural resources	<input type="radio"/>	<input type="radio"/>
C. Benefits to others - family, staff, community, industry, etc.			
17.	Improved family and workplace relations and communications	<input type="radio"/>	<input type="radio"/>
18.	Broad benefits to the local community	<input type="radio"/>	<input type="radio"/>
19.	Broad benefit to industry as a whole	<input type="radio"/>	<input type="radio"/>
20.	Broad benefits to the wider community (regional, national, international)	<input type="radio"/>	<input type="radio"/>
21.	Broad benefits to my children or future generations	<input type="radio"/>	<input type="radio"/>
D. Personal and intrinsic benefits			
22.	Increased self-esteem	<input type="radio"/>	<input type="radio"/>
23.	Increased confidence in managing for environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>
24.	Increased personal satisfaction	<input type="radio"/>	<input type="radio"/>
25.	Enhanced sense of professionalism	<input type="radio"/>	<input type="radio"/>
26.	Recognition as a good land manager	<input type="radio"/>	<input type="radio"/>
27.	A moral benefit – the sense that I am doing the right thing	<input type="radio"/>	<input type="radio"/>
28.	Opportunity to work with like-minded people	<input type="radio"/>	<input type="radio"/>
29.	Social opportunities – chance to socialize	<input type="radio"/>	<input type="radio"/>
30.	Better health	<input type="radio"/>	<input type="radio"/>
31.	Community recognition	<input type="radio"/>	<input type="radio"/>
32.	Special interest group recognition (e.g. environmental groups, animal welfare groups)	<input type="radio"/>	<input type="radio"/>

E. Benefits to the environment and animal welfare

- 33. Improvement in the biophysical environment around me
- 34. Benefits to nature
- 35. Benefits to flora and fauna
- 36. Improved welfare of animals

F. Benefits for planning

- 37. Compliance with natural resource management (NRM) regulation
- 38. Achievement of local government requirements (e.g. Maranoa Regional Council)
- 39. Achievement of the targets of the regional NRM body (e.g. Queensland Murray Darling Committee – QMDC)
- 40. Integrated property planning
- 41. Improved communication about my business with outside agencies and with mining, oil and coal seam gas companies

G. Any other benefits?

Feel free to add:

.....
.....

-
-

MONITORING YOUR GOALS

Question 10

How do you work out whether you are achieving your management goals in relation to the environment and animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• I am not yet able to work out whether I'm achieving my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I use rules of thumb and assess my goals in my head	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I have prepared a baseline position for my property	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I track how my efforts have moved from the baseline position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I implement a written monitoring system for tracking progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 11

What are your views on the way you monitor whether you are achieving your management goals for the environment and animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of monitoring needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Monitoring my goals is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel confident that I can monitor my goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I need more skills to improve monitoring of my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I monitor my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have actually changed management practices on my property to improve the monitoring of my goals (please mark no or yes below)					

No

Yes (feel free to describe):

.....

Question 12

If you have a written monitoring system, how useful is it? If you do not have a written monitoring system, skip this question and move on.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• I do not think the items I'm expected to monitor are relevant to my operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I only carry out the monitoring because it is required by someone else (e.g. government, regional NRM group, market specifications, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I find the monitoring system useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I use the results of the monitoring system in my ongoing management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• I adjust my management depending on the results of the monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 13

Have you noticed any changes in the state of the environment or animal welfare on your property? Please cross or mark the circle for the relevant option. Where any of the statements below applies to both environment *and* animal welfare, mark both circles. If any statement is not relevant to you, leave it blank.

	Environment	Animal Welfare
• I have not noticed any changes	<input type="radio"/>	<input type="radio"/>
• I have noticed an improvement	<input type="radio"/>	<input type="radio"/>
• I have noticed a worsening	<input type="radio"/>	<input type="radio"/>
• I have noticed some things improving and some things getting worse	<input type="radio"/>	<input type="radio"/>
• I think something has changed but I'm not sure whether it's an actual change or an improvement in my powers of observation	<input type="radio"/>	<input type="radio"/>

Feel free to add notes about any changes you've observed:

LAWS & REGULATIONS

Question 14

What are your views on the way you deal with laws and government regulations relating to the environment and animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of laws and regulations needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Complying with laws and regulations is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel confident that I can comply with laws and regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I need more skills to improve compliance with laws and regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to change the way I comply with law and regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>actually changed</i> the way I comply with law and regulation (mark no or yes below)					

No Yes (feel free to describe):

Question 15

What do you think about the laws and regulations that affect your management in relation to the environment and animal welfare?

On balance, the current laws and regulations are:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Mostly good for the environment <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Mostly good for the environment <i>in the wider district beyond my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Mostly good for animal welfare <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Mostly good for animal welfare <i>in my industry as a whole</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 16

Going into the future, how do you think laws and regulations will impact on your management in relation to the environment and animal welfare?

In the future, laws and regulations will:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Increase in number	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Become more complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Become more difficult to comply with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 17

Going into the future, how do you think voluntary programs for landholders will affect the way you deal with laws and regulations?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
Going into the future, I think voluntary programs for landholders will become more important to help me deal with laws and regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 19

What are your views on the way you go about dealing with external parties in relation to environment and animal welfare?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of external parties' expectations needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I am convinced that dealing with external parties' expectations is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel confident that I can deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I need more skills for dealing with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I <i>intend</i> to change the way I deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>actually changed</i> the way I deal with external parties' expectations (please mark no or yes below)					

No Yes (feel free to describe):

Question 20

What do you think about external parties' expectations on your management in relation to environment and animal welfare?

On balance, I think external parties' expectations are:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Mostly good for the environment <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Mostly good for the environment <i>in the wider district beyond my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Mostly good for animal welfare <i>on my property</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Mostly good for animal welfare <i>in my industry as a whole</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 21

Going into the future, how do you think external parties' expectations will affect your management of the environment and animal welfare?

In the future, I think external parties' expectations will:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• Increase in number	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Become more complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Become more difficult to comply with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 22

Going into the future, how do you think voluntary programs for landholders will affect the way you deal with external parties' expectations?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
Going into the future, I think voluntary programs for landholders will become more important to help me deal with external parties' expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MANAGEMENT PLANS, AUDITING & CERTIFICATION

Question 23

Do you have a management plan in relation to the environment and animal welfare? If yes, how do you regard your management plan? If you don't have a management plan, please move onto the next question.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) I regard my management plan as a planning or aspirational document for internal use only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I regard my management plan as a commitment to external parties and I aim to be accountable to them for the targets in my plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 24

How useful do you think auditing and certification of your management would be now or in the future?

	Very useful	Useful	A bit useful	Not useful	Don't know
(a) Currently, for me auditing and certification would be ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) In the future, auditing and certification would be ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 25

If you answered "Not useful" above, what are the barriers to auditing and certification being more useful?

Barriers?	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
• Cost of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Lack of benefits to offset the costs of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Uncertainty about the benefits of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Complexity of audit & certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Any others? Feel free to add:					

.....

DEMONSTRATING ENVIRONMENTAL & ANIMAL WELFARE OUTCOMES

In this section, “demonstrating” means the way you would prove or show to external parties that you are managing your land and animal welfare well.

Question 26

What are your views on *demonstrating* environmental and animal welfare outcomes?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) My knowledge of <i>demonstrating</i> environmental and animal welfare outcomes needs improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) <i>Demonstrating</i> outcomes is beneficial or worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I feel confident that I can <i>demonstrate</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I need more skills in <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I intend to implement a system of <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I have <i>successfully demonstrated</i> environmental and animal welfare outcomes to an external party (mark no or yes below)					
<input type="radio"/> No	<input type="radio"/> Yes	(feel free to describe):			
.....					

Question 27

Going into the future, how important will it be for landholders to demonstrate environmental and animal welfare outcomes? What role will voluntary programs for landholders play?

Going into the future, I think that:	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Demonstrating environmental and animal welfare outcomes will become increasingly required of landholders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Voluntary programs for landholders will become more important to help me demonstrate outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

RECOGNITION

In this section, “recognition” means an external party *acknowledges* the fact that it is satisfied with your management in relation to the environment or animal welfare.

Question 28

If recognition is one of the aims of your management in relation to the environment or animal welfare, ideally, from whom would you like to receive recognition?

Ideally, I would like to receive recognition from:

- Environmental groups
- Animal welfare groups
- Regional NRM group
- (e.g. Queensland Murray Darling Committee)
- Local Government
(e.g. Maranoa Regional Council)
- State Government
- Commonwealth Government
- Suppliers of inputs (e.g. fertilizers, chemicals, seed, livestock services)
- Selling agents (e.g. stock and station agents)
- Insurers, banks and other financiers
- Australian retailers
(e.g. Coles, Woolworths)
- International retailers
- Australian consumers
- International consumers
- Mining, oil, and coal seam gas companies
- Peers
- Local community
- My industry
- Any others? Feel free to add:

Environment

Animal Welfare

Question 29

If you nominated some groups from whom you want recognition in the previous question, ideally, how would you like to be recognized for your management in relation to the environment and animal welfare?

If any recognition measure is not relevant to you, then please leave it blank.

Possible recognition measures?	Environment	Animal Welfare
• Simple acknowledgement (public or private) recognizing me as a good manager	<input type="radio"/>	<input type="radio"/>
• A recognized brand to differentiate my products	<input type="radio"/>	<input type="radio"/>
• Access to markets for my products	<input type="radio"/>	<input type="radio"/>
• A price premium	<input type="radio"/>	<input type="radio"/>
• Reduced costs of insurance or finance	<input type="radio"/>	<input type="radio"/>
• Other discounts on rates and inputs	<input type="radio"/>	<input type="radio"/>
• Access to funding and grants	<input type="radio"/>	<input type="radio"/>
• Government concession (e.g. relief from regulation)	<input type="radio"/>	<input type="radio"/>
• Access to other forms of support (e.g. extension services and advice)	<input type="radio"/>	<input type="radio"/>
• Continued access to natural resources	<input type="radio"/>	<input type="radio"/>
• Community recognition	<input type="radio"/>	<input type="radio"/>
• Special interest group recognition (e.g. by environmental groups, animal welfare groups, etc.)	<input type="radio"/>	<input type="radio"/>
• Any others? Feel free to add:	<input type="radio"/>	<input type="radio"/>
.....		

Question 30

As a result of your management in relation to the environment or animal welfare, have you already received some recognition? (Mark no or yes below)

- No Yes (feel free to describe):

Recognized by:

Recognition measure/result:

Question 31

Going into the future, what are your thoughts about recognition and the role of voluntary programs for landholders?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) Even though I may not be gaining recognition now, I foresee that I will be recognized in the future as long as I continue managing for environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Going into the future, I think that recognition will be more and more dependent on my <i>demonstrating</i> environmental and animal welfare outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Going into the future, I think that voluntary programs for landholders will become more and more important to help me gain recognition for my management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

LINKS WITH OTHER PROGRAMS

Question 32

Are you involved with any programs or schemes that affect your management in relation to the environment or animal welfare? If easily recalled, please write below the name of the program and approximate years you participated (e.g. 2004-09). If you can't recall these details, simply cross the appropriate box (or both boxes if a program impacts on both environment and animal welfare).

Programs that relate to:

- Productivity programs (e.g. pastures, crops, livestock, soils, water management).
- Industry programs
- Any other environmental or natural resource management-type programs
- Food safety and hygiene
- Quality assurance
- Financial planning
- Property planning
- Animal welfare programs
- Landcare
- Occupational health & safety
- Any others? Feel free to add:

Name & years participated (approx.)

Environment	Animal Welfare

Question 33

If you have highlighted more than one program above, how do they interact with each other?

- | | Strongly agree | Agree | Disagree | Strongly disagree | Don't know |
|--|-----------------------|-----------------------|-----------------------|--------------------------|-----------------------|
| (a) These programs fit well with each other and they complement each other | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (b) There is too much duplication amongst the programs | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

GENERAL VIEWS ON THE ENVIRONMENT

Question 34

Do you agree or disagree that:

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
(a) We are approaching the limit of the number of people the earth can support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Humans have the right to modify the natural environment to suit their needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) When humans interfere with nature it often produces disastrous consequences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Human ingenuity will insure that we do NOT make the earth unliveable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Humans are severely abusing the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) The earth has plenty of natural resources if we just learn how to develop them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) Plants and animals have as much right as humans to exist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) The balance of nature is strong enough to cope with the impacts of modern industrial nations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(i) Despite our special abilities humans are still subject to the laws of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(j) The so-called "ecological crisis" facing humankind has been greatly exaggerated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(k) The earth is like a spaceship with very limited room and resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(l) Humans were meant to rule over the rest of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(m) The balance of nature is very delicate and easily upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(n) Humans will eventually learn enough about how nature works to be able to control it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(o) If things continue on their present course, we will soon experience a major ecological catastrophe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SUGGESTIONS

Question 35

- (a) Is there anything else you'd like to add about your experience of managing for environmental and animal welfare outcomes?
- (b) Would you have any other suggestions about voluntary programs for managing for environmental and animal welfare outcomes?

Appendix 5: Survey Questions Correlated with Conceptual Framework

Table A1: Survey elements common to both participants and non-participants

Survey Qs	Survey Element	Conceptual Framework Element
1-4	Demographic and enterprise information	General
5 & 7	Significant environmental and animal welfare challenges	2 & 3
12	Perception of the usefulness of monitoring systems	1 & 9
15 & 20	Perception of the legitimacy of laws, regulations and external stakeholders' expectations	6
16 & 21	Future impact of laws, regulations and external stakeholders' expectations	6
18	External stakeholders with significant impacts on the interviewee's operations	6
25	Barriers to improving the usefulness of auditing and certification	3, 7 & 8
28	Recognition from external stakeholders	8
29	Modes of preferred recognition	8
32	Other programs in which respondent participates	6, 7 & 8
33	Interactions between different environmental and animal welfare programs	6, 7 & 8
34	General views on the environment	3

Table A2: Survey elements differing between participants and non-participants

Survey Qs	Survey Element		Concept. F/work Element
	Certification scheme participants	Non-participants	
6 & 8	Environmental and animal welfare management as a result of participating in the certification scheme	Environmental and animal welfare management generally	2 & 3
9	Benefits of participation in the certification scheme	Benefits of managing for environmental and animal welfare outcomes	4, 5 & 9
13	Tangible changes as a result of participating in the certification scheme	Tangible changes generally	2 & 3
14 & 19	Dealing with laws, regulations and external stakeholder's expectations, as a result of participating in the certification scheme	Dealing with laws, regulations and external stakeholder's expectations generally	6
17 & 22	Utility of the certification scheme for dealing with future impacts of laws, regulations and external stakeholders' expectations	Utility of voluntary programs generally for dealing with future impacts of laws, regulations and external stakeholders' expectations	6
23	Internal or external focus of the certification scheme Management Plans	Internal or external focus of general environmental and animal welfare management plans	6
24	Usefulness of the certification scheme's auditing and certification processes	Usefulness of auditing and certification processes generally	7 & 8
26	Demonstrating environmental and animal welfare outcomes as a result of participating in the certification scheme	Demonstrating environmental and animal welfare outcomes generally	7
27	Future requirements for demonstration and the potential role of the certification scheme	Future requirements for demonstration and the potential role of voluntary programs generally	7
30	Recognition from external stakeholders received to date as result of participating in the certification scheme	Recognition from external stakeholders received to date as result of environmental and animal welfare management	8 & 9
31	Future recognition and the potential role of the certification scheme	Future recognition and the potential role of voluntary programs generally	8 & 9
32	Duration of participation in the certification scheme and participation in other environmental or animal welfare-type programs	Participation in environmental or animal welfare-type programs generally	1
35	Additional thoughts and suggestions about the certification scheme	Additional thoughts and suggestions about voluntary programs in general	All

Appendix 6: Farmer Profile Matrix

		Domains												
		Environ- ment		Animal welfare		Monitoring		Laws & Regulations		External stakeholder expectations		Demon- strating outcomes		
Level in modified Bennett's Hierarchy	FOR VSP PARTICIPANTS: As a result of participating in the VSP, does the participant-farmer believe he or she:													
	6.	-	<i>Changed</i> practices in relation to the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	5.	-	Intends to change practices in relation to the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	4.	-	Has more skills for dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	3.	-	Is more confident in dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	2.	-	Is more convinced of the benefits of dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	1.	-	Has improved his/her knowledge of the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
		FOR NON-PARTICIPANTS: In managing for environment and animal welfare generally, does the non-participant farmer believe he or she:												
	6.	-	<i>Changed</i> practices in relation to the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	5.	-	Intends to change practices in relation to the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	4.	-	<i>Needs</i> more skills for dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	3.	-	Is confident in dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	2.	-	Is convinced of the benefits of dealing with the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	
	1.	-	<i>Needs</i> to improve his/her knowledge of the domain?	Yes/	No	Yes/	No	Yes/	No	Yes/	No	Yes/	No	

Appendix 7: Methodology, Conceptual Framework and Research Questions

(DA=document analysis; TI= CLM trainer interview; EI=external stakeholder interviews; FI=farmer interviews; FS=farmer surveys; BH=Bennett's Hierarchy)

Element	Research Question	Case Study Perspective	Method					Details
			DA	TI	EI	FI	FS	
1 Management procedures	1. Does the VSP help participating farmers follow good management procedures?	<i>Design</i> : VSP's opportunities and support for participants to learn procedures.	X	X				
		<i>Farmers' perceptions</i> : Goal-setting, monitoring, participation in the VSP.				X		FI: Q 4; FS: Consolidated BH.
2 Managing impacts on the environment and animal welfare	2. Does the VSP help farmers manage their impacts on the environment and animal welfare?	<i>Design</i> : VSP's approach to management.	X	X				
		<i>Farmers' perceptions</i> : Environment, animal welfare, goal-setting, monitoring, and the effect of participation on these.				X	X	FI: Qs 1-5; FS: Qs 5, 7, 10, 12, 13, BH Qs 6, 8, 11.
	3. Does the VSP help farmers harness behavioural self-regulation?	<i>Design</i> : VSP's consistency with psychological mechanisms of self-regulation (Bandura 1986, 1997).	X	X				
	4. Does the VSP facilitate internalization of stewardship norms by farmers?	<i>Design</i> : VSP's consistency with 14 attributes for internalization of norms (Stobbelaar et al, 2009, summarized in Table 2-2).	X	X				Table 2-2 keywords: 1. Information; 2. Rationale; 3. Explanation; 4. Tailoring; 5. Builds competence; 6. Enhances means; 7. Co-operation; 8. Peer support; 9. Interdependence; 10. 'Horizontal collectivism'; 11. Choice; 12. Responsibility; 13. Trust-building; 14. Matching cost & benefit.
3 Achieving environmental and animal welfare outcomes	5. Does the VSP help farmers achieve environmental and animal welfare outcomes?	<i>Design</i> : VSP's opportunities for participants to learn about environment and animal welfare.	X	X				
		<i>Farmers' perceptions</i> : (as per Research Question 2) Environment, animal welfare, goal-setting, monitoring, and the effect of participation on these.				X	X	As per Research Question 2 above.
6		<i>Design</i> :	X	X				

Element	Research Question	Case Study Perspective	Method					Details
			D A	T I	E I	F I	F S	
Understanding stakeholders' expectations	6. Does the VSP help farmers understand external stakeholders' expectations?	<ul style="list-style-type: none"> VSP's opportunities for participants to learn about external stakeholder expectations. 						Table 4-2 keywords: 1. Risk identification; 2. Transparency; 3. Linkages; 4. Diversity; 5. Beyond compliance; 6. Continuous improvement; 7. Demonstration; 8. Verification; 9. Integrity; 10. Holism; 11. Measurable outcomes. FI: Qs 6, 7; FS: Qs 15-18, 20-22, BH Qs 14, 19.
		<ul style="list-style-type: none"> VSP's alignment with 11 ideal features desired by interviewed external stakeholders. 	X	X	X			
		<i>Farmers' perceptions:</i> law, regulations, and external stakeholders generally.				X	X	
7 Demonstration	7. Does the VSP help farmers demonstrate environmental and animal welfare outcomes?	<i>Design:</i> VSP's platform/facility for demonstration, and integrity measures.	X	X				FI: Q 8; FS: Qs 23-25, 27, BH Q 26.
		<i>Farmers' perceptions:</i> planning, auditing, certification, and demonstration.				X	X	
4, 5 & 9 Benefits	8. Does the VSP facilitate the creation of mutual benefits for non-farmers and farmers?	<i>Design:</i> VSP's platform for a transfer of benefits between non-farmers & farmers	X	X				FI: Q10; FS: Qs 9, 32, 33.
		<i>Farmers' perceptions:</i> public and private benefits, and VSP's links with other programs.				X	X	
8 Recognition	9. Does the VSP facilitate recognition by non-farmers of the reciprocal responsibility of stewardship?	<i>Design:</i> VSP's platform for recognition	X	X				FI: Q 9; FS: Qs 28-31.
		<i>Farmers' perceptions:</i> recognition.				X	X	

Appendix 8: Case Study Similarities and Contrasts

	CLM		Organic	
	CLM Participants	Non-participants	ACO	FOGG
Distinguishing features of each case	Less altered, sensitive rangeland landscapes		<ul style="list-style-type: none"> Highly altered landscapes 	
			<ul style="list-style-type: none"> Conventionally high chemical industry Smaller farms 	<ul style="list-style-type: none"> High conservation values of national significance Common pool resource management
Similarities between cases	All voluntary, non-government, environmental certification schemes for farmers			
Similarity of interviewees <i>within</i> each case	<ul style="list-style-type: none"> Same district (Maranoa) Same enterprises (extensive beef cattle grazing) 		<ul style="list-style-type: none"> All certified organic farmers 	
			<ul style="list-style-type: none"> Same enterprise (intensive mixed fruit and vegetable production) 	<ul style="list-style-type: none"> Same district (Lowbidgee) Same enterprise (irrigated cereal production)
Contrast between case studies	Non-organic		Organic	
Contrast of interviewees <i>within</i> each case	Participants vs Non-participants		Enterprise and district contrast	

Appendix 9: Interviews, Interviewees, and Surveys by Cohort

	Farmers							External stakeholders and CLM trainer						
	CLM participants		Non-participants		FOGG	ACO	Total	CLM trainer	NGOs (Environment & animal welfare)	Commonwealth Government	Regional NRM	Academic researchers	Total	
	No. Interviews	No. people	No. Interviews	No. people	No. Interviews & people		No. Interviews	No. Interviews & people						
One-on-one interviews	4	4	2	2	3	2	11	11	1	2	2	1	2	8
Husband and wife teams	1	2	2	4	--	--	3	6	--	--	--	--	--	--
Husband, wife and one adult child	--	--	2	6	--	--	2	6	--	--	--	--	--	--
Total	5	6	6	12	3	2	16	23	1	2	2	1	2	8
Surveys	6		11		3	2	22		--	--	--	--	--	--

Appendix 10: Participation Costs

VSP	Fee	Coverage	Amount (AU\$)
CLM ⁹¹²	Workshop fee	Start-up costs from the beginning of the Start Workshop to the end of the first Review Workshop, which include: <ul style="list-style-type: none"> • Use of the CLM system and <i>myEMS</i>, including the legislative search tool. • 4 days of input from trainers and advisers • Provision of a monitoring manual and other support documents • Certification and a CLM gate sign 	Variable depending on number of landholders, location and the extent of technical advice. Ball-park of \$1,250 plus GST per business for a group of 6 to 10.
	Annual service fee	Payable annually after the first Review Workshop, covering: <ul style="list-style-type: none"> • Continued use of the CLM system and <i>myEMS</i> • Annual audit • Review Workshop once every three years • ALMG and CLM newsletters 	\$300 plus GST per business
	Certification fee	Payable annually after the first Review Workshop upon a successful audit. The fee supports promotion of CLM to new members and prospective public and private sector partners.	Graded according to gross annual income; e.g. \$150 for gross annual income <\$100,000; \$500 for gross income of \$500,000 to \$1 million.
ACO ⁹¹³	Annual membership fee	Membership is optional	\$161
	Certification fee	Including audit and inspection	\$520 ⁹¹⁴
	Fees for additional market requirements	e.g. EU, USA, Japan, Korea	\$455-1,320 (depending on market)

⁹¹² Brochure dated January 2013 and <http://almg.org.au/certified-land-management/certification-process> accessed 10 Jan 2014.

⁹¹³ Based on livestock and cropping enterprises in the 2015 calendar year: <http://austorganic.com/membership-form/> NASAA fees and charges are not publicly available on its website, other than its annual membership fee of AUS\$99: <http://www.nasaa.com.au/welcome3.html>

⁹¹⁴ AU\$470 for the OGA scheme for small producers selling domestic produce only: see application form, <http://aco.net.au/form-search/>

Appendix 11: Most Important Environmental and Animal Welfare Issues

Key: Rated as 'important' or 'very important' by a majority of respondents

Environmental Issues	CLM	Non-CLM	ACO+FOGG
Soil issues	X	X	X
Pasture or crop issues	X	X	
Water resources issues	X	X	X
Native vegetation issues	X	X	X
Climate issues	X	X	
Greenhouse gas issues			
Weeds		X	X
Pest animals – native	X	X	
Pest animals – non-native		X	
Nature conservation and biodiversity	X		X
Economic challenges on my property or in the district	X	X	X
Social challenges on my property or in the district	X	X	
Animal Welfare Issues			
Livestock husbandry and handling practices <i>on my property</i>	X	X	X
Livestock handling outside my property	X	X	
Management of native pest animal species	X	X	
Management of non-native pest species	X	X	X

Appendix 12: Most and Least Nominated benefits

Key:  Current  Future  Least nominated

A Productivity, financial and other business benefits		CLM	Non-CLM	ACO + FOGG	D Personal and intrinsic benefits		CLM	Non-CLM	ACO + FOGG
1	Production efficiencies productivity				22	Increased self-esteem			
2	Improved profitability				23	Increased confidence in managing			
3	Product differentiation	F			24	Increased personal satisfaction			
4	Access to markets	F			25	Enhanced professionalism			
5	Price premium	F			26	Recognition as a good manager			
6	Reduced costs of insurance/finance	F			27	A moral benefit			
7	Discounts on rates or other inputs	F			28	Work with like-minded people			
8	Maintaining land values	F			29	Social opportunities			
9	Maintaining social licence	F			30	Better health			
10	Access to funding (grants/subsidies)				31	Community recognition			
11	Government concession				32	Special interest group recognition			
12	Access to other forms of support								
B Risk management benefits					E Benefits to environment & animal welfare				
13	Reduced risk				33	Improvement in the environment			
14	Reduced legal risk				34	Benefits to nature			
15	Reduced risk of outsiders imposing				35	Benefits to flora and fauna			
16	Maintaining access to nat. resources				36	Improved welfare of animals			
C Benefits to others - family, staff, community, industry					F Benefits for planning				
17	Improved family/work relations				37	Compliance with NRM regulation			
18	Broad benefits to local community				38	Achieving local govt requirement			
19	Broad benefit to industry as a whole				39	Achieving NRM targets			
20	Broad benefits to community				40	Integrated property planning			
21	Benefits to children/future gen.'s				41	Improved communication			

Appendix 13: Organic Certification Design – Additional Detail

Element 1	Procedures
<p>Sectors specifically mentioned in addition to interviewees' enterprises</p>	<p>Poultry, pigs, dairies, goats, processing/preparation, spices, tea, coffee, cocoa, sugar and herbs, sugar, pet foods, health and cosmetics/beauty care products, fibres and textiles, honey and bee keeping, greenhouse production, nurseries and seed production, mushrooms, wild harvest, silviculture / forest management, aquaculture, special international projects, fair trade – ethical trade, marketing and handling, farmers' markets and other markets, transport, storage and warehousing, cotton, landless systems, sprouts, dried fruit, aquatic plants, packaging, pest control, and traders.⁹¹⁵</p>
<p>Application details</p>	<p>Soils; biodiversity; fertility management, composting; crop management (rotations, contamination, weeds, pests, and crop disease); neighbouring land use and buffer zones; parallel production (growing organic, in-conversion, or conventional crops together); equipment for sowing, cultivation, spraying, and harvesting; harvest and post-harvest; crop storage and transportation; livestock identification, separation and quarantine; livestock feeds, supplements, additives, and rations; animal welfare; livestock transportation; livestock pest and disease management; pasture, grazing and natural resources management; documentation and record-keeping systems.⁹¹⁶</p>

⁹¹⁵ ACO, ss 5.2-5.5, 6, 6.3.4, 6.3.5, 6.6, 6.6.3, 7.1, 7.2, 7.4, 7.5-7.9, 8, 8.5; NASAA, ss 4.16, 4.17, 4.18, 5.1, 5.3, 5.5, 5.6, 5.7, 5.8, 5.9, 7.9, 7.10, 7.12, 7.21, 7.28, 7.32, 9.1, 9.2, 9.3, 9.5, 9.6, 9.7, 12, 13.

⁹¹⁶ See NCO's 'Comprehensive Organic Management Plan' template, and ACO's templates 'Organic Farm Plan' and 'Livestock Management Plan': <http://www.nasaa.com.au/steps4.html> and <http://aco.net.au/form-search/>

Element 2	Managing environmental and animal welfare impacts
Management, rather than inputs	<p>In cropping enterprises, the management practices permitted and encouraged by the standards include integrated pest, disease and weed management strategies, choice of resistant plant varieties and appropriate species, quarantine and hygiene measures, mechanical controls (traps and barriers), biological controls such as natural enemies of pest species, crop rotations, mowing and grazing livestock, companion planting, competitive or allopathic crops, monitoring of pest and beneficial species to determine the need for and timing of management activities, understanding the ecology of weed populations, control of seed banks, light and sound, heat, including steam, flame and hot water, soil solarisation, and minimal cultivation.⁹¹⁷</p> <p>In livestock enterprises, the management practices permitted and encouraged by the standards for livestock health, disease prevention and treatment include appropriate breed selection and adaptation to the conditions and climate of the farm, grazing management, fencing, stocking rates and attention to carrying capacity, and attention to nutrition and feeding.⁹¹⁸</p>
Organic Management Plan	<p>Both <i>ACO</i> and <i>NASAA Standards</i> cover common ground for the development of the organic management plan including histories of past management practices and future intentions for each paddock; identifying and addressing risks; management of soils, fertility and soil degradation processes (e.g. erosion, acidity, and salinity); management of weeds, pests, and diseases; management of inputs; buffer zones, biodiversity and environmental management; management and conservation of water resources; animal health and</p>

⁹¹⁷ See for example, *NS*, s 3.8.1; *ACO*, s 4.5.3; *NASAA*, ss 4.14, 4.14.2, 4.14.3.

⁹¹⁸ *NS*, ss 3.13, 3.15; *NASAA*, ss 6.1, 6.6, 6.6.1.

	<p>welfare; and monitoring and documentation systems.⁹¹⁹ Both standards require a detailed farm map to accompany the organic management plan showing both on-farm and neighbouring activities, significant environmental aspects, and contamination risks.⁹²⁰</p> <p>Each standard mentions unique requirements for the development of the OMP; for instance the <i>ACO Standard</i> specifically mentions the use of hazard analysis critical control point (HACCP) principles; procedures for handling ‘corrective action requests’ (CARs) issued for non-compliance, complaints and potential product recalls; identification of key management personnel; and articulation of plans to reduce the use of restricted materials.⁹²¹ The <i>NASAA Standard</i> mentions planning for crop rotations; managing impacts on water resources from the application of manure and soluble fertilisers, stocking densities, and effluent; post-harvest management and tourism.⁹²²</p>
<p>Prescriptions</p>	<p>The <i>ACO</i> and <i>NASAA Standards</i> contain provisions of varying degrees of prescriptiveness, from suggestions and guidelines, for example, on manure inputs, buffer-zone widths, minimum weaning ages, ideal composting temperatures,⁹²³ to stricter requirements, for example for seeds and propagative materials, introducing uncertified livestock, permissible fodder sources, crop rotations, required animal fat scores, and minimum areas for housed animals.⁹²⁴ In all three standards, artificial insemination for livestock breeding is frowned-on but not</p>

⁹¹⁹ *ACO*, ss 2 (definitions), 3.1.7, 3.4.1(2)(a)-(c), 5.1.1, 5.7.15, Annexes 2 and 3; *NASAA*, ss 1.1 (definitions), 2.1.4, 2.3.1, 2.4, 2.4.1, 3.5, 3.5.3, 3.9, 6.11.1.

⁹²⁰ *ACO*, s 3.4.1(1), *NASAA*, s 2.5.

⁹²¹ *ACO*, s 3.1.7, 3.4.1(2)(a), Explanation to Annexes (p 107)

⁹²² *NASAA*, s 2.4.1, 3.5, 3.9.

⁹²³ *ACO*, s 4.2.7, 4.7.20, 5.1.17, 4.3.5,

⁹²⁴ *ACO*, ss 4.1.3, 5.1.10, 5.1.36; *NASAA*, ss 4.2.1, 4.1.3, 6.1.10, 6.3.5, 6.7.1

	<p>prohibited.⁹²⁵ The standards qualify materials listed as ‘allowed/permitted’, ‘restricted’ (i.e. allowed with conditions), or prohibited. Notwithstanding the inclusion of prohibitions, the <i>ACO</i> and <i>NASAA Standards</i> describe themselves as ‘positive’ standards,⁹²⁶ meaning that permitted material inputs are listed in the standards and unlisted items, prima facie, must be presumed prohibited unless the farmer can otherwise make a case to the certifying body for written confirmation that their use is allowed.⁹²⁷</p>
<p>Prohibitions</p>	<p>The <i>National Standard</i> prohibits, amongst other things, genetically modified organisms (GMOs)⁹²⁸ or their derivatives (including in animals, seed, farm inputs, fertilizers, soil conditioners, vaccines, crop production materials, food additives or processing aids); ionizing radiation; nanotechnology; products that interfere with the natural plant or animal metabolism; synthetically manufactured pesticides; tobacco extracts; embryo transfer and breeding techniques employing genetic engineering or reproductive hormones; livestock feed containing antibiotics, growth promotants, or urea; cattle feed containing cattle by-products from abattoirs; certain wood products in bee-hives; allopathic veterinary drugs in aquaculture; hydroponic systems, labelling water or salt as ‘organic’; and endocrine</p>

⁹²⁵ *NS*, s 3.13(ii); *ACO*, s 5.1.15; *NASAA*, s 6.1.

⁹²⁶ *ACO*, Explanation to the Annexes (p 94); *NASAA*, s 1.1 (definition of ‘prohibited’). Presumably, the opposite – a ‘negative list’ – would articulate all prohibitions, with unlisted items presumed to be permitted.

⁹²⁷ *ACO*, Explanation to the Annexes (p 95).

⁹²⁸ As defined by the *NS* Definitions section: ‘materials produced through the modern engineering methods of biotechnology; specifically gene technology, “recombinant DNA (rDNA)” and all other techniques using molecular and/or cell-biology for altering the genetic make-up of living organisms in ways or with results which do not occur in nature or through traditional breeding’.

	<p>disrupting, ozone depleting, and trihalomethane-forming compounds in sanitation chemicals.⁹²⁹</p> <p>Both <i>ACO</i> and <i>NASAA Standards</i> strengthen some of the <i>National Standard's</i> proscriptions, and in some cases add prohibitions not contained in the <i>National Standard</i>; for example, in relation to the drainage of natural wetlands, faeces and urine in animal feeds, polyvinylchloride (PVC) mulches, sewerage sludge, dip sites, permanent feedlotting of livestock, animals in battery production, mulesing, and sole reliance on foliar feeding.⁹³⁰ Both <i>ACO</i> and <i>NASAA Standards</i> have stronger provisions than the <i>National Standard</i> on the clearance of primary forest/native vegetation and primary ecosystems on currently certified land, and even on some lands cleared prior to certification.⁹³¹</p>
<p>Natural products prohibited or restricted</p>	<p>Tobacco extracts are prohibited.⁹³² Rotenone (a non-synthetic, plant-based crop pesticide derived from <i>Derris</i> species of plants) reveals the suite of different approaches possible amongst the standards. Rotenone is permitted by the <i>National Standard</i> for plant pest and disease control,⁹³³ restricted (though not prohibited) by the <i>NASAA Standard</i>,⁹³⁴ but prohibited by the <i>ACO Standard</i>.⁹³⁵ Both the <i>ACO</i> and <i>NASAA Standards</i> expressly prohibit the use of Chilean nitrate, though it is not explicitly mentioned as prohibited by the <i>National Standard</i>.⁹³⁶</p>

⁹²⁹ *NS*, ss 1.5, 3.1.5, 3.1.6, 3.2.6, 3.3.1, 3.7.3, 3.7.1, 3.13.1, 3.14.7, 3.14.8, 3.21.8, 3.22.3, 3.22.10, 4.3.4, 4.4.4, 7(3)(f), Appendix II-Annex A(2).

⁹³⁰ *NASAA*, ss 4.14.10, Annexes 2 and 5, 6.5.9, 3.5.10; *ACO*, ss 4.2.4, 4.2.10, 4.3.11.2, 4.7.13, 5.1.33, 5.1.15, 4.1.6, 5.1.20, 7.2.8.

⁹³¹ *ACO*, s 4.6.9; *NASAA*, ss 3.5.4 and 3.5.8.

⁹³² *NS*, Appendix I-Annex C.

⁹³³ *NS*, Annex C.

⁹³⁴ *NASAA*, Table 7 (p 53) and Annex 2.

⁹³⁵ *ACO*, s 4.7.13. Toxicological research suggests a link between Rotenone and Parkinson's Disease in farm workers: Caroline M Tanner et al, 'Rotenone, Paraquat and Parkinson's Disease' (2011) 119(6) *Environmental Health Perspectives* 866.

⁹³⁶ *ACO*, s 4.1.6; *NASAA*: Annex 1. Chilean nitrate could be used as fertilizer in a relatively 'natural' crushed-rock form but as its action is via the more direct mineral-to-root pathway (rather than

<p>Separation and exclusion</p>	<p><i>ACO</i>, ss 4.7.4 (contamination), 4.7.19 and 4.7.20 (buffer zones), 5.1.3 (quarantine areas), 5.1.7 (segregation and holding areas for brought-in livestock), 5.7.10 (livestock tagging); <i>NASAA</i>, ss 3.2.7 (preventing GMO contamination), 3.3 (buffer zones), 4.2.9 (seedling facilities).</p>
<p>GMOs</p>	<p>The use of GMOs on a farm (even by a previous owner of the farm) results in a longer than usual conversion period (i.e. five years, compared with the usual three year period).⁹³⁷ The detection of GMOs in produce has significant consequences, not just for a batch of product, but for the certification status of the whole farm, even where contamination was beyond the control of the farmer.⁹³⁸ The prohibition against GMOs applies to crops, animals, seed, farm inputs, GMO derived substances in veterinary medications and vaccines, and honey and apiary products from bees that have browsed on GMO crops.⁹³⁹</p>
<p>Certifying body discretions</p>	<p>Use of non-organic seed or spawn; livestock feed supplements; livestock feed in climactic emergencies; feeding in bee-hives; on-going use of farming inputs; time-frames for certification; authorization of labels; certification itself; certifying imported organic produce; evaluation of new participant's application; brought-in materials, stock and equipment; deeming sites and systems to be of special ecological importance; determining whether non-compliance jeopardizes the reputation of the certifying body's brand; special exceptions to contaminant criteria; use and registration of products for pest, disease, and weed management not listed in the annexes; stubble-burning; and the risk of GMO contamination.⁹⁴⁰</p>

indirect mineral-to-soil-to-root pathway), organic researchers argue it offends organic principles: see 'Chilean Nitrate and Organic Farming' (2005).

⁹³⁷ *NS*, 3.3.4; *ACO*, s 4.7.15; *NASAA*, s 3.2.8.

⁹³⁸ *ACO*, s 4.7.14; *NASAA*, s 3.2.11.

⁹³⁹ *NS*, ss 3.3.1, 3.15.8, 3.21.3(a).

⁹⁴⁰ *NS*, ss 3.7.2, 3.14.4, 3.10.9, 3.14.9, 3.21.6, Appendix 1-Annex A(3), 3.2.2, 7(2), 6.2.2, 8.1(a), Guidance Document Land Conversion 1.1, Step 3 (p 80); *ACO*, ss 3.3.3, 3.4.3, 4.2.2, 4.6.3, 4.7.9, 4.5.2, Explanation to Annexes (p 95), Annex I; *NASAA*, ss 4.2.3, 4.1.7, 3.2.9, 6.15.18.

Element 3 Achieving environmental and animal welfare impacts	
Other references to ‘natural’ and ‘synthetic’	<p><i>National Standard:</i></p> <ul style="list-style-type: none"> • Prohibiting hydroponic systems,⁹⁴¹ because they use artificial substrates and dissolved minerals in the place of soil; • Prohibiting the use of solid non-woven plastic or synthetic material sheets for mulching;⁹⁴² • Prescribing the growing medium for mushroom production (e.g. untreated wooden logs or untreated sawdust);⁹⁴³ • Utilizing ‘natural breeding methods’ for livestock management;⁹⁴⁴ • Providing livestock ‘with a wide variety of food natural to their diet’;⁹⁴⁵ • Restricting the use of veterinary drugs and vaccines and prohibiting the use of synthetic chemical tranquillisers;⁹⁴⁶ • Restrictions on artificial lighting in animal houses;⁹⁴⁷ • Restrictions on feeding bees in hives (as opposed to natural foraging);⁹⁴⁸ • Restrictions in the list of permitted materials for soil fertilising and conditioning; for example, minerals and

⁹⁴¹ NS, s 3.7.1.

⁹⁴² NS, s 3.8.4.

⁹⁴³ NS, s 3.10.10.

⁹⁴⁴ NS, 3.11(iii). Artificial insemination is not recommended (s 3.13(ii)) and a number of breeding techniques are prohibited (for example, embryo transfer, treatments with reproductive hormones: s 3.13.1).

⁹⁴⁵ NS, s 3.14.2. The standard also prohibits feeding cattle with abattoir by-products of cattle (s 3.14.8), one of practices implicated in the UK epidemic of bovine spongiform encephalopathy (BSE or ‘mad cow disease’) in the 1980s and the consequent public health crisis (consumption of BSE-infected neural tissue in beef products may cause the fatal generative brain disease, variant Creutzfeldt-Jakob Disease (vCJD), in humans): Peter G Smith and Ray Bradley, ‘Bovine Spongiform Encephalopathy (BSE) and its Epidemiology’ (2003) 66 *British Medical Bulletin* 185.

⁹⁴⁶ NS, ss 3.15.5, 3.15.7 and 3.18.5.

⁹⁴⁷ NS, s 3.17.5.

⁹⁴⁸ NS, s 3.21.5.

	<p>trace elements from natural sources and plant by-products from chemically untreated sources;⁹⁴⁹ and</p> <ul style="list-style-type: none"> • Criteria to evaluate inputs for inclusion in the standard; for example, inputs should be of plant, animal, microbial or mineral origin and should not contain synthetic chemicals unless ‘nature identical’. Permitted processes for producing inputs include mechanical or physical processes (e.g. extraction, precipitation, and thermal processes), and biological, enzymatic, or microbial processes (e.g. fermentation, composting, and digestion).⁹⁵⁰
	<p><i>ACO Standard</i>: ensuring a diversity of ground cover species in orchards and plantations;⁹⁵¹ <i>NASAA Standard</i>: preference for open-pollinated varieties of crops.⁹⁵² The <i>ACO and NASAA Standards</i> have some naturalistic references in common (though in slightly different wording), including:</p> <ul style="list-style-type: none"> • Allowing animals access to pasture;⁹⁵³ • Allowing livestock to perform natural social and physical functions and normal behaviours;⁹⁵⁴ • Ensuring farmed animals can reproduce and give birth without human intervention;⁹⁵⁵ • Prohibiting hormonal growth promotants in animal husbandry;⁹⁵⁶ and

⁹⁴⁹ *NS*, Annex B.

⁹⁵⁰ *NS*, Appendix IV-Annex A.

⁹⁵¹ *ACO*, s 4.6.4.

⁹⁵² *NASAA*, s 4.2.

⁹⁵³ *ACO*, s 5.1.34; *NASAA*, 6.3.3.

⁹⁵⁴ *ACO*, s 5 (Principles and Aims); *NASAA*, s 6.1.1.

⁹⁵⁵ *ACO*, s 5.1.15; *NASAA*, 6.1.1. For example, the Belgian Blue breed of cattle is known for dystocia, and the estimates of the incidence of assisted birth via Caesarean section is 80% to 90% of births: Anna Bassett, 'Technical Advice Fact Sheet No. 1 - Welfare and Belgian Blue Cattle' (Animal Welfare Approved, 2009).

⁹⁵⁶ *ACO*, s 5.1.31; *NASAA*, s 6.1.6.

	<ul style="list-style-type: none"> • Prohibition on fertilizers that are chemically treated for increased solubility.⁹⁵⁷
General good soil practices	<p>Good soil practices reiterated in the standards include avoiding loss of topsoil; maintaining ground cover; preventing erosion, compaction, salinization and other forms of soil degradation; and promoting stable aggregates, structure, tilth, aeration, water infiltration capacity, water holding capacity, cation exchange (a measure of nutrient holding capacity), pH buffering, and soil carbon.⁹⁵⁸</p> <p>The standards require, where relevant, cultural practices such as growing deep-rooted perennial plants (known to remediate or slow soil erosion, acidification and salinity);⁹⁵⁹ maintaining vegetative ground covers (for erosion control and enhancing biological activity);⁹⁶⁰ strategically using livestock in farming systems (for weed control and fertility);⁹⁶¹ and crop rotations (which restore fertility and soil structure, and inhibit disease).⁹⁶²</p>
Other references to biodiversity⁹⁶³	<ul style="list-style-type: none"> • Monitoring of native plant species in grazing enterprises; • Consideration of domesticated bees on indigenous insect populations; • Consideration of wetlands, river flow regimes and wildlife habitats in irrigated enterprises; • Restrictions on the use of fertilizers derived from sea fish, and

⁹⁵⁷ ACO, Explanation to the Annexes (p 95); NASAA, s 4.11.

⁹⁵⁸ See for example, NASAA, s 3.6.

⁹⁵⁹ NS, s 3.5.1(a) ACO, s 4.1.3 (a); NASAA, s 4.1

⁹⁶⁰ (ACO, s 4.1.12, NASAA, s 6.1.7)

⁹⁶¹ NS, s 3.5.1(f)

⁹⁶² NASAA, 4.1.2.

⁹⁶³ NS, s 3.14.9(d), 3.21(ii); ACO, s 4.1.4; NASAA: 3.10.3, 4.7.1, 3.8.4.

	<ul style="list-style-type: none"> • Maintenance of within-crop diversity in perennial crops and orchards (via companion planting, under-sowing, mixed cropping, wildlife refuges, and refugia for natural enemies of pests).
<p>Other animal welfare provisions</p>	<p><i>National Standard:</i></p> <ul style="list-style-type: none"> • Stress minimization: s 3.11(iii); • Herd/flock design principles (i.e. the choice of breeds, taking into account suitability for locality, natural resistance, and absence of inheritable conditions): s 3.13(i); • Humane slaughter: s 3.16.6; and • Prohibition on coercive electrical stimulation: s 3.18.4. <p>The welfare requirements not only apply to the larger farm animals such as cattle, sheep, pigs, and poultry, but also smaller animals such as bees, and fish and crustacea in aquacultural systems.⁹⁶⁴</p> <p>The <i>ACO</i> and <i>NASAA Standards</i> go further than the <i>National Standard</i>, having specific rules relating to weaning;⁹⁶⁵ animal modifications (such as castration, dehorning, and tail removal);⁹⁶⁶ dense confinement, caging, and stocking rates;⁹⁶⁷ transport;⁹⁶⁸ addressing the social needs of animals (e.g. avoid isolating herd animals).⁹⁶⁹ The two organizations' standards are similar but not identical: the <i>NASAA Standard</i> impliedly mentions humane culling of pests and feral</p>

⁹⁶⁴ *NS*, ss 3.21.13, 3.22.11.

⁹⁶⁵ *ACO*, s 5.1.17; *NASAA*, s 6.7.

⁹⁶⁶ *ACO*, ss 5.1.18-5.1.19; *NASAA*, s 6.8.7,

⁹⁶⁷ *ACO*, ss 5.1.20 5.1.38, 5.1.40, 5.1.41; *NASAA*, ss 7.17.1, 6.3.5.

⁹⁶⁸ *ACO*, s 5.1.49; *NASAA*, s 6.11.1.

⁹⁶⁹ *ACO*, s 5.1.39; *NASAA*, s 6.3.12.

<p>Sanctions</p>	<p>Ancillary sanctions include withdrawal of labelling rights and requiring certified operators to recall product from the market place during periods of suspension of certification,⁹⁸⁰ and the pursuit of legal action for the protection of the certifying body's brand.⁹⁸¹ The appeals process for aggrieved sanctioned operators outlined in the <i>National Standard</i> is fairly rudimentary, though the <i>ACO Standard</i> has more developed governance paraphernalia for dealing with appeals in the first instance.⁹⁸² Suspension is a strict liability sanction that must be applied whenever 'there is reason to believe that the organic or bio-dynamic integrity of the product has been compromised'.⁹⁸³</p> <p>The <i>National Standard</i> refers to decertification in general terms only, and decertified operators must disclose the fact, were they to apply to a different certifying organization for (re)certification.⁹⁸⁴ <i>ACO</i> and <i>NASAA Standards</i> are more specific. Decertification may apply to the certified operator, or products, or both.⁹⁸⁵ The range of non-compliances that could trigger decertification of the operator include ongoing non-compliance, mixing organic and conventional products, failure to complete the annual return, and failure to implement a soil restoration plan where continuing excessive tillage contributes to soil structural decline.⁹⁸⁶ Decertification of product may occur where the presence of GMOs is detected, where meat products from livestock are treated with prohibited substances, where contamination occurs due to mandatory spraying by</p>
-------------------------	--

⁹⁸⁰ *NS*, 6.3.4

⁹⁸¹ *ACO*, s 3.2.1.

⁹⁸² *ACO*, ss 3.1.21, 3.3.9, 3.3.10. See also *NASAA*, s 2.14.

⁹⁸³ *NS*, s 6.3.3.

⁹⁸⁴ *NS*, 6.2.5.

⁹⁸⁵ For example, see *NASAA*, s 3.1.3.

⁹⁸⁶ *ACO*, ss 3.3.4, 3.3.8; *NASAA*, s 2.12. s 2.12.1., 2.12.5, 3.6.11.

	<p>weed/pest authorities.⁹⁸⁷ The operator or product, or both, may be decertified where the operator fails to adequately explain the presence of chemical residues, or in the case of the intentional application of prohibited substances or failure to take precautions against contamination.⁹⁸⁸</p>
<p>Embedded governance initiatives</p>	<p><i>Australian law:</i></p> <p>NASAA, s 1.1: definition of ‘therapeutic good’ under the <i>Therapeutic Goods Act 1989</i> (Cth); s 2.15: export of organic produce under the <i>Export Control Act 1982</i> (Cth) and the <i>Organic Produce Certification Orders 1997</i> (Cth).</p> <p><i>Australian Standards:</i></p> <p>AS 4454-1999 (composts, soil conditioners and mulches) [superseded by the 2003 version]: <i>National Standard</i>, Appendix I, Annex B (compost); Food Standards Australian New Zealand: <i>National Standard</i>, Appendix III, Annex B (flavourings).</p> <p><i>Guidelines of the National Health and Medical Research Council (NHMRC):</i></p> <p>Definition of potable water: <i>National Standard</i> (Definitions) and NASAA, s 1.1.</p> <p><i>World Health Organization (WHO) guidelines:</i></p> <p>ACO, s 7.3.2 (water quality).</p> <p><i>UN conventions:</i></p> <p>UN <i>Universal Declaration of Human Rights</i>: ACO, s 7.8.16 (special international projects); UN <i>Charter of Rights for Children</i>: NASAA, s 8.1 (social justice).</p> <p><i>Codes of Animal Welfare Practice:</i></p>

⁹⁸⁷ ACO, ss 4.2.12, 5.1.3, 5.1.5, 5.7.6; NASAA, s 3.2.12.

⁹⁸⁸ ACO, s 4.7.1; NASAA, s 3.1.3, 3.1.12, Annex 7.

	<p>NS, s 3.16.6 (slaughter of livestock).</p> <p><i>IFOAM:</i></p> <p><i>IFOAM Basic Standard (IBS): NASAA, s 2.11 (inspection). NASAA and ACO's certification bodies are accredited by IFOAM to certify to the IFOAM standard: NASAA (Introduction, p 8), ACO, s 2 (definition of IFOAM).</i></p> <p><i>Laboratory standards:</i></p> <p>NS, Guidance Document Residue Testing 1.1, p 79; NASAA, s 6.1.11 (testing of meat, wool, eggs, milk and honey).⁹⁸⁹</p> <p><i>International Nomenclature of Cosmetic Ingredients (INCI):</i></p> <p>ACO, s 3.5.16 (marketing claims and labels).</p> <p><i>Technical management processes:</i></p> <p>Hazard analysis critical control point management systems (HACCP) in relation to organic management plans, EMS, and <i>ISO 14001: ACO, ss 3.1.7, 4.6.7, 6.1.32</i></p> <p><i>Food Standards Australia New Zealand (FSANZ):</i>⁹⁹⁰</p> <p>References to the maximum allowable residues of agrichemicals and heavy metals and other less specific references to chemicals are used as a basis of</p>
--	---

⁹⁸⁹ The standards require testing in NATA-approved laboratories. NATA is the 'National Association of Testing Authorities', which according to its website is 'the authority responsible for the accreditation of laboratories, inspection bodies, calibration services, producers of certified reference materials and proficiency testing scheme providers throughout Australia': NATA website, <http://www.nata.com.au/nata/about-nata>. It is 'a government-endorsed, independent, not-for-profit company, operating as an association owned by its members': <http://www.nata.com.au/nata/about-nata/structure>

⁹⁹⁰ Food Standards Australia New Zealand (FSANZ) is a statutory agency established under the *Food Standards Australia New Zealand Act 1991* (Cth) to develop standards in the *Australia New Zealand Food Standards Code*. These standards carry legislative authority under the *Legislative Instruments Act 2003* (Cth) and cover the use of ingredients, processing aids, colourings, additives, vitamins and minerals; the composition of some dairy, meat and beverage products; genetically modified foods; and labelling requirements for packaged and unpackaged food: see FSANZ website, <http://www.foodstandards.gov.au/about/Pages/default.aspx>

	<p>calculating more stringent requirements under the organic standard: <i>NS</i>, s 3.15.6 (three-fold increase to withholding periods for substances administered for animal disease prevention and treatment); <i>ACO</i>, ss 4.7.2 and 4.7.7 and <i>NASAA</i>, s 3.1.3 and Annex 7 (allowable agrichemical and heavy metal residue levels in certified organic produce to be no more than 10% of the maximum residue limit (MRL) set by FSANZ); <i>ACO</i>, s 5.1.6 (withholding period for livestock subjected to anaesthetic). <i>ACO</i>, s 2 defines ‘maximum permissible concentration’ (MPC) of a heavy metal by reference to the allowances of the National Health and Medical Research Council (NHMRC) Australia but the <i>ACO Standard</i> does not otherwise mention MPCs directly. Perhaps this definition is implicit in s 9.2.7 (random residue tests for heavy metals to be ‘below acceptable limits’) and Annex 1 (onus on grower to ensure that inputs ‘do not exceed allowances for presence of heavy metals ...’), though those sections could equally refer to the maximum residue limits (MRLs) of FSANZ.</p>
<p>General references to governance initiatives</p>	<p><i>Laws:</i></p> <p>Collection of raw materials as inputs for manufacturing: <i>NASAA</i>, Annex 9; management and protection of native flora and fauna: <i>ACO</i>, s 5.7.2.</p> <p><i>Authorities:</i></p> <p>Using water containing human and industrial effluents: <i>National Standard</i>, s 3.6.4.</p> <p><i>Permits:</i></p> <p>Collection of seaweed (<i>NASAA</i>, s 4.8.1); shooting of pests, ferals, or domestic animals (<i>NASAA</i>, Annex 2).</p> <p><i>Casual references to specific instruments:</i></p>

	<p><i>Codex Alimentarius: ACO, Introduction.</i></p> <p><i>Recommendatory references:</i></p> <p>Prescribed district rates and ecological indicators for calculating rangelands carrying capacity: <i>NASAA</i>, s 7.1 (rangeland management recommendations); fat scoring for animal condition: <i>NASAA Standard</i>, s 6.5 (though a similar reference in s 6.1.10 appears to be mandatory).</p> <p><i>Explanatory references:</i></p> <p>Biodynamic writings: <i>ACO</i>, Annex V (The ‘Agriculture Course’ series of lectures by Steiner), <i>NASAA</i>, ss 11.1, 11.2, and 11.9 (Steiner’s ‘Agriculture Course’ lectures and the publication ‘Biodynamic Resource Manual – Working With Biodynamics’ from Biodynamic Agriculture Australia – BAA).</p>
<p>General compliance with law</p>	<p><i>National Standard</i>, ss 1.7 (legal obligations); 3.15.6 (livestock disease prevention and treatment); 3.16.1 (animal welfare); 3.18.3 (livestock handling and codes of practice); 4.5.2 (additives and processing aids); 7(2) (labelling and advertising); Appendix I, Annex A(9) (farming inputs). In the <i>ACO Standard</i>, see ss 1.4 (scope and application of the <i>Agricultural and Veterinary Chemicals Code Act 1994</i> (Cth) and requirements of the Australian Pesticides and Veterinary Medicines Authority – APVMA); 3.2.1 (maintaining certification, 2nd last dot-point); 3.5.8 (labelling requirements for genetic engineering-free or GMO-free status); 5.7.7 (management of feral animals); 5.7.8 (baiting for feral animals); Table 9.2a (guidelines for maximum limits for heavy metals); Annexes (Explanation, paragraph 8, p 94). In the <i>NASAA Standard</i>, see Introduction (legal obligations – p 8); s 7.3.5 (poisons for control of rodents or feral animals).</p>

<p>Additional governance measures mentioned</p>	<p>Other organic standards,⁹⁹¹ such as the <i>IFOAM Basic Standard (IBS)</i>, <i>Japanese Agricultural Standards – Organic (JAS)</i>, the United States Department of Agriculture’s National Organic Program (USDA NOP), the European Union organic standard (<i>EU Council Regulation 834/2007</i>), the <i>South Korean standard</i>, Bio Suisse (federation of Swiss organic farmers), <i>Naturland</i>, and the <i>Cosmetics Organic and Natural Standard (COSMOS)</i>. Also included here are general UK restrictions on the use of animal products in feedstuffs and fertilizers in the wake of the mad cow disaster.⁹⁹²</p>
<p>Human health provisions⁹⁹³</p>	<p>Restrictions on the use of reclaimed water, biosolids, and animal manures;⁹⁹⁴ registration by the certifying bodies of allowed inputs;⁹⁹⁵ and the prohibition of meat meal in the feed of certain livestock.⁹⁹⁶ Both <i>ACO</i> and <i>NASAA Standards</i> have specific provisions for the production of cosmetic and beauty care products.⁹⁹⁷ The standards of both organizations have maximum allowable residue levels,⁹⁹⁸ and testing of animal products for residues in animal products is mandatory under the <i>NASAA Standard</i>.⁹⁹⁹ Both standards contain specific provisions dealing with chemical residues from a miscellany of sources, including mulching materials touching edible plant materials; reclaimed water used for irrigation;</p>

⁹⁹¹ *ACO*, ss 3.1.20 (restrictions to granting certification), 3.2.1 (maintaining certification), 3.3.4 (decertification), 3.3.12 (sanctions), 3.5 (labelling, packaging, marketing), 3.5.22 (ingredients), 3.7.3 and 3.7.6 (certification transference/recognition), 4.6.10 (labour/employment policy), 4.7.10 (machinery, plant and equipment), 5.1.11 and 5.1.12 (brought-in stock), 5.1.19 (animal modifications), 5.1.34 and 5.1.36 (animal feedstock), 5.1.41 (animal living conditions, and stocking rates), 6.6.2 (cosmetics and skincare products), 7.4.3 (mushrooms); *NASAA*, (Introduction – p 8).

⁹⁹² See *ACO*, s 5.1.33 and Annex 1 (animal by-products and materials).

⁹⁹³ *NS*, 3.1(iii); *ACO*, s 4 (Organic Production Principles); *NASAA*, s 1.4(1) and (2).

⁹⁹⁴ *NS*, s 3.6.4; *ACO*, ss 4.2.9, 9.2.4

⁹⁹⁵ *ACO*, s 9.2.2

⁹⁹⁶ *NASAA*, ss 6.5.11. See footnote n 945 above for the links between meat meal in livestock feed and vCJD in humans.

⁹⁹⁷ *ACO*, s 6.6.2; *NASAA*, s 12.

⁹⁹⁸ *ACO*, ss 4.7.2 and 4.7.7 and *NASAA*, s 3.1.3 and Annex 7.

⁹⁹⁹ *NASAA*, s 3.1.14.

	<p>historical residues on farm and regional sources; contractors' grain handling equipment that may have moved between conventional and organic farms; cadmium in rock phosphate; wood ash from treated timber; old dip sites, shearing sheds, stockyards; and timbers treated with creosote and chromium arsenate.¹⁰⁰⁰</p>
Element 7	Demonstration
<p>Traceability and documentation mechanisms¹⁰⁰¹</p>	<p>Traceability is evidenced in the <i>National Standard</i> by requirements to maintain records of all material inputs¹⁰⁰² and all livestock medications and the method of disposal of all by-products from treated livestock.¹⁰⁰³ The <i>National Standard</i> requires identification of all livestock and livestock products through all stages of production, preparation, transport and marketing;¹⁰⁰⁴ as well as separately identifying livestock treated with medications that might affect their certification status.¹⁰⁰⁵ Product labelling is prescribed.¹⁰⁰⁶ All inputs need to be 'traced back one step in the biological chain to the organism from which they were produced' to demonstrate that they are not derived from genetically modified organisms.¹⁰⁰⁷</p> <p>The <i>ACO</i> and <i>NASAA Standards</i> impose more detailed prescriptions on these subject matters, for example on the types of animal identification procedures allowed,¹⁰⁰⁸ and the use of swabs and product testing in relation to grain handling</p>

¹⁰⁰⁰ *ACO*, ss 4.2.9, 4.12, 4.7.16, 3.1.1; *NASAA*, ss 4.11.3, 4.11.4, 6.4.

¹⁰⁰¹ *ACO*, s 3.4.1(3); *NASAA*, s 2.6.

¹⁰⁰² *NS*, s 3.5.3 and Appendix I-Annex A(9).

¹⁰⁰³ *NS*, s3.19.2 and 3.19.3.

¹⁰⁰⁴ *NS*, s 3.19.1.

¹⁰⁰⁵ *NS*, 3.19.2.

¹⁰⁰⁶ *NS*, s 7(2).

¹⁰⁰⁷ *NS*, ss 3.3.3 and 4.3.6

¹⁰⁰⁸ *ACO*, s 5; *NASAA*, s 6.9.

	<p>equipment.¹⁰⁰⁹ The <i>NASAA Standard</i> summarises the collection of documents that comprise the demonstration package certified farmers are expected to maintain and make available for audit, namely:¹⁰¹⁰</p> <ul style="list-style-type: none"> • The farm map; • Input records, recording fertility inputs, pest and disease inputs, source, brand name, amount, location and date of application, purchased stock, animal treatments, feed-stuffs to all paddocks, animals, production areas, irrigation water, post-harvest rinse water, seed, and receipts for the same; • Harvest records, noting crop, paddock, date of harvest, and quantity; • Sales records, comprising date of sale, crop, amount sold, paddock, sales invoices and consignment notes; • Audit trail, comprising the above, as well as transport documents and storage invoices; and • A farm diary, diarizing key dates for soil preparation, green manures, rotations, livestock events, equipment clean-down, buffer zone harvests, and irrigation.
--	---

¹⁰⁰⁹ *ACO*, s 6.3.1.1; *NASAA*, s 6.13.1.

¹⁰¹⁰ *NASAA*, s 2.6.

Appendix 14: Summary of Overall Results

Conceptual F/work	Research Sub-Questions	Design	Farmers' perceptions
1. Following procedures	1. Does the VSP help farmers follow good management procedures?	The investigated VSPs provide support for learning procedures.	Participants are broadly satisfied with VSP procedures.
2. Managing impacts	2. Does the VSP help farmers manage impacts on environment and animal welfare?	The VSPs provide opportunities for learning about management of impacts, through processes for planning, continuous improvement, and regular review.	Participants believe participation helps them manage impacts on the environment and animal welfare.
	3. Does the VSP help farmers self-reflect, self-regulate, build self-efficacy and harness a sense of control?	The VSPs' designs are broadly consistent with the development of Bandura's agentic capabilities.	
	4. Does the VSP facilitate internalization of stewardship norms by farmers?	The VSPs' designs are broadly consistent with the internalization attributes adapted from Stobbelaar et al.	
3. Achieving outcomes	5. Does the VSP help farmers achieve public interest outcomes?	The VSPs provide opportunities for learning about a range of environmental and animal welfare concerns.	Participants believe participation helps them achieve public interest outcomes.
6. Stakeholders' expectations	6. Does the VSP help farmers understand external stakeholders' expectations?	The VSPs' designs are broadly consistent with features desired by stakeholders. They provide opportunities for learning about a range of stakeholders.	Participants are proactive, open to stakeholders' concerns, and mostly regard those concerns as legitimate.
7. Demonstration	7. Does the VSP help farmers to <i>demonstrate</i> public interest outcomes?	The VSPs provide platforms for demonstration.	Participants believe participation helps them demonstrate outcomes.
4, 5 & 9. Benefits	8. Does the VSP facilitate a transfer of benefits between external stakeholders and farmers?	The VSPs provide platforms for benefit exchange.	Participants believe participation is beneficial to a range of interests. More research needed on stakeholders' perspectives of benefits.
8. Recognition	9. Does the VSP facilitate recognition amongst non-farmers of the reciprocal responsibility of stewardship?	The VSPs provide platforms for stakeholder recognition	Participants have a logical view of recognition and believe participation has garnered limited recognition from stakeholders. More research needed on stakeholders' perspectives of recognition.