Social license for industrial developments in rural areas: a case study of unconventional gas development in the Northern Rivers, Australia; an investigation of regional values, identity and social dynamics

Hanabeth Luke
Southern Cross University

Publication details
Copyright H Luke 2016
Social License for Industrial Developments in Rural Areas

A case study of unconventional gas developments in the Northern Rivers, Australia: an investigation of regional values, identity and social dynamics

Hanabeth Luke

Bachelor of Applied Science, Bachelor of Environmental Science with Honours, Professional Graduate Certificate in Education

A Thesis submitted in fulfilment of the degree of Doctor of Philosophy

School of Environment, Science and Engineering

Southern Cross University, Australia

December 2016
Statement of Originality

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university. I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

...................................

Hanabeth Luke
Abstract

Rural areas globally are subject to the converging pressures of climate change, urbanisation, market forces and energy expansion. Large-scale industrial projects can add to land-use competition and resource conflicts, potentially leading to dramatic impact on rural environments and their communities. Social licence can be used as a lens for understanding how communities respond to proposed industrial developments. A disconnect between the social license concept and the aims of sustainable development manifests itself in rural areas as a tension between industry activity and community aspirations. Mismatches between land-use planning decisions and community aspirations can create conflict, and potentially, social resistance. Social resistance can reflect strong community positioning and result in social license withdrawal. The relationships between these processes remain unclear.

The aim of this thesis is to use the social license lens to explore dynamics of social license for industrial developments in rural areas, with a particular focus on social license withdrawal. The case study for this exploration is a community response to unconventional gas industry developments, presenting an opportunity for research into factors leading to the granting or withdrawal of social license to operate. Three main themes woven throughout the thesis are: 1) drivers of social positioning on industrial development; 2) social dynamics and their influence upon social positioning, and 3) the role of social license in land-use planning.

Empirical data was collected using a mixed method, case study approach. Qualitative data from key informant interviews and focus group observations was used to develop a referendum-style poll and two election surveys that were carried out in the Northern Rivers region of New South Wales, Australia. The evolution of community views is examined as isolated concerns merged into coordinated social mobilisation, to the point where, in one local government area, 85% of voters opposed the industry, and up to 7,000 residents were mobilising in protest events. Research focussed on the social dynamics of intergroup and intragroup processes within the social movement, view formation and motivators for community positioning. Potential positive and negative influences on rural livelihoods, environmental values and procedural justice were important drivers of perceived legitimacy of developments, with trust being key to the perceived credibility of information.
The Thomson and Boutilier (2011) social license model was expanded to include processes within and beyond withdrawal of social license. It is concluded that the three main themes of the thesis are intrinsically linked with each other. Social dynamics play an important role in view formation, as existing values and identity will themselves influence social dynamics. The interaction of these factors, entwined with community engagement and decision-making processes will influence public perceptions, social license, and social resistance.
Acknowledgements

I would like to acknowledge the wonderful support of my three PhD supervisors, Associate Professor David Lloyd, Professor Bill Boyd and Dr Kristin den Exter, who have been steadfast and supportive guides and co-authors throughout my research process. I would also like to thank all of the research participants, including interviewees, survey participants and members of the BSANE group. I could not have collected much survey data without my fifty-one student volunteers for the 2012 and 2013 surveys, with a special thanks to those who gave up considerable time to help with the data entry phases.

Thanks are due to the ten reviewers, and journal editors who provided some excellent advice during the publication process of the five journal articles. Also to Glenda Scibilia who helped with the sourcing of many journal articles. A huge thank you to Lynne de Weaver for proof-reading my work, and helping to improve the final text. Mary-Pat Weber, a huge thanks to you for your thorough transcription services.

Finally, I would like to thank my family for their patience with me over the course of my PhD candidature, for all the help they gave in different ways. So much gratitude goes out to my husband Kieran for the enormous support he provides me with every day, and to little Tristan for his patience. A PhD is not the achievement of one person alone, but the product of the combined guidance, space and care provided by the people who surround and support that person.
List of publications included as part of this thesis


Copyright Statement

I warrant that I, Hanabeth Luke have obtained, where necessary, permission from the copyright owners to use any third-party copyright material reproduced in the thesis (e.g. questionnaires, artwork, unpublished letters), or to use any of my own published work (e.g. journal articles) in which the copyright is held by another party (e.g. publisher, co-author).
Statement of contribution of others

The purpose of this statement is to summarise and clearly identify the nature and extent of the intellectual input by myself and my co-authors. A signed statement from each of the co-authors is included in Appendix D.

Chapter Five:


- Input of D.J. Lloyd: 25 percent
- Input of H. Luke: 60 percent
- Input of W.E. Boyd: 15 percent

Chapter Six:


- Input of H. Luke: 75 percent
- Input of D.J. Lloyd: 10 percent
- Input of W.E. Boyd: 5 percent
- Input of K. den Exter: 10 percent

Chapter Seven:


- Input of H. Luke: 75 percent
- Input of K. den Exter: 10 percent
- Input of D.J. Lloyd: 10 percent
- Input of W.E. Boyd: 5 percent
Chapter Eight:


- Input of H. Luke: 50 percent
- Input of K den Exter: 30 percent
- Input of D.J. Lloyd: 10 percent
- Input of W.E Boyd: 8 percent
- Input of B Roche: 2 percent

Chapter Nine:


- Input of H. Luke: 100 percent
Additional publications


Table of Contents

1. Chapter One: Introduction ........................................................................................................... 1
1.1 Introduction ................................................................................................................................. 1
1.2 Context: pressures on rural areas ............................................................................................... 2
  1.2.1 Social pressures ....................................................................................................................... 3
  1.2.2 Environmental pressures ........................................................................................................ 4
  1.2.3 Economic pressures ................................................................................................................ 6
1.3 Social license .............................................................................................................................. 8
  1.3.1 Social impacts ......................................................................................................................... 9
1.4 Thesis problem: what are the dynamics of social license in rural areas? ............................... 10
  1.4.1 Energy pressure ..................................................................................................................... 12
  1.4.2 Unconventional energy pressures .......................................................................................... 13
  1.4.3 Energy industry planning ...................................................................................................... 14
  1.4.4 Community engagement in land-use planning ...................................................................... 15
  1.4.5 Taking communities seriously .............................................................................................. 16
1.5 The research question ............................................................................................................... 17
1.6 Thesis Objectives ...................................................................................................................... 18
1.7 Overview of the Thesis ............................................................................................................. 19
1.8 Conclusion ................................................................................................................................. 22

2. Chapter Two: Literature Review on Social Responses to Industrial Developments, Drivers for Industry Acceptance versus Social License Withdrawal and Social Action ................................................. 23
  2.1 Introduction ............................................................................................................................... 24
  2.2 Challenges and opportunities for energy and land-use planning ........................................... 25
  2.3 Social positioning regarding industrial developments .............................................................. 27
    2.3.1 Geographical location - the NIMBY phenomena ................................................................. 28
    2.3.2 Socio-demographics ............................................................................................................. 29
    2.3.3 Economic benefits ............................................................................................................... 29
    2.3.4 Experience ........................................................................................................................... 30
    2.3.5 Knowledge and social positioning ......................................................................................... 31
    2.3.6 Information & language ....................................................................................................... 32
    2.3.7 Worldview and ideology ....................................................................................................... 36
    2.3.8 Values ................................................................................................................................... 36
    2.3.9 Sense of place ....................................................................................................................... 38
    2.3.10 Engagement processes and procedural fairness ............................................................... 39
    2.3.11 Trust and risk perception ................................................................................................... 40
    2.3.12 Identity ............................................................................................................................... 42
  2.4 Social Resistance ..................................................................................................................... 43
    2.4.1 Social movements ................................................................................................................ 43
  2.5 Strategy and structure of social movements ............................................................................ 45
    2.5.1 The evolution of a social movement ...................................................................................... 47
    2.5.2 Overcoming barriers to effective social action ................................................................. 48
    2.5.3 The individual ..................................................................................................................... 49
    2.5.4 Negative roles & social feedback ......................................................................................... 50
    2.5.5 Group formation ................................................................................................................. 52
    2.5.6 Group socialisation and social ‘norms’ ............................................................................... 53
    2.5.7 Group dynamics .................................................................................................................. 54
2.5.8 Stereotyping ................................................................. 54
2.5.9 Social dynamics of large groups .................................. 55
2.5.10 Non-violence ......................................................... 55
2.5.11 The role of power in social resistance ......................... 56
2.6 The role of social license for industrial developments .......... 57
  2.6.1 Components of social license .................................. 58
  2.6.2 Cases of social licence success .................................. 59
  2.6.3 Social license: cases of resistance and policy reform ....... 61
  2.6.4 Drivers of social license success or withdrawal .......... 64
2.7 Chapter Summary............................................................. 67

3. Chapter Three: Research Methods ....................................... 69
  3.1 Introduction ................................................................. 69
  3.2 The methodological approach ....................................... 70
  3.3 Mixed methods, case study approach ............................... 71
  3.4 Thesis objectives and sub-questions: ............................. 73
  3.5 Phases of the Study .................................................... 74
    3.5.1 Phase One ........................................................... 74
    3.5.2 Phase Two .......................................................... 75
    3.5.3 Phase Three ......................................................... 76
    3.5.4 Phase Four .......................................................... 77
    3.5.5 Phase Five .......................................................... 77
  3.6 The role of the researcher ............................................ 78
    3.6.1 The necessity of reflection ....................................... 80
    3.6.2 Ethical considerations ........................................... 80
  3.7 Thematic analysis ...................................................... 80
  3.8 Chapter summary ....................................................... 83

4. Chapter Four: Case Study Context: The Story of the Coal Seam Gas Industry in the Northern Rivers .................................................. 85
  4.1 Introduction ................................................................. 85
  4.2 Coal seam gas in Australia ........................................... 87
  4.3 The Northern Rivers case study region ............................. 88
  4.4 The anti-coal seam gas social movement ......................... 89
  4.5 Phase 1 of the social movement: normal times ................. 90
  4.6 Phase 2 of the social movement: demonstrating institutional failure .......... 92
    4.6.1 Planting the seed in the Northern Rivers .................. 94
    4.6.2 Awaking the activist beast in the Northern Rivers ....... 94
  4.7 Phase 3 of the social movement: ripening conditions ........ 96
    4.7.1 Social action groups .............................................. 97
    4.7.2 Lock the Gate Annual General Meeting ..................... 99
    4.7.3 Arrow Energy consultation processes ....................... 100
    4.7.4 Formation of the Northern Rivers Alliance ............... 101
  4.8 Phase 4 of the social movement: Take-off ....................... 103
  4.9 Phase 5 of the social movement: perceptions of failure ...... 103
  4.10 Sub-campaigns .......................................................... 105
    4.10.1 Gasfield free communities .................................... 106
    4.10.2 Metgasco’s consultation meetings ......................... 113
  4.11 Towards Phase 6 of the social movement: majority public opinion .......... 116
  4.12 Phase 7 of the social movement: success ....................... 118
  4.13 Returning to the Western Downs ................................... 119

5. Chapter Five: Community Perspectives of Natural Resource Extraction: Coal-Seam Gas Mining and Social Identity in Eastern Australia .................................................. 121
5.1 Introduction .................................................................................................................. 122
5.2 Communication failures and social impacts................................................................. 123
5.3 Methods ....................................................................................................................... 125
5.4 Results: (i) Key informant views ................................................................................. 129
  5.4.1 Western Downs Alliance & Lock the Gate ............................................................... 129
  5.4.2 The Basin Sustainability Alliance ............................................................................ 131
  5.4.3 Kyogle Group Against Gas .................................................................................... 131
  5.4.4 The Keerong Gas Squad ......................................................................................... 133
  5.4.5 The Ngaraakwal Association ................................................................................. 134
5.5 Results: (ii) Observations of key events ..................................................................... 135
  5.5.1 The Tara blockade and the May Day Chinchilla parade (May) .............................. 135
  5.5.2 Public coal-seam gas meetings .............................................................................. 138
5.6 Discussion ................................................................................................................... 141
5.7 Reflection on Chapter 5 .............................................................................................. 144

6. Chapter Six: Improving Conservation Community Group Effectiveness Using Mind-
Mapping and Action Research .......................................................................................... 147
6.1 Abstract ....................................................................................................................... 148
6.2 Introduction ................................................................................................................ 148
  6.2.1 The role and dynamics of social activist groups ...................................................... 152
  6.2.2 Harnessing and maintaining productivity using non-linear communication tools ... 153
6.3 Methods ...................................................................................................................... 155
6.4 Results ....................................................................................................................... 160
  6.4.1 Group dynamics ..................................................................................................... 160
  6.4.2 Mind-mapping for improving group effectiveness .................................................. 161
  6.4.3 Measures of group effectiveness .......................................................................... 164
6.5 Post-study reflection ................................................................................................... 166
6.6 Conclusion .................................................................................................................. 169
6.7 Acknowledgements .................................................................................................... 169
6.8 Reflecting on Chapter 6 ............................................................................................. 170

7. Chapter Seven: Unconventional Gas Development: Why a Regional Community Said No:
A Report of Findings from the 2012 Lismore City Council Election Poll and Exit Poll Survey
(New South Wales) .............................................................................................................. 171
7.1 Abstract ....................................................................................................................... 172
7.2 Introduction ................................................................................................................ 172
7.3 Background ................................................................................................................. 173
7.4 Research methods ....................................................................................................... 176
  7.4.1 The Lismore CSG poll ........................................................................................... 176
  7.4.2 The case for yes or no .......................................................................................... 176
  7.4.3 The exit poll survey .............................................................................................. 177
  7.4.4 The sampling strategy .......................................................................................... 177
  7.4.5 Survey structure .................................................................................................... 179
  7.4.6 The Theory of Planned Behaviour ....................................................................... 180
7.5 Results ........................................................................................................................ 180
  7.5.1 Comparison of the Lismore CSG poll and exit poll survey (Question 1) result .... 181
  7.5.2 Exit poll survey variations by district ..................................................................... 181
  7.5.3 Perceptions of the CSG industry ............................................................................ 182
  7.5.4 Information sources .............................................................................................. 184
  7.5.5 Strength of views ................................................................................................ 184
  7.5.6 Perceived influence on government ...................................................................... 186
7.6 Elicitation responses .................................................. 186
  7.6.1 Governance and regulation .................................... 187
  7.6.2 Science and research ........................................... 188
  7.6.3 Potential impacts ............................................... 188
  7.6.4 Sustainable energy ............................................. 188
  7.6.5 Other emergent themes ....................................... 189
7.7 Synthesis ............................................................. 189
  7.7.1 Perceived control ............................................... 190
  7.7.2 Attitudinal and normative belief ............................. 190
  7.7.3 Reflecting broader patterns of concern .................... 192
7.8 Conclusions ......................................................... 194
7.9 Reflecting on Chapter 7 ............................................ 195

8. Chapter Eight: Developing the Lismore CSG Poll – A University/Local Government Collaboration ........................................ 197
  8.1 Abstract ..................................................................... 197
  8.2 Introduction ........................................................... 198
    8.2.1 Regional universities and regional government ........ 199
    8.2.2 Background to CSG and the Poll .......................... 201
  8.3 Developing the Poll .................................................. 204
    8.3.1 The final question ............................................... 206
  8.4 Poll Outcomes .......................................................... 207
    8.4.1 Evaluation of the CSG Poll Development Process .... 209
  8.5 Discussion ................................................................... 211
  8.6 Conclusion ............................................................... 213
  8.7 Reflecting on Chapter 8 .............................................. 214

  9.1 Introduction .................................................................. 216
  9.2 Social License ................................................................ 218
    9.2.1 Components of social license ................................. 219
    9.2.2 Using the social license pyramid to explore social positioning ......................... 220
    9.2.3 Drivers of social license acceptance or withdrawal ... 221
    9.2.4 Drivers for social positioning on industrial developments .............................. 222
    9.2.5 Who grants social license? ...................................... 224
    9.2.6 Community opposition to the industry .................... 225
  9.3 Background of the Northern Rivers region ...................... 226
  9.4 Methods ................................................................. 228
    9.4.1 Research limitations ............................................ 230
  9.5 Results and Discussion .............................................. 230
    9.5.1 Community positioning on CSG developments ........ 230
    9.5.2 Motivations for social positioning .......................... 232
    9.5.3 Legitimacy and rural livelihoods .............................. 235
    9.5.4 Knowledge and Credibility .................................... 237
    9.5.5 Trust, identity and empowerment ............................ 238
  9.6 A diamond model of social license ................................ 240
  9.7 Conclusion ................................................................... 243
  9.8 Reflecting on Chapter 9 .............................................. 244

10. Chapter Ten: Thesis Summary and Conclusions ............................. 245
  10.1 Thesis Summary ....................................................... 246
  10.2 Main themes of the thesis .......................................... 246
10.2.1 Social dynamics ................................................................. 247
10.2.2 Social positioning............................................................... 248
10.2.3 Community engagement for land-use planning ....................... 250
10.3 Formalising social license to operate ........................................... 251
10.4 What does this case study tell us about social license for industrial developments in rural areas? 254
10.5 Communities, land use planning and sustainability ....................... 256
10.6 Conclusions .................................................................. 258
10.7 Future research directions ...................................................... 260

11. References ........................................................................... 261

Appendix A: Exit Poll Survey Form .................................................. 299
Appendix B: 2013 Survey Form .......................................................... 301
Appendix C: Ethics Approvals ............................................................ 303
Appendix D: Signed statements from co-authors ................................. 313
Appendix E–H: PDFs of published journal articles comprising Chapters 6–9 .......... 317
List of Figures

Figure 1: Diagram depicting the structure of the thesis .................................................. 19
Figure 2: Locating Chapter Two within the thesis structure .............................................. 23
Figure 3: Graphical representation of the chapter.............................................................. 24
Figure 4: Google search term volume between 2004–2013 (100 represents peak search volume). The red line corresponds to the term “fracking”; dark blue to “Gasland”; and pale blue to “shale gas”. Image source: Google Trends 2012...................................................... 33
Figure 5: Arnstein’s ladder of community engagement in decision-making processes. Source: Lloyd (2005) ......................................................................................................................... 39
Figure 6: Shield’s (2000) Hierarchy of Denial shows the steps that activists need to be aware of when attempting to mobilise a population. People must first know that an issue exists, and that there are alternative options before they will support a social movement, and/or participate in social action themselves. ........................................................................................................ 49
Figure 7: Thomson & Boutilier’s (2011) model of social license to operate....................... 59
Figure 8: Identifying Chapter Three within the thesis structure......................................... 69
Figure 9: The five phases of the research, which all responded to the key research aim (bottom right), and informed each other in turn........................................................................................................ 74
Figure 10: Locating Chapter Four within the thesis structure ............................................. 85
Figure 11: Location Map of the Northern Rivers. Image source: Regional Development Australia (2013) ................................................................................................................. 89
Figure 12: The Northern Rivers community marches in Murwillumbah. Photo courtesy of Richard Swinton.................................................................................................................. 97
Figure 13: Graph showing a conceptual timeline of social mobilisation, with key points corresponding to Moyers (2001) eight phases of a social movement, depicted in the yellow
squares, being 1) Normal times; 2) Demonstrating an institutional failure; 3) Ripening conditions; 4) Take-off; 5) Perception of failure; 6) Majority public opinion; 7) Success; 8) Continuing the struggle. The dotted lines show the levels of social license held by Metgasco and Arrow at different points in time. ................................................................. 105

Figure 14: Image source: Gasfield-Free-Northern-Rivers (2015) ................................. 106

Figure 15: The 'Gasfield Free Communities' events took place across the Northern Rivers, and began to spread to other regions of New South Wales and Victoria. Each small yellow placard represents a street and the yellow banners represent towns or villages that had been surveyed. Photo courtesy of Richard Swinton. ................................................................. 108

Figure 16: A model of a solar-thermal energy farm on display at Murwillumbah following the protest. Photo courtesy of Richard Swinton ................................................................. 108

Figure 17: New identities: the ‘Girls Against Gas’ dressed as superheroes with a yellow triangle on their front, with a particular focus on the adoption of renewable energies (many being members of the Youth Climate Coalition). Photo courtesy of Richard Swinton. .............. 111

Figure 18: The movement maintained pressure on their State level Nationals MP. Photo courtesy of Richard Swinton ................................................................. 112

Figure 19: Locating Chapter Five within the thesis structure ........................................ 121

Figure 20: The role of schema and social identification in the participation process ........ 127

Figure 21: The Lock the Gate triangle, symbol of community protest against coal seam gas exploration and mining, along with related messages made available to the public for posting on property entrances. (Source: http://www.keepthescenicrimscenic.com/signs-and-stickers.php) ......................................................................................................................... 133

Figure 22: Uncle Harry's ancient knowledge of aquifer interconnectivity: Ngaraakwal Bulbe Ancient Knowledge Australia’s Aquifer System Sacred Water. (Image by Uncle Harry Boyd, reproduced with his permission.) ................................................................................................. 135
Figure 23: Locked gates at Chinchilla fete (Photograph, Hanabeth Luke).........................137
Figure 24: The Customs House protest, Brisbane. (Photography, Hanabeth Luke)..............140
Figure 25: Lock the Gate President, Drew Hutton, speaking at the Lock the Gate Annual General Meeting. (Photograph, Hanabeth Luke).........................................................140
Figure 26: Fifth generation farmer, Lesley McQueen, addressing Henderson in Casino. (Photograph, Hanabeth Luke)..................................................................................141
Figure 27: Summary of interviewee concerns, based on a Wordle analysis of the interview transcripts (Friedman, 2011), in which the larger the word, the more times that the word was used by interviewees. This illustrates the common themes of concern expressed in the interviews..........................................................................................................................142
Figure 28: Locating Chapter Six within the thesis structure.............................................147
Figure 29: The two action research cycles of the study, showing how data gathered from the initial phase of observations and interviews was used to develop the second phase, where mind-mapping was adopted to enhance group understanding, focus, and cohesion......................157
Figure 30: Wordle™ word cloud plots, displaying the relative importance of ideas and concepts expressed by participants regarding the development of the BSANE group, based on analysis of interview transcripts; the clouds give greater prominence to words that appear more frequently in the source. These were later used to draw common themes with the mind-maps developed by the group. Top: concerns voiced by interviewees. Bottom: views of the group’s role and aims............................................................................................................................161
Figure 31: The mind maps generated at the BSANE workshop depict the group’s communal understanding of concerns, goals, and actions. These maps were able to unite the group with a common purpose, from which point they could develop more in-depth strategies for action. ........................................................................................................................................163
Figure 32: Effectiveness of the working of the BSANE group, based on Gladstein (1984) scores, before, during, and after the mind-mapping workshop. .................................................. 165

Figure 33: Results of testing the BSANE member perspectives of the groups’ effectiveness prior to the mind-mapping activity, especially demonstrating the relatively low level of member agreement on goals and objectives. ................................................................. 166

Figure 34: Locating Chapter Seven within the thesis structure.............................................. 171

Figure 35: Location map showing the area of Lismore City Council and the location of all polling stations; the shading represents urban areas (map by G. Luker). ......................... 178

Figure 36: Comparison of overall poll response (the left column includes absent voters), with exit poll survey results for Question 1 (which was the same as the poll question). ............ 181

Figure 37: Results from three booths, responding to Question 1 (the same as the poll question), selected for comparison due to their larger sample size (detailed on x axis). ..................... 182

Figure 38: Frequency of themes raised in the comments section of the survey (Question 8). ................................................................................................................................. 187

Figure 39: Locating Chapter Eight within the thesis structure................................................ 197

Figure 40: Timeline showing an overview of the CSG poll question development for the Lismore City Council election poll, 2012. ................................................................. 204

Figure 41: One of five signs erected by Lismore City Council to advertise the CSG poll result; this sign was still standing at the entrance to the City a year after the poll (Photograph: Hanabeth Luke). ........................................................................................................ 209

Figure 42: Locating Chapter Nine within the thesis structure............................................... 215

Figure 43: Thomson & Boutilier's (2011) model of social license to operate....................... 219

Figure 44: Community positioning on the CSG industry by LGA; strength of views (upper right); and response to the question: “Would you be prepared to change your mind, if credible evidence arose that the impacts of CSG were lesser or greater than you now think?”........ 231
Figure 45: Emergent themes from the qualitative data: the Wordle™ graphic highlights key motivations for perspective of the CSG industry in the Richmond Valley (upper), and then compared against Lismore results (lower)...........................................................................................................234

Figure 46: The extent to which respondents agree with the views of family and friends (upper left); the level to which respondents believe they can influence government decision making, divided up between the different views and the two LGAs (upper right); perceived knowledge (lower left) and any personal actions taken to support or not support the industry (lower right) .......................................................................................................................................................237

Figure 47: The diamond social licence model mirrors and extends the Thomson and Boutilier (2011) model below the ‘withdrawal’ boundary as individuals increasingly identify instead with the social movement .................................................................................................................................242

Figure 48: Locating Chapter Ten within the thesis structure .............................................245

Figure 49: A summary outline of the structure of Chapter 10..........................................246
List of Tables

Table 1: Participant comments, based on testing of the BSANE group’s perspectives following the mind-mapping workshop. ................................................................. 167

Table 2: Respondents’ views of potential positive and negative contributions of the coal seam gas industry comparing priorities of supporters and non-supporters of coal seam gas........ 183

Table 3: Respondents’ sources of information about coal seam gas comparing supporters and non-supporters of coal seam gas. ................................................................. 185

Table 4: Degree to which respondents felt they can influence government decision making with regard to coal seam gas development................................................................. 186

Table 5: Prioritised motivating factors for support or non-support of gas industry developments ........................................................................................................... 233
Chapter One: Introduction

"Open-cut mining is a devastating thing. Coal seam gas extraction, by contrast, involves relatively little disturbance of the surface.” - Tony Abbott, Former Australian Prime Minister

“It's not unexpected that shooting massive amounts of water, sand, and chemicals at high pressure into the earth to shatter shale and release natural gas might shake things up. But earthquakes aren't the worst problem with fracking.” - David Suzuki

“If this isn’t the biggest social movement Australia’s ever seen, this is going to be the biggest environmental disaster Australia’s ever seen.” - Drew Hutton, Lock the Gate President

“I haven’t got a problem at all with the coal seam gas industry- I hope they get in and I hope they make a lot of money out of it. The only thing I worry about is, they bugger my water up.” - Queensland gasfield resident (Parsons & Moffat, 2014:277)

1.1 Introduction

Large-scale industrial projects can have dramatic impacts on rural environments and the communities that live there. Gaps between land-use planning decisions and community aspirations can create conflict and, potentially, social resistance. Social licence is a term often used to describe levels of community acceptance for an industrial project (Joyce & Thomson 2000). Whilst some people may tolerate, adapt and even benefit from industrial developments, others may experience loss and frustration, in some cases being motivated to take individual or collective social action in opposition (Prno, 2013). Friction between community and industry can, in some cases, produce a large-scale, coordinated social movement. The Northern Rivers region of New South Wales, Australia, is one such place where direct community action has halted the development of a potentially large scale, rural unconventional gas industry (Hawke, 2015).

Widespread withdrawal of social license has arisen from a complex process of social dynamics that have taken place over a five-year period, with various activities leading to the increasing legitimacy of the social movement, whilst industry legitimacy decreased. The exit of the unconventional gas industry from the Northern Rivers was a significant outcome for the local community and costly for the companies that had attempted to operate there (Hawke, 2015).
This thesis draws on ideas of sustainability and social license, contextualised in previous rural development and natural resource management scholarly work, to examine the social dynamics that have led to social licence withdrawal for a potentially large-scale industrial development. The introduction provides an overview of challenges for rural areas including how migration, population, climate change, neoliberal market forces and energy industry expansion create converging pressures on rural areas, with a particular focus upon the Australian context. The social license construct will then be used to explore processes of industry acceptance or rejection.

1.2 Context: pressures on rural areas

Rural areas can be diverse in nature, with widely ranging environmental, demographic, cultural and economic characteristics. Some regions may be sparsely populated and isolated, others more densely populated and closer to an urban centre. Some rural places are well connected by roads, rail and internet, while others are not. Some rural areas have had long associations with industries such as agriculture, mining, forestry and/or tourism, and in contrast, others may still remain close to their natural state, away from direct or substantial human impact. Historically, many people were born and lived in rural communities for generation after generation to work in subsistence and commercial agriculture (Burton, 1987). Anthropogenic rural change has been occurring since the first evolution of humans, however as the population, skills and technologies grow and develop, the ability to utilise resources and impact upon the natural environment has increased exponentially over the proceeding centuries (Burton, 1987). As societies form and develop, unique cultures evolve where different ways of life, livelihoods, art, knowledge and pathways of communication become familiar patterns with which we develop expectations about our lives, our societies, and the future.

Rural areas are frequently subject to a broad range of external or internal pressures that include: the flux of demand for the resources that they produce; government policy decisions; unfavourable climatic conditions for agricultural production and a changing population structure that may relate to a declining youth population (Barr & Muenstermann, 2009). Relationships between environmental, economic and social pressures become increasingly complex (Reid, 2010), however the following sections will seek to introduce and outline some of the critical factors influencing the context of contemporary rural communities.
1.2.1 Social pressures

Some rural communities enjoy abundant access to the resources required to support a high standard of living, while in other areas people are poor, with limited access to resources. Some differences in standard of living are principally due to the natural environment within which they reside, while other impacts on quality of life are directly or indirectly due to anthropogenic effects (Felce & Perry, 1995). Human-induced effects may include historical and cultural inequalities; competition for land; poor waste management (leading to pollution and poor health); climate change and a range of complex interactions between these and other factors. As the global human population increases, so does the need for natural resources, making the inhabitants of rural areas subject to increased development pressures on many fronts (Burton, 1987; Pini & McKenzie, 2006; Reid et al., 2010a; Sutherland et al., 2011). From the late 18C, the industrial revolution prompted the start of a major population shift towards urban areas, and this process has been occurring across the world ever since (Allen, 2009; Harriss-White & Janakarajan, 1997). This strong trend of urbanisation that continues to the present day, particularly in the tropics, increases deforestation as cities demand increasingly industrialised and export-orientated agricultural production (DeFries, Rudel, Uriarte, & Hansen, 2010; FAO, 2010).

Alongside these global trends, people in the developed world may opt to move to rural areas for a variety of reasons (Bohnet & Moore, 2011). If not for economic reasons, individuals may choose to move to an area for reasons that relate to its ‘sense of place’. This may include its natural values, beauty, and cultural values (Schweinsberg, Wearing, & Darcy, 2012). For many decades, retirees have chosen to move to rural areas with aspirations to become a part of the ‘rural idyll’, also known as ‘tree changers’, or, if they move to the coast, ‘sea changers’. A new wave of tree changers comes as improved internet communication networks make it increasingly more possible for professionals to work remotely (Bohnet & Moore, 2011). People may also move to rural regions due to leisure pursuits, and/or because they see the identity of that region in harmony with their own aspirations (Bohnet & Moore, 2011). Once people settle in to rural communities and increase their social connections and leisure pursuits, they might not like to see the development of new industries that may alter that sense of place (Schweinsberg et al., 2012). The tree-changers themselves may bring with them value-systems that contrast with the existing population, that contribute to increased urbanisation or
gentrification with other social and environmental knock-on effects. Alternatively, they may place a higher value on conservation of the surrounding natural environment (Schweinsberg et al., 2012). Population growth and increased resource demand, against the backdrop of finite land and resources, can lead to complex challenges for rural communities. The vast majority of the food we consume is grown by agricultural and horticultural industries in rural areas across the globe. While a great deal more food will be required to feed our growing population, projected to pass nine billion by 2050, the land dedicated to agriculture is declining (Hanjra & Qureshi, 2010). Over the last five decades arable land has decreased by 13% globally, with pastoral land decreasing by 5%. Currently, global food production takes place on 12% of our total land mass (FAO, 2008). There is no rural industry more essential to meeting human needs than agricultural and horticultural food production, hence increasing food production and food security is a high priority on global and local scales (Lawrence, Richards, & Lyons, 2013). Goals to improve food production to eradicate extreme poverty and hunger can, however, be challenged by competing land-uses such as palm oil production and extractive industries, as well as economic forces that can lead to inequity in distribution of land, food and other resources (Hanjra & Qureshi, 2010).

1.2.2 Environmental pressures

In addition to increased competition for rural land, global demand for freshwater has tripled since the 1950s, and global supplies are in decline with a projected three billion people living in water-stressed areas by 2025 (Gleick, 2003). Water availability, quality and supply are essential for agricultural production and critical for global food security (Hanjra & Qureshi, 2010). The water resources upon which rural communities depend can become highly contested as competing demands from industry, agriculture and communities intensify (McKinney, 2002). Analyses show that as non-agricultural competition for water increases, irrigation and environmental flows are likely to be the first in line to lose water. Agricultural water use can itself become a critical concern as demand for irrigation water can lead to altered hydrology, land clearance and impacts on water quality (Hanjra & Qureshi, 2010). In regions where water resources are already scarce, this is likely to be an important factor influencing how rural communities will view proposed developments, with water-intense industries viewed at odds with existing livelihoods.

In Australia, 93% of food consumed is grown nationally. Of total agricultural production, 60% is exported, contributing to 16% of total merchandise exports (DAFF, 2010). The largest food
imports consist of fruit and vegetables. Australia already does not, however, have an abundance of high quality soils, with intensive farming practices contributing to salinization, acidification and erosion (Lawrence et al., 2013). Whilst the Australian population is expected to double by 2050, it has been forecast that converging land-use pressures, including poor land management resulting from intensive farming, are likely to halve horticultural food production in the same period (PMSEIC, 2010). When seeking to establish a social license in a rural area, it is therefore highly important that the proposed industry is not seen to be at odds with food production, or significantly impact upon the available water resources.

Climate change is already affecting rural livelihoods across the globe, with impacts on subsistence and smallholder agriculture (Morton, 2007) as well as on commercial agriculture and other rural industries (G. C. Nelson et al., 2009; R. Nelson et al., 2010). The effects of climate change are not felt evenly across the planet, nor across human societies, with some of the poorest communities experiencing the greatest impacts (Burgmann & Baer, 2012). Inequalities are being felt between nations as well as within nations (Lawrence et al., 2013). In semi-arid areas, grazing pastures are becoming less viable as temperatures increase while rainfall decreases (Garforth, 2008). Non-agricultural industries are also being impacted, such as alpine tourism, as snowfalls become less dependable (Elsasser & Bürki, 2002).

Australia is experiencing clear and significant changes in climate and weather patterns, with each decade in Australia becoming warmer since the 1950s (ABC, 2014). The first decade of the 21st Century was coined the hottest on record, however since then, national and state weather records continue to be broken (ABC, 2014). Economic pressure on rural areas has been felt in Australian states such as Queensland where they have experienced environmental damage and a huge clean-up bill from extreme weather events in recent years (Queensland-Government, 2015). Broadacre farmers have faced another external threat to their livelihood, as 51 of 74 Queensland local government areas were drought declared between 2013–2015 (McConchie, 2015; Queensland-Government, 2015). The majority of Queensland local government areas are facing their fourth year of extreme drought in 2016, with the drought also being widespread across western New South Wales and into the South Eastern state of Victoria (BOM, 2016). Such enormous climatic impacts on agricultural communities can destabilise rural economies and lead to farmers looking for alternative and supplementary income sources, while at the same time such conditions could also impact on perceptions of the sustainability
of an industry relating to its relative greenhouse impacts (Garforth, 2008; Hanjra & Qureshi, 2010; Head, 2014).

It is largely uncontested by the international community that the pressures of population growth and climate change are significant in rural areas globally, with various efforts underway to mitigate the scale and influence of each (Elsasser & Bürki, 2002; Garforth, 2008; Hanjra & Qureshi, 2010; Head, 2014). Market forces, largely shaped by political decisions and policy, can play an important role in how some of these pressures will play out in rural communities. Decision makers however, often struggle to balance demands for economic development with associated land use change and environmental risks in natural resource management (NRM) (Reid et al., 2010b; Suzuki & Dressel, 2003). While market structures are designed to boost and enable economic opportunities, they are not always designed with the optimum social and environmental outcomes in mind (Guptara, 2010).

1.2.3 Economic pressures

Many of the converging pressures on rural communities can lead to economic decline, with extractive developments offering alternative employment to a life in agriculture and rural service industries. Equally, all the goods consumed by human populations require materials that must come from somewhere, and many products require minerals that are produced by extractive industries located in rural areas. Energy needs for industry, transport and household use also place increasing pressure on rural areas as ever increasing tracts of land become subject to exploitation for energy resources. The expansion of urban areas, growth of food, construction of dams, erection of wind-turbines, a changing climate and the extraction of minerals and fossil fuels all add to pressures on rural landscapes, each bringing with them different benefits and challenges for the rural environment and the communities that live there. Rural industries can impact upon not only native flora and fauna, but also upon the water systems upon which local communities depend (McKinney, 2002; Remondi, Burlando & Vollmer, 2016).

Globalised economic norms can lead to increased economic pressures on rural areas, including capitalist principles and neoliberalism (Lawrence et al., 2013). Neoliberalism refers to improved competitiveness through the reorientation of the roles of government and industry towards capitalist, market-focused values, policy and ideas (Glassman, 2007). This can involve the ‘roll-back’ of market regulation, public benefits, national institutions and subsidies alongside the ‘roll-out’ of new policies that aim to focus decision-making upon a market-
orientated basis, with a principle goal of government being to compliment and stimulate market forces (Lawrence et al., 2013). Globalisation results from the influence of neoliberal market forces on a global scale, however is also associated with increased human connectivity, including access to the internet (Lawrence et al., 2013).

The face of agriculture itself is changing. In developing nations there have been cases of large-scale oil palm plantations replacing subsistence agriculture without adequate compensation arrangements, nor with prior informed consent from the affected communities (Lee et al., 2014). Australian farmers are not exempt from neoliberal market pressures, with Lawrence et al. (2013) using the Australian example to describe some of the implications of reduced trade barriers such as import restrictions and farm subsidies. Their view is that neoliberal market pressures are responsible for creating additional pressures on agricultural systems and the natural environment. In order to remain internationally competitive, Australian farmers adopt more intensive and efficient land management systems (Lawrence et al., 2013). Market pressures may influence the social license of an industry by directly increasing competition with agricultural industries, if it is viewed to be at odds with food production and farm viability, however there may also be more subtle implications relating to patterns of land ownership and management.

Changing patterns of farm ownership and management are evident globally, with market pressures and farm viability playing an important role (Lawrence et al., 2013). Barr and Muenstermann (2009) argue that the typical Australian family farm is not likely to succeed into the future due to the increased competitiveness that the globalised market demands. With a requirement to be competitive, farms need to be bigger, with a franchised business model playing a prominent role. They view that while 12% of the Australian economy can be attributed to agriculture, the management structure and farm size is likely to change in favour of a larger business structure. Foreign land purchases place an additional pressure on rural areas as countries such as Qatar, Saudi Arabia and China, unhampered by regulation, acquire land and agribusiness in Australia and elsewhere with the intention of producing food for sovereign consumption (Lawrence et al., 2013). Neoliberal market forces span far beyond direct impacts upon agriculture, playing a fundamental role in the management of natural resources as a whole (Cheshire & Lawrence, 2005; Glassman, 2007; Mercer, de Rijke, & Dressler, 2014). Factors such as land ownership, farm size and farm management structures are likely to influence how rural landowners will view the land and soil that they own. For example, it could be suggested
that a farmer who owns, manages and lives on a parcel of land may be more likely to hold greater concerns relating to the changes brought by industrial developments than an absent landholder who may own a much larger portion of land.

With these trends in mind, and in order to avert a severe food crisis in the near future, a fundamental shift in the way that our food production, water and energy resources are managed is necessary (Hanjra & Qureshi, 2010). Social license, and community perception of proposed developments, is one space where these pressures come together as communities position themselves to either support, or not support new industries. Climate change, population growth, food production, land degradation and equality of access to resources are all intersecting factors that may influence how social license will be enacted in rural communities.

1.3 Social license

A seminal definition is: “a social license can be considered to exist when a mining project is seen as having the ongoing approval and broad acceptance of society to conduct its activities” (Joyce & Thomson, 2000:49). Central to writing on the concept are Thomson and Boutilier (2011:1779), who define social license to operate (SLO) as “a community’s perceptions of the acceptability of a company and its local operations”. In their extensive and well-cited critique on the role of social license for industrial developments, Owen & Kemp (2013:29) define social license as representing “the (minerals and mining) sector’s efforts at reaching out to stakeholders—global to local—and a broad attempt to articulate the many ways in which companies are responding to societal and community expectations”. Thomson and Boutilier (2011) describe levels of support for an industry or project to be ‘psychological identification’, approval, acceptance and withdrawal. In their critical review, Owen and Kemp (2013) describe community support as coming in the form of explicit support, (reluctant) acceptance or lessening opposition.

The ways that constructive relationships between industry and community are fostered has been a primary focus of the social license literature (Lynch-Wood & Williamson, 2007; Nelsen & Scoble, 2005; Prno & Slocombe, 2012). Stakeholder engagement, consultation initiatives, relationship building and trust are unifying themes, with social license commonly viewed through a ‘risk-management’ lens. Dare, Schirmer, and Vanclay (2014:195) view social license as a “continuum of multiple licenses achieved across varying levels of society”. Understanding these ‘multiple social licenses’ and the interactions between them is viewed as crucial for
understanding, gaining and maintaining the social license of a community, principally through a process of building and balancing relationships between industry and community (Prno & Slocombe 2012; Boutilier, 2014). These inherent complexities relate directly to the nature of ‘community’ itself, a term subject to multiple interpretations (Baldry and Vinson, 1991; Kriplean et al., 2007; Schuler, 2010). Etzioni (1996) suggests that communities are groups of individuals who interact through relationships with each other and who share a commitment to a basic set of values, norms, meanings, and identity. A community may be defined by its local or regional geographical confines, referred to as ‘communities of place’, or may also refer to a group of people who share similar values and interests: (Delanty, 2003). Both of these conceptual understandings of community are relevant to this thesis, as social resistance movements frequently link with interest groups extending far beyond geographical boundaries (Martinez-Alier, 2001).

Improved frameworks for social license have been described as a ‘tool for collaboration’ (Boutilier, 2014: 271) to ‘reduce the undesirable kind of political instability’ (Boutilier, Black, & Thomson, 2012: 228). Such political instability has been described not only as politics at the electoral booth, but also socio-political activity that could affect social norms, policy or legislation (Boutilier, 2014). Whilst community power can be limited by the actions of police or military force, resistance can still become costly for industry (Boutilier, 2014). Boutilier (2014) argues that where improved relationships between community and industry can be fostered, there is a greater chance that a social license will not be withheld. An aim of social impact assessment is to understand ways of minimising negative social impact and maximising community benefit, which in turn is likely to affect community-level social licence for a project. Owen and Kemp (2013), however, criticise social licence, as currently applied, to be at odds with the objectives of sustainable development (Owen & Kemp, 2013). Boutilier (2014) calls for further research that can identify and explore dynamics between different social scales, and also relating to levels of entities (industry) that are subject to a social license, from localised to international scales. The mechanisms influencing community social license for projects will be discussed in greater detail in Chapter Two.

1.3.1 Social impacts

Literature on social impact assessment has been growing steadily since the 1990s, with various methodologies and tools developed for measuring social impacts of industrial projects (Banks, 1999; Flynn, 2012; Measham & Fleming, 2014; Parsons & Moffat, 2014; Prenzel & Vanclay,
The conduct, processes and type of industrial development, alongside the nature of the communities being affected, will determine the level and nature of social impacts. Social impacts do not occur evenly across communities, nor across the life-cycle of projects. Prenzel and Vanclay (2014) argue that social impacts can begin from the very first rumour of a project, supporting the rationale for early, ongoing and extensive social impact assessment and community consultation processes that occur over the life of a project (Parsons & Moffat, 2014). Industry can often default to economic or socio-demographic indicators for assessing social impacts without properly exploring the complex causal mechanisms that lead to social impacts (e.g. Banks, 1999; Flynn, 2012; Measham & Fleming, 2014).

Vanclay (2002) warns against a ‘check-box approach’ for establishing impacts, emphasising that the best social impact assessment allows impacts to be identified by the communities involved. He does, however, provide a broad outline of potential social impacts that include: a people’s way of life; their culture, community, health, well-being and participation in political systems; as well as their fears, rights and aspirations. While social impacts experienced elsewhere, or even by a similar industry in the past, can affect a social license, and impacts of energy developments have been a focus of many studies (e.g. Andermatt, 2011; Klassen & Feldpausch-Parker, 2011; McManus & Connor, 2013; Vengosh, Jackson, Warner, Darrah, & Kondash, 2014), this thesis is more interested in a broader view of social perceptions shaping social license in a rural context. What is of prominent concern is the dynamics of how people position themselves regarding industrial developments, which will lead to either community acceptance, or social license withdrawal.

1.4 Thesis problem: what are the dynamics of social license in rural areas?

Our ways of life, or livelihoods are dependent upon the provision of resources to meet our needs, while balancing economic, environmental and social costs and benefits of projects is a key aim of sustainable development (Ellis, 2000). There is an underlying assumption that the social license concept will align with sustainability definitions, however Owen and Kemp (2013) argue that a disconnect between the aims of sustainability and the aims of social license is a principle weakness of the concept.

As “a pathway to sustainability” (Vun, 2015:599), sustainable development has become a highly contested term since it was defined in the Brundtland Report (1987), as “Development that meets the needs of the present without compromising the ability of future generations to
meet their own needs”. Informing the development of Agenda 21, the United Nations action plan for global sustainability was set in play at Rio de Janerio, Brazil, in 1992. Since this time, the concept has become prominent in national, international and corporate policy. However, a variety of definitions and interpretations contribute towards “a large political battle for influence over our future by linking interpretation to the concept” (Mebratu, 1998:493). Giddings, Hopwood, and O’Brien (2002:188) warn that the Brundtland definition could be interpreted to mean “almost anything that anyone wants”.

While 95 percent of large companies in Europe and the USA have been reported to view sustainable development as important (Giddings et al., 2002), the efforts of the business sector or mining industry to engage with the concept have been neither consistent in approach nor definitions (Byrch, Milne, Morgan, & Kearins, 2015; Fonseca, McAllister, & Fitzpatrick, 2013, 2014; Pohekar & Ramachandran, 2004; Venuti, 2014). As a result, western decision-makers have framed sustaining economic development at the expense of the environment as ‘sustainable development’ (Dawe & Ryan, 2003). Huckle and Wals (2015:492) argue that transitions towards genuine sustainability have been stalled by a failure to challenge or even acknowledge neoliberalism as a prevailing force, resulting in “business as usual”, albeit with a sustainability badge, prompting “social movements seeking radical alternatives” as the only realistic avenue for citizen input. Echoed many times in the sustainable development literature, is the idea that achieving genuine sustainability requires giving citizens opportunities to influence decisions, before they are made (Hartz-Karp & Briand, 2009; Huckle & Wals, 2015; Klassen & Feldpausch-Parker, 2011; Reid et al., 2010).

Another challenge to sustainability is the role played by science, including the use and misuse of scientific knowledge to support industrial developments (Kläy, Zimmermann, & Schneider, 2015). While science is frequently promoted as objective and value-free, the reality is that science is frequently value-laden, sometimes simply due to research avenues that may or may not be pursued (Kläy et al., 2015). Kläy et al. (2015) argue that the knowledge produced by scientists should be transformative, acknowledging values as an integral part of a process that better connects disciplines and communities in the development of research priorities and strategies. Simply put, to achieve a genuine pathway to sustainability, society needs to be brought to science, and vice versa (Greenwood & Levin, 1998; Reed, 2008).

Visual presentations of sustainable development frequently reinforce the separation of environment, society, and economy, critiqued as the same anthropocentric view that caused the
problems that the concept of sustainability sought to address (Dawe & Ryan, 2003; Giddings et al., 2002). Discipline-specific academic focus has led many studies to be compartmentalised further into environmental, social and economic perspectives (Colantonio, 2009; Dawe & Ryan, 2003), with no consensus on definitions (Colantonio, 2009; Dawe & Ryan, 2003). Many scholars argue that in order to remain relevant and useful, the concept of sustainable development must be properly engaged with and clarified or re-defined, with improved connections fostered between economic, environmental and social aspects (Clark, Crutzen, & Schellnhuber, 2005; Dale & Newman, 2010; Dawe & Ryan, 2003; Giddings et al., 2002; Huckle & Wals, 2015; Reid et al., 2010).

The historical lens of international sustainability models such as the Brundtland definition of sustainability (Burton, 1987) and the industry study *Breaking New Ground: Mining, Minerals and Sustainable Development* (IIED, 2002) have been used to emphasise that as it is currently applied, the international pattern of policy decisions do not often provide a pathway to true sustainable community development (Owen & Kemp, 2013). They view the “tacit and amorphous nature” of a social licence to be a key constraint of the concept (Owen & Kemp, 2011:34). Whilst society faces a plethora of ‘grand challenges’ for sustainability, there have been urgent calls for research and development towards improved mechanisms that can allow science and society to better address decision making and the needs of citizens at global, regional, national, and local scales (Reid et al., 2010). Energy industry expansion is viewed as a ‘wicked problem’, with a complex system of costs and benefits that are construed or framed in very different ways, and with short-term interests that may be at odds with long-term aspirations (Head, 2014; Kwakkel & Pruyt, 2015).

### 1.4.1 Energy pressure

All of these social, political and economic pressures create different challenges for rural environments and societies, with a complex intersection of factors playing a role at the core of the international energy debate (IIED, 2002; Reid et al., 2010). With demand for energy still rising, the pursuit of energy sources is a topical issue globally. While an abundance of fossil fuels has enabled the development of contemporary ways of living for billions of people on this earth, the pressures of climate change are increasingly felt by humans and other species.

Neo-liberal market forces play an intrinsic role in the expansion of the energy industry (e.g. Brady & Crannell, 2012; Venuti, 2014). In Australia, abundant sources of coal have supported the progress of European settlement since the first reserves were discovered in 1791. With six
percent of the world’s black coal deposits, Australia is the fifth largest coal producer in the world, and until recently was the world’s largest exporter of coal. Australian exports make up almost a third of global coal exports which generates a revenue of up to $45bn each year, with State governments receiving ten percent (Mudd, 2013). The coal industry contributes to 1.8 percent of the total Australian economy and almost a quarter of the Australian resource economy (Davidson and Silva, 2011). Davidson and Silva (2011) estimate that the greater ‘coal economy’ creates 3.7 jobs for every employee of the coal industry, with over 180,000 Australians benefitting financially from coal.

While the economic impacts can be very positive, the environmental and social impacts of the coal industry are felt by rural communities on a local scale, and climate change impacts are felt globally (Head, 2014). Over eighty percent of Australian coal is produced from open-cut mines that create about 500 million tonnes of greenhouse gas emissions annually (Mudd, 2013). There are numerous environmental and health impacts that arise from coal, with coal fires continuing to burn all around the world (Stracher & Taylor, 2004). These release noxious gases that have severe implications for the health of populations dwelling in close proximity, however coal mining also leads to atmospheric and water pollution, acid rain, perilous subsidence and the destruction of natural habitats for native species (Stracher & Taylor, 2004).

Whilst fossil fuels receive increasing criticism as nations, companies and consumers seek to reduce their carbon emissions, alternative energy solutions may not always be as green as they seem. Hydropower has created a huge reduction in emissions in countries such as New Zealand, however this frequently requires the building of dams that flood large valley networks, and can come with serious negative environmental, human, and political consequences (Brown, Tullos, Tilt, Magee, & Wolf, 2009). Biofuel production can also negatively impact upon rural livelihoods and natural environments, requiring large areas to be deforested, or transformed from food-production into monocrops such as palm oil (Rasch & Köhne, 2015). Renewable industries have also received negative press, with wind and gas developments both being referred to as ‘energy sprawl’ (Jacquet, 2012).

1.4.2 Unconventional energy pressures

With conventional fossil fuel resources dwindling, exploration and production has extended towards ‘unconventional’ sources such as brown coal, tar sands, shale oil, and shale and coal-bed (also known as coal-seam gas) sources of methane in many parts of the world (Control-Risks, 2012). Threats to rural livelihoods and rural landscapes increase as industry and
governments seek to source cheaper energy sources to drive their economies (Sherval & Hardiman, 2014). Unconventional sources of oil and gas usually require ‘unconventional’ extractive techniques such as hydraulic fracturing, popularly known as ‘fracking’, which has become a focus of international controversy due to concerns around impacts upon water and rural livelihoods (Control-Risks, 2012; Sherval & Hardiman, 2014).

Until now, previous international calls to address greenhouse gas emissions have taken a back seat in many parts of the world, where top-down directed policy has remained strongly in favour of the extension of fossil fuel extraction (Venuti, 2014). Whilst such policy retains the favour of well-established companies such as British Petroleum, Shell Petro-China, Australia Pacific LNG and many others (e.g. US GAO, 2012), this has increasingly come at a cost in regards to public support (Control-Risks, 2012).

Whilst unconventional gas has been labelled as a fuel that can bridge a transition from fossil fuels to renewables, Stephenson, Doukas, and Shaw (2012) argue that investment in gas infrastructure could serve to delay rather than facilitate the transition to low or zero carbon emissions. This view is being expressed by an increasing number of individuals around the world, creating an important ideological basis to the global energy debate, and for local decisions regarding new industrial developments for fossil fuel expansion (Control-Risks, 2012; Howarth, Ingraffea, & Engelder, 2011; Petroff, 2013). Powerful discourses and competition between existing land uses and the unconventional gas industry impact a regional sense of place centred on community, rurality, agricultural production, and may potentially threaten the long-term sustainability of the regions affected (Sherval & Hardiman, 2014)

1.4.3 Energy industry planning

From the 1970s, energy and rural planning efforts were focused primarily upon exploration of energy-economy relationships. Raised environmental awareness in the 1980s saw a move to consider environmental factors, with considerable efforts to factor in the economic value of ecosystem services (e.g. Sullivan, 2010). In more recent times, social factors have played an increasingly important role in planning for energy industry expansion (de Groot, Alkemade, Braat, Hein, & Willemen, 2010; Pohekar & Ramachandran, 2004). Scholarly work around social responses to developments is often presented from an industry perspective, where the potential for social resistance is a risk to be assessed and appropriately managed alongside other investment risks (Control Risks, 2012). In some cases a lack of emphasis on rural community participation and engagement in decision-making has been legitimized and
rationalized due to a range of factors, particularly that the process can be time consuming and costly (e.g., Pini & McKenzie, 2006), however a growing body of literature supports early stakeholder engagement as a worthy investment (e.g., Boutilier, 2014; Prno & Slocombe, 2014; Williams & Walton, 2013; Prno, 2013).

The International Institute for Mining and Metals (ICMM, 2012) suggest that a contributions/trade off perspective when working with communities regarding project development can take industries a step closer to sustainable development. Owen and Kemp (2013) explain, however, that in order to truly engage with social sustainability and corporate social responsibility obligations, there is a need to engage with tensions between profit maximisation in the short-term, and the provision of long-term value for the company or industry and the local community, and community values may not always have a purely economic base (Head, Trigger, & Mulcock, 2005). Whilst the attainment of long-term resource maintenance, management and conservation is a principle sustainability aim for rural communities, within our existing, larger governance structures, policy decisions may not always reflect the local context in which they are implemented.

1.4.4 Community engagement in land-use planning

Blühdorn and Welsh (2007) critique a prevailing belief in the compatibility and interdependence of consumer capitalism, the industries involved in delivering these goods, and the ecological sustainability or rural areas. They view political decision-making as primarily motivated by neoliberal concerns, with the consumer capitalist model regarding ecological and social concerns as technical constraints. The business case for developments, or the status quo of ‘business as usual’ leads to industry holding a greater share of power over resource management decisions (Owen & Kemp, 2013). Others view that harmony between our economic system and long-term sustainability is possible, where the top-down paradigm of decision-making can be improved by better engaging communities in decision-making and policy design (Venuti, 2014; Head, 2007).

For some time, the need for communities to take greater responsibility for their own economic and social development has been a persistent theme in rural development discourse (Herbert-Cheshire & Higgins, 2004; Wallington & Lawrence, 2008). Similar themes are apparent in the natural resource management literature, as top-down governance for rural areas shifted to more community-engaged, distributed power and decision-making models for at least some schemes and initiatives (Wallington & Lawrence, 2008). Lane, McDonald, and Morrison (2004) view
that exchanging larger governance structures for more regional governance can better harness the aspirations and agency of communities, whilst reducing the need for regulatory intervention. Links between community deliberation and local democratic process that can be achieved by participatory planning are based upon fostering ownership of natural resource management concerns from the bottom-up.

Whilst these approaches may create some environmental improvements and provide some people with comfort, Cheshire and Lawrence (2005) warn that such initiatives do little to combat the larger market forces at play regarding industrial developments, and the increasing ‘productivism’ that leads to the larger, business-based farming model. The sustainable development literature frequently argues that communities should have agency over their own future, however the reality of governance in a globalised, neoliberal world is that decisions involving large-scale industrial projects rarely come from the bottom up (Fraser, Dougill, Mabee, Reed, & McAlpine, 2006). Whilst some sustainability initiatives and governments seek to balance competing demands on rural areas by taking social factors into account, and by involving rural communities in decision-making, how this is practically applied often falls short (de Groot et al., 2010; Pohekar & Ramachandran, 2004).

The primary focus of resource planning still orientates strongly towards the neoliberal, economic objectives of growth and efficiency, with community input still often an ‘end of the pipe’ consideration (Eggenberger & Partidário, 2000). This approach to energy production appears to be continually resulting in varying levels of conflict between communities and industry operators (Klassen & Feldpausch-Parker, 2011). In regards to the expansion of the unconventional gas industry in Australia, Venuti (2014) argues that coal seam gas regulation and policy fails to apply a balanced approach to environmental and agricultural concerns due to the substantial economic incentives involved. Coal seam gas provides a demonstrative case-study of the extent of the incompatibility of emerging areas of energy policy and law in regards to socially and ecologically sustainable development (Venuti, 2014). Solving such challenges requires finding ways to better understand the complex connections and disconnections between society, natural resource management, and policy.

1.4.5 Taking communities seriously

Some of the pressures that rural areas are subject to, from multiple angles, have been discussed in the previous pages. As urban sprawl encroaches on farmland, market forces place an ever-increasing emphasis on farm profitability, whilst, at the same time, climate change increases
the uncertainty of crop productivity. Demand for minerals and energy drives extractive industries deeper into rural areas and must compete with, or find an uneasy co-existence with farmers and rural communities. These competing pressures are likely to influence priorities and concerns of rural residents, which will ultimately affect the context in which communities respond to rural change, including social license for new developments.

In order to reconnect policy making and the social context, within which it is implemented, Wallington and Lawrence (2008) describe the necessity of responsive government-public discourse that “takes seriously the socio-cognitive competence of lay publics and their capacity to reframe public issues”, with more democratic resource management decisions in the future that not only involve, but adhere to, community views, expectations and aspirations (Wallington & Lawrence, 2008:287). If communities are not happy with the developments taking place, this has the potential to create social risks for industry that might take shape in different forms of community resistance. With raised community voices having the potential to become more influential in resource decision-making on a global scale (Prno & Slocombe, 2012), a deepened understanding of how social license is formed, gained and lost is an essential element of land-use planning into the future.

1.5 The research question

The social license literature provides useful frameworks for understanding how individuals and communities can progress to increasingly higher levels of approval for industrial developments, and what companies need to do to encourage increased support. Whilst different types of social risks are discussed, once a social license has been withdrawn, there is little focus on the processes that take place beyond that point.

Boutilier (2014) describes an industry view that the term ‘social license to operate’ has been used by project opponents to mask ‘questionable legitimacy’ for dissuading industry professionals from pursuing developments. He calls out for empirical research that can shed light on how “divergent connotations of the term hamper effective dialogue about it” (Boutilier, 2014:269). He suggests that there are three main factors upon which perceived legitimacy of social license withdrawal rests upon:

1. Community consultation was insufficient
2. Valid referenda or opinion polling
3. The public views that net benefits of the project do not exceed the status quo
Boutilier (2014) deems that more research is required to test these hypotheses, and to gain a greater understanding of social license and the dynamics behind its granting, or, particularly, withdrawal, on different social scales, as an obstacle to stakeholder engagement by companies. Central to the writing on social license to operate, Prno (2013) examined some of these ideas using comparative case studies to gain a deeper understanding of factors affecting the establishment of social license. Emerging from this analysis, Prno (2013) identified five guiding principles for establishing a social license to operate:

1. Context is key
2. Sustainability as a dominant concern for communities
3. Provision of local benefits and public participation plays a crucial role
4. A social license to operate is built on relationships
5. Confronting complexity requires an adaptable approach to community engagement

Following this analysis, Prno (2013:587) raises that “there remains a need to determine how these guiding principles can best be operationalized in the context of differing social, political, and economic realities at different mine sites around the world”. He identifies several conceptual questions, including how different viewpoints can be better understood in a community; appropriate indicators and methods for their analysis and measurement; the level of community support required to say a social license has been issued; and what holding a social license to operate actually means. Owen and Kemp (2013:30) critique the term ‘social license’ as “an industry response to opposition and a mechanism to ensure the viability of the sector”. They describe a gap between the aims of the social license concept and the aims of sustainable development, that manifests in rural areas as a disconnect between industry activity and community aspirations.

In order to understand the social dynamics that drive social positioning on industrial developments, the aim of this thesis is to use the social license lens to draw together the gaps identified by Owen and Kemp (2013), Prno (2013) and Boutilier (2014) to answer the question: “what are dynamics of social license for industrial developments in rural areas?”

### 1.6 Thesis Objectives

In order to address the thesis aim, the following five objectives were identified:
1. Gain an understanding of why community members position themselves for, against, or neutrally towards industrial developments using mixed methods.

2. Analyse social dynamics occurring, on a community, inter-group and intragroup scale, and how these influence social positioning on social license for developments, from an individual to a community scale.

3. Examine how community processes can influence policy decisions.

4. Explore how background attributes of a region can affect values and hence positioning on social license.

5. Critique the social license concept and improve its usefulness for natural resource management and land use planning.

1.7 Overview of the Thesis

Figure 1: Diagram depicting the structure of the thesis

Chapter One provides the context and rationale for the study, as well as the thesis aims and objectives.
Chapter Two provides an overview of the existing literature on how people and communities position themselves regarding industrial developments. Social dynamics are discussed that may affect or be affected by social positioning, and influence community-level social license for developments. Existing literature on social license for industrial developments is thoroughly reviewed in this context, with case studies described where social license has been achieved and maintained, with other cases described where social license has been withdrawn.

Chapter Three addresses the mixed-methods, case study approach used in this thesis.

Chapter Four introduces the case study of the Northern Rivers region of Australia, and how residents responded to unconventional gas developments there. The fourth thesis objective is addressed in terms of providing a regional context to the study, however an analysis of how background attributes affects values and social positioning is discussed later in Chapter Nine.

An account is provided of unfolding events from when some of the first drilling took place in 2010, up until the coal seam gas industry exited the Northern Rivers in 2015. Due to the social movement that arose as a result of community opposition, this chapter is framed using Moyer’s (2001) ‘Movement Action Plan’ (MAP) model of social movement evolution. This chapter begins to address the first and second objectives of this thesis by describing an overview of social processes occurring, how the community was positioning itself on the coal seam gas issue, and what broad social dynamics were occurring. The fourth thesis objective is also addressed in this chapter, where it is explained how the social resistance movement influenced Local and State Government policy, and decision-making.

Chapter Five is a published research paper that addresses the first and second objectives of the thesis, providing insight into how community views were forming in early 2011, and exploring inter-group dynamics occurring at the start of the anti-CSG social movement. There is a focus on how social identity and power relationships affected the decisions of people in different social groups to work together, or not, in some cases. It also describes some of the social actions and events taking place in greater detail, and how they shaped the social movement at the time.

Chapter Six is a published research paper that focuses on the second thesis objective, exploring intra-group dynamics, and how individual concerns drove group formation as the social movement began to take shape in 2011. This chapter also addresses Objective One, in terms of how individual views and positioning on an issue come together to form goals and
objectives, hence group positioning on an issue. Challenges of group dynamics are discussed, and an example is given of how visual tools can be used to engage community groups, and focus people on a united purpose by clarifying aims and objectives in a transparent way.

**Chapter Seven** is a published research paper that addresses the first thesis objective, exploring why people position themselves for, against or neutrally towards developments, on a community scale. The chapter reports the results of an exit-poll survey that took place at a local government for better understanding motivations for voting ‘yes’ or ‘no’ to supporting coal seam gas developments in their region. The role of the poll and survey is discussed, for providing a transparent, community-engaged process of deliberative democracy, and how this impacted upon the legitimacy of the process, and its potential use for understanding community-level social license.

**Chapter Eight** is a published research paper that describes how a stakeholder-engaged process was used to develop a referendum-style poll, where 87% of those polled voted against gas industry developments. The chapter explains how the processes of the poll legitimised community views that were later integrated into local and state government policy, addressing thesis objectives three and five.

**Chapter Nine** is a research paper, currently under review, that compares election-surveys in two different local government areas within the Northern Rivers, with the fourth thesis objective being a primary focus of this chapter. The geographical, economic and cultural context of the two regions is discussed in light of the rationale reported in the surveys for different social positioning on gas industry developments. The fifth thesis objective is addressed in detail here, drawing discussions back to the social license frame. The social license concept is found to inadequately explain processes taking place in the Northern Rivers case study, hence the commonly used-pyramid social license model of industry acceptance is extended, to more accurately reflect social processes occurring.

**Chapter Ten** draws together the findings of the previous five chapters and discusses their contribution to the social license and sustainability literature. In this final chapter, the thesis reflects on the extent to which its five objectives have been addressed, explaining what this case study has confirmed that we already know, and what new knowledge has been generated from this exploration of social license for industrial developments.
1.8 Conclusion

This introductory chapter has established the study context, given a broad overview of the issues, and introduced the conceptual framework of the thesis. The next chapter will explore these themes in detail by returning to the literature. The thesis will then be returning to the case study in Chapters Three and Four.
Chapter Two: Literature Review on Social Responses to Industrial Developments, Drivers for Industry Acceptance versus Social License Withdrawal and Social Action

Chapter 1: Introduction
- Pressures experienced by rural areas
- The role of community engagement in regional planning

Chapter 2: Literature Review
- Drivers for social positioning
  - Social dynamics
  - Social movements
  - Social license

Chapter 3: Methods
- Mixed-Methods Research

Chapter 4: The Case Study
- Case study of coal seam gas developments in the Northern Rivers region of Australia

Chapter 5: Key informant interviews (Published paper)
- Formation of social positioning
- Inter-group dynamics

Chapter 6: Focus group (Published paper)
- Social positioning within groups
- Intra-group dynamics

Chapter 7: Lismore Survey (Published paper)
- Social positioning
- Social dynamics on a community level
- Community engagement in decision-making

Chapter 8: Poll Development (Published paper)
- Community engaged-decision making process
- Policy implications

Chapter 9: Regional Context (Paper in press)
- Role of regional context in social license
- Social license diamond model

Chapter 10: Conclusions
- The role of social license and community engagement in regional development and planning for natural resource management

Figure 2: Locating Chapter Two within the thesis structure
2.1 Introduction

Figure 3 shows a graphical representation of this chapter that examines three main areas of literature: drivers of social positioning on industrial developments - social resistance and social license. First, challenges and opportunities for land-use planning are discussed in regards to contentious developments, and the concept of social positioning is introduced. Following this, a range of factors that have been found to affect community positioning that influences social license for industrial developments will be explored. These factors include knowledge and information; engagement approaches; proximity to developments; experience with industry; socio-demographics; identity; trust; sense of place; worldview; economic and environmental values. These factors are discussed in relation to several types of industrial development. However, due to the broad body of recent literature, and that the fact that the case study focuses on unconventional gas developments, a greater proportion of literature relating to this has been cited. Social dynamics of frictions that take place when globalised industry meets local
communities are then discussed. Processes of social movements are described from a structural scale down to an intergroup, intragroup and micropolitical perspective, with several examples discussed in relation to social license outcomes for industries in different situations.

2.2 Challenges and opportunities for energy and land-use planning

Large-scale industrial projects, supported by government permits, policy and legislation, have led to multinational companies laying claim to rural lands (Mercer, de Rijke & Dressler, 2014). Some scholars express concerns around homogenising effects that can occur when multinational companies meet local communities (Van der Ploeg, 2006). Others view interactions between the ‘global’ and ‘local’ as processes of negotiation between active agents (Massey, 2005), and, that connectivity with global networks can transform local practices into hybridised global practices (Woods, 2007). Some of these interactions can cause ‘friction’, as processes of resistance occur when there may be differing social positioning regarding developments within communities, and/or where people seek to reject industrial developments (Tsing, 2005). As companies interact with some local residents and not others, and as some residents support developments while others do not, community resistance becomes interwoven within everyday politics, with some communities finding themselves divided over their positioning on resource developments (Rasch & Köhne, 2015).

For natural resource management, there are two main recurring themes in the literature that seek to reconcile frictions occurring between local communities, farmers, industry and governance. One is the need for increased community involvement in land-use decision-making and planning (e.g. Head, 2014), and the other is an increasing need for integrated management of water and energy resources, referred to as the water-energy nexus (Cherchi, Badruzzaman, Oppenheimer, Bros, & Jacangelo, 2015). Impacts relating mostly to water consumption and quality have been a driving force of community opposition and scientific caution relating to energy developments in a number of nations (Camargo, Merschmann, Arroyo, & Szklo, 2014; Uliasz-Misiak, Przybycin, & Winid, 2014; Vengosh, Jackson, Warner, Darrah, & Kondash, 2014). High water volumes can be necessary for some types of fuel extraction and production, whilst some methods of water acquisition and distribution can be energy intensive, hence their integrated management could bring about important environmental and economic benefits. For unconventional energy industries such as shale oil, shale gas and coal seam gas, the water impacts can be significant, and integrated assessment and management could inform a more comprehensive cost-benefit analysis (Jenner &
Lamadrid, 2013). Sevenant and Antrop (2010) pull these two separate notions of resource management and community aspirations together under the umbrella of transdisciplinary landscape planning, however little research has been published under that label in recent times.

Martinez-Alier (2001:167) argues that the key issue for land-use planning is “a clash in standards of valuation when the languages of environmental justice, or indigenous territorial rights, or environmental security, are deployed against monetary valuation of environmental risks and burdens”. Whilst there is still a significant gap between those who make decisions about risks and those affected by risks, land-use conflicts and resistance movements are likely to continue to emerge (Ali, 1999; Muradian, Martinez-Alier, & Correa, 2003). Industry and governments have been continually criticised for the ‘decide-announce, defend’ approach to land-use planning, and research shows that community participation in decision-making process, prior to project commencement, can have an important influence on social license attainment for industry (Prno, 2013).

Previous research demonstrates alternative models to top-down decision-making processes, that, to be implemented more widely, are likely to require a cultural paradigm shift in governance (Klassen & Feldpausch-Parker, 2011). Klassen and Feldpausch-Parker (2011) suggest the use of a ‘Trinity of Voice’ approach to land and resource decision making, where communities are given ‘access’ to information and process for understanding the implications of land-use decisions, whilst their values, opinions and concerns, or ‘standing’ on the issue are valued and integrated, with a genuine capacity to ‘influence’ ultimate decisions, including whether projects will go ahead or not. The Trinity of Voice concept closely aligns with what Hartz-Karp and Briand (2009) call ‘deliberative democracy’.

These approaches to public politics aim to transform decision-making through “improving collective decision-making [and ... emphasising] the right, opportunity, and capacity of anyone who is subject to a collective decision to participate ... in consequential deliberation about that decision” (Dryzek & Niemeyer, 2012:1). The key element of deliberative democracy is communication, specifically that citizens have the opportunity and ability to effectively participate in decisions that affect them. Requirements for deliberative democracy have been described as: ‘integrity’ including transparency; inclusion of a diverse range of values; deliberation using sufficient and credible information; involving opportunities for community influence on process. Whilst these processes prompt a more genuine public involvement in decision-making, they still revolve around making a decision on a particular topic or specific
project. To truly engage with sustainable development and to avoid social unrest and costly land-use conflict, where the agency of communities to plan for their own future can be better harnessed, then the local agenda can be set by the communities themselves rather than by outside entities (Klassen & Feldpausch-Parker, 2011). Examples are provided later in this chapter that demonstrate public participation in decision-making prior to and during extractive developments, with co-ownership and management leading to projects being developed in ways that were better aligned with the needs and aspirations of local communities (Prno, 2013). Such strategic partnerships can utilise local skills and abilities to better engage them in decision-making and development planning (Martinez & Franks, 2014; Muradian et al., 2003).

Whilst there are still challenges involved in managing a strategic planning approach, it has been found to work well in the cases in which it has been implemented (Anguelovski, 2015; Berry, 1994; Butler & Adamowski, 2015; Manzo & Perkins, 2006; Reed & Del Ceno, 2015; Simpson, 2001). Leys and Vanclay (2011:582) present a model for social learning that can be used as a tool for community engagement that promotes the “integration of robust science with local knowledge” for community adaptation, change, and agency in decision-making in a land-use context. This model builds upon the concept of co-management by local communities that has been successfully integrated into New Zealand law using treaty-based approaches for the Maori community (Ruckstuhl, Thompson-Fawcett, & Rae, 2014). While local planning efforts can still be overridden by decisions made by higher tiers of government, a new approach requires a paradigm-shift away from prominent macro-forces of a neoliberal agenda set by national and state governments in many parts of the world (Mercer et al., 2014). An improved understanding of interactions between community values and aspirations, social positioning and social dynamics occurring, will help to inform a better understanding of how a social license is enacted in response to a proposed or existing development.

2.3 Social positioning regarding industrial developments

For industry, some of the most important concerns when considering plans for expansion are the potential resource availability and accessibility, however increased emphasis has been placed on environmental, and increasingly, social factors (Camargo et al., 2014). A growing body of literature describes social responses to industrial developments in the context of land-use conflicts, with Muradian et al. (2003) labelling environmentally risky industrial developments that produce opposition between the ‘national interest’ and local populations such as energy projects and mines as ‘locally unwanted land uses’, or LULUs. Although
scientific research may itself be a sound basis for industry and governments to make decisions around resource-management, scientific knowledge may not be the most important basis for community views in the case of LULUs (Eaton, 2013). Whilst the scientific argument is used frequently by industry and resisting communities, often the rationale for objections goes beyond what scientific knowledge can provide. Individuals within a community are likely to hold a range of different opinions regarding the values and/or impacts that developments may have in relation to their region (Prenzel & Vanclay, 2014), and these in turn will affect their ‘social positioning’ regarding a project. Social positioning is the formation of opinions against or in favour of a specific issue, anchored to existing understandings of similar concepts (Clémence, 2001). Breakwell (2001) describes social positioning on an individual level as an aspect of, or, it could be argued, an outcome of, ‘personal representations’, which, through social interactions will influence, and be influenced by, shared social representations of ideas, concepts or objects. Personal and social representations can thus be regarded as both a product and a process of the development of community views, opinions, attitudes and behaviours towards concepts such as industrial development (Clarke et al., 2015; Deaux and Philogène, 2001; Moscovici, 2001). The pages that follow explore some of the drivers that have been found to influence social positioning on social license for industrial developments, as identified in previous studies.

2.3.1 Geographical location - the NIMBY phenomena

While geographical context is one aspect of social license discussed later in this thesis, ‘NIMBYism’ is another. A common claim of industry proponents is that community resistance towards projects can be attributed to ‘NIMBY’ (‘not in my back yard’) opinions from residents that live near to developments (Boutilier, 2014). Studies investigating public complaints of wind farms impacting wildlife and humans found impacts to be negligible, while proximity was an important motivator in this case (Doolan, 2015; Swofford & Slattery, 2010). Research on public perceptions relating to proximity for other industries have found the ‘NIMBY’ analogy to oversimplify the rationale for negative responses to developments, with other drivers often found to be more important (Cotton, 2013; Jacquet, 2012; Stewart, Pullin, & Coles, 2007).

Whilst less intensive and obviously destructive than open cut mining, the unconventional gas industry requires an expansive footprint (Rutovitz, Harris, Kuruppu, & Dunstan, 2011). Until recently, petroleum exploration licenses covered more than a quarter of the Australian
landscape, affecting almost all main water catchment areas, hence the extent of back yards affected was quite significant. This creates an interesting influence on the NIMBY dynamic when the potential for development is so widespread. Regarding unconventional gas developments in the United States, statewide polling found that geographical location did not significantly influence social positioning. Studies that have focused in on gas-affected regions found that while people had greater knowledge of the processes involved, the proportionate positioning of their views for and against developments were still relative to national proportions of support for unconventional gas developments. Different methodologies have, however, brought out vastly different results, with surveys that take place in cities found to be generally more positive towards industrial developments in rural areas (Boudet et al., 2014). Conversely, other studies of similar industries in the United Kingdom found that opposition was more likely to come from urban areas (Shackley, Mander, & Reiche, 2006). An Australian survey of a nation-wide resistance group against coal and gas developments found that a significant majority of members lived in rural areas (Colvin, Witt, & Lacey, 2015).

2.3.2 Socio-demographics

Previous studies in the United States demonstrated that women and racial minority groups were generally less likely to support energy developments, whilst age was an unreliable predictor of social positioning on industrial developments (Boudet et al., 2014). Higher education levels and income have been found to be associated with opposition to natural gas drilling (Colvin et al., 2015; Jacquet, 2012) and support for wind power (Firestone & Kempton, 2007), however Boudet et al. (2014) found the inverse, where higher education levels were a predictor of support for gas industry development. When members of the ‘Lock the Gate’ resistance group were surveyed in Australia, it was found that a greater proportion were females, two thirds of respondents were over 45 years old, and over half held a minimum qualification of a bachelor’s degree, twice the national Australian average (Colvin et al., 2015).

2.3.3 Economic benefits

There are conflicting findings in the development literature regarding the idea that industry always provides communities with an overall benefit by the provision of jobs and economic benefits. In some documented cases, unequal benefits have had the effect of severely fracturing indigenous communities, creating an overall force of disadvantage rather than empowerment (e.g Langton & Palmer, 2003). Employment is, however, a consistent driver of positive attitudes towards industrial developments when individuals or family members had worked
for, or financially benefitted from the industry in question (Shackley et al., 2006). In addition to the financial benefits involved, such transactions are likely to increase personal experiences and discussions with industry representatives, with exposure to industry representations and perspectives (Jacquet, 2012; Kriesky, Goldstein, Zell, & Beach, 2013). So even in the context of financial benefit, influencing effects on attitude can be complex, and more research in this area could illuminate whether it is the increased interactions with industry, or the money itself that creates the greatest influence. The work of Robinson, Styles, Evernden, and Kirkham (2013) highlights relationship building to be a primary driver of success for projects. Relationship building has also been broadly identified as a key factor influencing social license to operate for industrial developments (Dare, Schirmer, & Vanclay, 2014; Parsons & Moffat, 2014; Prno, 2013).

### 2.3.4 Experience

The community experience of developments taking place can have an important impact on knowledge levels and attitudes towards developments (Kriesky et al., 2013; Rabe & Borick, 2011). Polling and surveys in areas experiencing gas developments found higher levels of knowledge more prevalent. A 2011 survey of Pennsylvania residents found that 48% followed the topic of gas developments “somewhat” or “very” closely (Kriesky et al., 2013). One third of respondents saw the problems were exceeding the benefits, whilst 41% perceived the benefits to exceed the problems, and a quarter saw them to be about equal. Interestingly, when asked to look ahead, survey respondents were more optimistic, with half expecting more benefits than problems in the future (Kriesky et al., 2013). Similar results emerged from a study by Theodori, Willits, and Luloff (2012) that found communities adapting to shale gas developments as the years progressed. In the gas fields of southern Queensland, whilst there has been a great deal of reportage on negative impacts, some studies are finding evidence that some members of the community are adapting. It is suspected that there are important differences in how people adapt across communities, with key differences felt between landholders and urban residents (Everingham et al., 2013; Lockie, Franettovich, Petkova-Timmer, Rolfe, & Ivanova, 2009).

A survey that made a direct comparison between attitudes to wind and gas developments in the same area found that over time, the establishment of wind farms improved public attitudes to wind power, whilst the inverse occurred for gas developments, with attitudes towards the use of natural gas energy becoming more negative as industrial developments progressed (Jacquet,
Social license for industrial developments in rural areas  

2012). Whilst some social impacts may be of a more psychological nature (e.g. Albrecht et al., 2007), some individuals or communities may experience economic or physical health impacts from industrial developments (McKenzie, Witter, Newman, & Adgate, 2012; Muehlenbachs, Spiller, & Timmins, 2014; Popkin, Duke, Borchers, & Ilvento, 2013). Research exploring public perceptions of new developments in a previous coal mining area in the United Kingdom, found that public opposition to a new coal gasification project was strong due to concerns around health impacts, such as those previously experienced from the coal industry (Shackley et al., 2006). Indirect experiences can also contribute to community positioning, where stories of industrial issues and failures from other places have been used to support community rationale for not supporting new projects (Shackley et al., 2006).

2.3.5 Knowledge and social positioning

Previous research has demonstrated that on a national scale, the general public may have little knowledge of contentious land-use issues in regional areas (Althaus, 2003; Klick & Smith, 2010). National polling in the United States that examined community knowledge of, and views on, unconventional gas development showed general public knowledge to be low in all cases. Despite this, several surveys found that more than half of Americans view the shale gas industry in a positive light (Boudet et al., 2014; PRCPP, 2012). A 2011 survey showed that 37% of Americans had no knowledge of shale gas development, with only 26% reporting to have heard a lot about the issue. Of those who had heard of it, 52% were in favour of it, whilst 35% were opposed (PRCPP, 2012), with other national polls reporting even lower knowledge levels (Boudet et al., 2014). A 2012 phone survey found that less than a third of respondents reported to have heard ‘some’ or ‘a lot’ of information about unconventional gas developments. The 42% who chose to either support or oppose developments were split almost equally, with 20% opposed, and 22% in support (Boudet et al., 2014).

While people may have relatively little knowledge of unconventional gas developments, research in the United States showed that this did little to affect their support of the industry (Evensen, 2015). A broader public knowledge of the topic has been apparent in other countries studied such as the United Kingdom, France, Poland and Australia (Aird, 2015; Sherriff, 2014; Uliasz-Misiak et al., 2014). Despite varied levels of public engagement on the topic, criticism has arisen in many communities around the world. Australian concerns have morphed into pockets of social action around the country. In Australia, public criticism began to grow from 2010 from a small number of farmers, activists, scientists and celebrity advocates, with a
steadily increasing level of media coverage leading to significant public discussion (Appelcamp, 2011; Kerr, 2011; Klan, 2011). In August 2011, an online Sky News poll indicated that 83% of the Australian public was opposed to CSG (SkyNews, 2011), and later State-wide surveys in NSW demonstrated that almost two thirds (62%) of 40,000 respondents supported a ban on the unconventional gas industry, regardless of age, education or political affiliation (Aird, 2015).

2.3.6 Information & language

Social representations theory (Moscovici, 1984) describes how social knowledge can be collectively shared and created by members of a society. Knowledge itself is never disinterested. C. Howarth (2006:77) describes that the construction of knowledge is an active process by social agents who “speak from different positions and who have different ‘social stakes’”. The words, imagery and framing chosen to communicate issues can have an important influence on views, and can play a key role in reinforcing opposing views (C. Howarth, 2006). Strong, clear narratives can be particularly effective. The language of objectivity and finality with which many industry and government narratives present the importance of investment, jobs, and economic growth is fundamental to the normalisation of neoliberal perspectives in decision-making (Rasch & Köhne, 2015). Health, wellbeing and local agency are left out of the discussion where possible, where the emphasis is instead placed on the “untapped opportunity” of externally funded projects (Mercer et al., 2014:286). Left out of such narratives, however, is the choice to focus purely on economics and the underpinning neoliberal values, thereby constraining debate between limited horizons (Tsing, 2000). Constraining debate in this way can impact people’s ability to act or react in different ways, or to view the world in other ways, with the normalisation of neoliberal views having the effect of silencing those who more greatly value non-economic factors in land use planning (Mercer et al., 2014).

In the Philippines, mining opportunities transformed the geographically isolated Palawan from the ‘last frontier’ into a ‘resource frontier’ (Peluso & Lund, 2011). The shadow of neoliberal narratives were echoed as it was criticised for its ‘backwardness’, prior to being transformed into a land of ‘economic opportunities’ for mining companies and migrants (Rasch & Köhne, 2015). In the case of the Peruvian Tambogrande mining project, key words such as ‘right;’ ‘risk;’ ’trust;’ and ‘equity’ carried far more weight for local people than the narratives of ‘economic growth’; ‘progress’; and ‘modernisation’, however this project was located in a
society with a history of corruption and authoritarianism (Rasch & Köhne, 2015). The mining company involved viewed local resistance as: “the result of a stigmatization of mining activities due to past mismanagement, lack of information, and manipulation by regional and international groups with political interests” (Muradian et al., 2003:786). Resistance narratives are often dominated by discourses on ‘rights’, and environmental-hazards, however technical and scientific counter-arguments can have the ability to challenge risk-narratives (Muradian et al., 2003).

A resistance movement may have many narratives, with some researchers finding that stronger narratives are those which paint a positive picture of residents, rather than focusing specifically on the negative attributes of industry (McManus & Connor, 2013). Underpinning community resistance in Australia’s Hunter region is a strong narrative around rural livelihoods, where farmers are stewards of the land with vital knowledge about local conditions, as wealth providers for the long-term, providing jobs and a way of life for generations of rural residents (McManus & Connor, 2013). This provides a strong contrast to the coal and gas industries, who, despite their own narrative of being providers of economic benefits and jobs, are seen by farming communities as temporary activities that create permanent environmental damage (McManus & Connor, 2013).

Figure 4: Google search term volume from 2004–2013 (100 represents peak search volume). The red line corresponds to the term “fracking”; dark blue to “Gasland” and pale blue to “shale gas”. Image source: Google Trends 2012.
Chapter Two: Literature Review

Conversely, the different use, misuse and interpretation of terms can lead messages to become confused. ‘Fracking’ is a more simplistic term that has been used by protesters around the world to create negative portrayals of the unconventional gas industry, and although this term has been picked up by many (Figure 4), its use has also caused some confusion, particularly as it represents only one process associated with the unconventional gas industry. Evensen, Jacquet, Clarke, and Stedman (2014) critique the use of the word ‘fracking’ by those on all sides of the debate, arguing that its use and misuse does little to bridge gaps of understanding or polarised community positioning. Futrell (2003:365) describes an “information haze” that can surround land-use conflicts due to “conflicting, contradictory, multiparty, multidirectional communications that fail to clarify the risks”. In a situation where community members are seeking to rationalise their concerns by ‘weighing up the risks’ or carrying out their own cost-benefit analysis, Slovic (1999) warns that the very nature of risk-assessment is complex, where socio-political factors combine with the limitations of science and human perception.

The type of media used in forming a position on industrial developments has been found to be significant in previous studies, where local press is more likely to be responsive to community views (Shackley et al., 2006). A Control Risks (2012) study of internet searches related to unconventional gas found that there was a significant jump in the use of the term ‘Fracking’ following the release of the anti-shale gas documentary Gasland, indicating that the film may have played an important role in bringing people’s attention to the issue (Figure 4). Americans who use television as a primary information source were more likely to support industrial developments, whilst regular newspaper readers were more likely to oppose developments in the context of the shale gas industry (Boudet et al., 2014). Polarisation of information can occur both within communities (Mackie, 1986), and in wider society through the media (Jaspal & Nerlich, 2014). Social polarisation can occur when different groups of people are focused on a certain set of facts. It is possible to read an entirely different set of information from the same situation depending upon your own perspective, or the way in which you choose to analyse the data (Stretton, 2006).

Public information sources have portrayed the debate in contrasting ways, with both sides focusing heavily on various risks and threats involved (Jaspal & Nerlich, 2014). Critical media portray the gas industry as ‘choking’ green energy, highlighting unease and fears surrounding industry processes and developments. The Australian Fairfax Media focuses upon constructions of the unconventional gas industry as an environmental and public health risk.
Social license for industrial developments in rural areas

(e.g. Duddy, 2011), whilst the Murdock Press in Australia and the United Kingdom continues to portray positive constructions of the unconventional gas industry as safe, and providing a long-term source of clean, green energy (Kriesky et al., 2013). Such media framing normalises the industry and technologies involved whilst criticising the anti-gas stance as creating a risk to future supply (e.g Tasker, 2015).

The role of science in unconventional gas controversies presents a particular set of challenges for scientists, and for science communicators (Molinatti & Simonneau, 2015). In a scientific world where an ever-increasing emphasis is placed on gaining industry funding, there is a danger that science itself can become subject to neoliberal pressures. Social interest in unconventional gas development has prompted an unusual opportunity for scientists to engage with the public, with interactions between researchers and community groups constituting “one of the strongest trends in scientific mediation” (Molinatti & Simonneau, 2015:105). Researchers need to take their own value-systems and inherent bias into account, from question definition to interpretation and communication of research. To be effective communicators, they are presented not only with the knowledge limitations of the public, but also by their value systems and their ability to understand the limitations of science.

It is not surprising then, that the scientific literature presents conflicting reviews (e.g. Howarth, Ingraffea, & Engelder, 2011), with simple technological solutions presented alongside extreme caution in regards to the hydraulic fracturing process. In the United States and in Australia the economic benefits have been widely reported (e.g Lawrence-Consulting, 2012) and communities are expected to weigh up the costs and benefits. In Queensland, the Government presented reports to reassure the public that health impacts were minimal (e.g Queensland-Government, 2013), while doctors compiled reports that directly conflict with the government report (e.g DEA, 2013), so who is the public to believe? Alternatively, whilst the narrative of industry and government consistently labels the unconventional gas industry as safe, cases of pollution of both surface water and aquifers have been reported and studied (Hamann & Kapelus, 2004; Sutherland et al., 2011). It is likely that these confused messages are contributing to knowledge polarisation on a community level that could have an important influence on social positioning on social license, and the related social dynamics (Futrell, 2003). It is important to note, however, that scientific knowledge, although a factor, is only one aspect of view forming, while worldview and different value systems are also critical factors.
Some researchers refer to science as a mere tool, or weapon used in a larger fight about values, interests and power (Muradian et al., 2003; Otway, 1992).

### 2.3.7 Worldview and ideology

Several surveys that took place in the United States found that right-wing ideology was one of the most important drivers for support of industrial developments such as oil and gas, as was an ‘egalitarian’ world view a primary driver of non-support (Boudet et al., 2014; PRCPP, 2012). This was the case when compared against other factors including geographical location, gender, and socio-economics; however, trust as an influencing factor was not included in this research. Worldview and ideology, whilst providing interesting insights have a danger to sometimes become confused, because while left-wing and right-wing ideologies have been found to provide a neat ideological contrast in many cases, different studies have found that different aspects of the value-systems embedded in these ideologies can be triggered by industrialising processes. To provide an example, those with right wing ideologies strongly value family structures and tend not to favour change, whilst those who favour left-wing ideologies tend to view the world from a broader, more compassionate perspective. Industrial developments can directly affect both of these values, and shared values have been found to be a greater unifying force for those who choose to participate in social action (Colvin et al., 2015).

### 2.3.8 Values

Social positioning on industrial developments is often informed by values that relate to existing material conditions and livelihood opportunities, and can also driven by how people view the environment and concepts of sustainability (Muradian et al., 2003; Rasch & Köhne, 2015). Perceived risks and benefits of planned energy developments have been found to be a key driver of community positioning on industrial projects. The information people may consider regarding risks and benefits may, however, itself arise from moral, ethical and social considerations that relate to their value systems. The moral outrage that arises from exposure to risks caused by activities that will benefit others can have an important influence on perceptions of risk, and can account for systematic differences in risk-perception between local residents, industry and decision-makers (Percival, 1992). Muradian et al. (2003:788) view the case of the Tambogrande land-use conflict as a “value-system contest” over not only land-use but also what a “legitimate” decision-making process consists of.
Values shape the way new information is processed and drive the self-selection of new knowledge (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Existing value-systems can affect the information that we seek out, how we interpret it, and what information we avoid (Hansla, Gamble, Julisson, & Gärling, 2008). A common thread for communities that are socially organizing to resist developments, are concerns around the long-term sustainability of their region and livelihoods being impacted by developments (Lee et al., 2014; Muradian et al., 2003; Prno, 2013; Rasch & Köhne, 2015). Another important influence can be sociocultural values such as fairness, trust, attachment to community, and self-determination. In land-use conflicts, environmental issues can be just one influencing factor within what is essentially a civil rights movement (Muradian et al., 2003).

Several ‘top of mind’ techniques for exploring influences of social positioning on shale gas developments found environmental concerns to be one of the top predictors of non-support, however this was closely combined with other factors such as ideology and an egalitarian worldview (Boudet et al., 2014). The role of affective messages and imagery in forming community position on contentious issues has been defined as “the specific quality of ‘goodness’ or ‘badness’ experienced as a feeling state (with or without conscious awareness) or the positive or negative quality of a stimulus.” (Leiserowitz, 2006:1436). This helps to direct fundamental cognitive processes such as information processing, attention and memory by orienting people to particular risks or benefits (Slovic, MacGregor, & Peters, 1998).

Conversely, the values that residents place on the natural environment have been found to be the most important driver of negative attitudes towards extractive industry developments, a far more consistent predictor than proximity (Jacquet, 2012; Michaud, Carlisle, & Smith, 2008). Despite these findings, Jacquet (2012) warns that research findings also indicate that property owners who sign contracts with industry may have a fundamentally different view of the role of the natural environment in resource exploitation. Those who have stronger environmental values and/or existing negative perceptions of the gas industry are less likely to sign contracts with the drilling company in the first place. They do not identify with the aims of the project, and as a result are less likely to work with industry, nor build a relationship with industry representatives.

Community members are also able to engage with the broader energy debate, and with reducing emissions to combat climate change of prominence in the media, and accepted by a large proportion of the community (e.g. Aird, 2015). Therefore an assessment of how proposed
developments fulfil the objectives of a low-carbon energy supply are likely to have an influence on community rationale for accepting or rejecting energy developments (Jacquet, 2012; Kriesky et al., 2013; Shackley et al., 2006). Whilst some community concerns may be addressed by improved research and technical solutions (such as those outlined by Jenner and Lamadrid (2013), this may not be possible due to the presence of conflicting value systems (Muradian et al., 2003).

2.3.9 Sense of place

The values placed upon landscapes, especially spiritual and wilderness values are significant predictors of attachment to place, with greater value attributed to specific areas over others (Brown & Raymond, 2007; Kyle, Mowen, & Tarrant, 2004). Greater value for sense of place has been assigned to places with greater aesthetic and recreational qualities, and to a lesser extent, economic and therapeutic values (Brown & Raymond, 2007). The sense and attachment to places relating to spiritual values has been especially well described in literature relating to indigenous peoples. Others have found that strong place identity and attachment were consistent predictors of the occurrence of land-use conflicts (Kyle, Graefe, Manning, & Bacon, 2004).

Place attachment, notions of landscape and local identity play a prominent role in resistance to proposed industrial developments (Boholm & Löfstedt, 2004). Psychological impacts of industrial developments can be very real for rural residents, with what Albrecht et al. (2007) call ‘solastalgia’ occurring where negative environmental situations, connected with a sense of powerlessness or hopelessness, impact on people’s mental health. This can involve “a loss of identity, loss of an endemic sense of place and a decline in well-being” (Albrecht, 2010:217). This phenomena has been found to have serious consequences for those experiencing stress or concerns over potential or actual developments (Albrecht et al., 2007). The implications of ‘solastalgia’ have also been linked to a human need for connectivity and sense of belonging with the natural world. This connection is strong in indigenous cultures, where human health is intrinsically linked with the natural environment (Taylor, 2008). Much less emphasis is placed on the importance of this connection in contemporary society, and how it should, or could, influence decision-making for the management of natural resources (Albrecht, 2010; Ruckstuhl et al., 2014; Taylor, 2008).

McManus and Connor (2013) view that the growth of the coal industry, combined with urban expansion, has impacted so heavily on sense of place in the Hunter region of Australia that
some boutique rural industries are simply moving out. As the coal and coal seam gas industries expand further into fertile growing regions, they warn that this may have serious implications, not only on people’s sense of place and way of life, but also upon Australia’s ability to produce its own food (McManus & Connor, 2013).

### 2.3.10 Engagement processes and procedural fairness

Legitimisation is a precondition for social stability (Muradian et al., 2003). When a decision is made through a process that is viewed as legitimate, people are able to accept it, even if they do not necessarily agree with the outcome. Therefore, the legitimisation of decisions hinge on social agreement regarding rules relating to the process by which the decision was made. If the process is deemed to be unjust, then there is a strong basis for community resistance (Martinez-Alier, 2001). The first experience communities have with industry is likely to be directly affected by the consultation approach used by industry and government. While citizen participation has been recognised as key to sustainable development (Arnstein, 1969; IIED, 2002), politicians, public professionals and industry leaders have been criticised for working within an ‘iron triangle’ that often excludes the citizen (Hindmarsh, 2010; Mullard & Spicker, 1998; Perhac, 1998).

Figure 5: Arnstein’s ladder shows levels of community engagement in the consultative process, with each rung representing a degree of citizen power in influencing planning and policies. The levels range from ‘manipulation’, (speaks for itself) up to ‘citizen control’, where participants are able to establish a decision-making partnership with policymakers, having the power to influence and control outcomes. Arnstein considered manipulation and therapy to be a public-relations exercise. She views the tokenism of informing, consulting and placating to be commonly used by planning authorities for fulfilling their consultative responsibilities whilst maintaining the dominant power structure (Arnstein 1969; Lloyd, 2005). Levels of community involvement in decision-making and land management can influence levels of social license directly, and if procedural fairness is not apparent, this can contribute to social license withdrawal (Martinez & Franks, 2014).
Perceptions of procedural justice can have a strong influence on community decisions to protest industrial developments (Lee et al., 2014; Paragreen & Woodley, 2013; Rasch & Kühne, 2015; Urkidi, 2011). Bowen, Newenham-Kahindi, and Herremans (2010) build upon the concept of Arnstein’s ‘continuum of community engagement’ to categorise three main engagement approaches, being: transactional, transitional and transformational. Transactional approaches characterised by ‘arms-length’ ways of providing information, would take you about a third of the way up Arnstein’s ladder. Transitional engagement is characterised by ‘interactive approaches’ that seek to be more accountable and reactive to community concerns, involving a more participative, two-way approach. Transformational engagement approaches seek to integrate community views into decision-making, characterised by the formation of multidirectional alliances and partnerships with the associated communities. An ultimate aim is that communities become better empowered and collaborative with the institution that seeks their approval (Bowen et al., 2010). An analysis of the application of these strategies in different cases revealed that payoffs from the highest level of transformational engagement can secure longer-term enhanced legitimacy over immediate cost–benefit improvements, which could then be very important for the long-term maintenance of social license to operate (Bowen et al., 2010).

Developing adequate stakeholder engagement process is a primary focus of the social license literature (Dare et al., 2014; Williams & Walton, 2013), which views good public process as key to the minimisation of social risks. More critical literature, however, accuses some industry bodies as deliberately avoiding public engagement so as not to ‘stir the pot’ (Owen & Kemp, 2013).

2.3.11 Trust and risk perception

Trust is a reoccurring theme in the literature regarding social responses to siting for industrial developments (Boholm & Löffstedt, 2004; Shackley et al., 2006). Trustworthiness, transparency and procedural fairness have been found to be important drivers of community acceptance of industrial projects (Chung, Kim, & Rho; Harvey & Bice, 2014; Muradian et al., 2003; Parsons & Moffat, 2014), with distrust an important influence on community intolerance of projects. Such relational dimensions of impact assessment and social licence have been found in some cases to be more important than perceived impacts, with increased distrust correlating with increased perceptions of negative impacts (Martinez & Franks, 2014; Parsons & Moffat, 2014).
Social license for industrial developments in rural areas

Studies within and without the social licence sphere have found relationship building to have a very important influence on positive associations and therefore support of industry (Parsons & Moffat, 2014; Robinson et al., 2013; Uslaner & Brown, 2005). This has also been found to be true in the context of community engagement in voluntary social organisations (Uslaner & Brown, 2005). Muradian et al. (2003) found that trust plays an especially important role in the context of high uncertainty, with distrust high where sufficient knowledge is not available to make lay judgements. Residents are then forced to weigh up potential risks and benefits based on their own assessment, or level of trust towards industry representatives (Siegrist & Cvetkovich, 2000). Therefore in this decision-making context, social relationships between industry and community play a larger role in community social license for a company to operate.

Community participation in site planning and liaison is also viewed as a positive indicator of support and seen to increase trust levels (Shackley et al., 2006), however low levels of trust can hinder community engagement processes (Dare et al., 2014). People use knowledge about themselves to form beliefs about what they can expect from other people, hence a trustworthy person will expect others to be the same (Orbell & Dawes, 1991). Strong links have been found between interpersonal trust and participation in democratic or governance processes, while the interactions that arise from involvement in voluntary organisations has been found to increase trust for organisation members more broadly (Uslaner & Brown, 2005). When compared directly, trust has a greater effect on communal participation than on political participation per se (e.g. Shackley et al., 2006), however other studies show that communal participation can be a precursor to increasingly politicalised social actions (Dono, Webb, & Richardson, 2010). One study found that joining an association increased generalised trust for the organisation and its members in the first year, however over longer periods of time a decrease in general trust levels occurred (Stolle, 1998).

Institutional failures have been found to have the opposite effect, where negative experiences or stories drawn from elsewhere can create distrust of a whole industry (Dare et al., 2014; Sullivan, 1999), and community trust can be very difficult to regain (Paragreen & Woodley, 2013). Trust levels are strongly influenced by public perceptions of procedural justice, relating directly to company processes and employee conduct. Public perceptions of procedural justice can be strongly influenced by existing power imbalances between industry and community (Paragreen & Woodley, 2013).
2.3.12 Identity

As socially distinct groups form alliances such as Lock the Gate, Australia’s largest social action network group opposing coal and gas developments, then new, shared identities can form (Colvin et al., 2015). There is evidence that the resistance movement against the threat of the coal seam gas industry has helped to shape a stronger regional identity in the Hunter Valley wine region, evidenced in the way that regional growing regions have now included the Hunter in their names, when this may have been uncommon previously (McManus & Connor, 2013). In parts of Queensland experiencing coal seam gas developments, there has been evidence that social positioning on the topic has been a divisive force for communities that experience uneven benefits, risks and consequences (de Rijke, 2013; Kemp, Owen, Gotzmann, & Bond, 2011).

Whilst place identity plays an important role in how people form their perceptions of developments (Boholm & Löfstedt, 2004), individual and social identity can play a role in the formation of alliances, and in the decisions to improve or avoid associations (Tajfel, 1974; de Rijke, 2013; Mercer et al., 2014). This can create important social dynamics as individuals come together to form groups (or choose not to), and to some extent will define themselves through group membership (Tajfel, 1974). Chapter Five will discuss in greater detail the effects of social identity on how groups and alliances form, or do not form.

While these factors play a role in the social dynamics influencing the effectiveness of social action, values shared between those with distinct identities have been found to be indistinguishable (Colvin et al., 2015). As Colvin et al. (2015) examined the value-systems of Lock the Gate members, they found social interactions to be increasing in complexity as people with distinct identities (i.e. farmers and activists) built relationships through their engagement with unresolved landuse conflicts. Whilst the survey measured liberalism and conservatism in Lock the Gate members, respondents were spread between the two, with a slight lean towards conservatism, indicating that political ideology was not as important as shared values of ‘self-transcendence’, however there were very few individualistic members. Common ground between actors was a propensity to prioritise general wellbeing and common good above personal gains, hence caring more broadly for people and the environment and seeing the value of protecting them (Colvin et al., 2015). Stereotyping processes, however, can sometimes prevent opportunities for discussing the potential for common ground (Lloyd, Luke, & Boyd,
2013). These findings urge caution when defining stakeholder groups based on predetermined roles and positions in society.

### 2.4 Social Resistance

Rising socio-political instability, manifesting in the form of protests, sanctions, and dramatic changes in regulatory regimes, can be driven by a range of influences. Boutilier, Black, and Thomson (2012) outline five key factors influencing community resistance:

1. In the developing world, indigenous populations are questioning the authority of permits granted, with the ultimate example being the nationalisation of mines in Bolivia.

2. The developed world is experiencing increased developmental opportunities/pressures from extractive industries. This is especially apparent in the unconventional oil and gas sector as new technologies make extraction possible on new frontiers.

3. Petroleum exploration licenses cover a multitude of different existing land uses including agriculture, tourism, national parks, urban areas and indigenous lands. Companies need to compete with these already established industries, not only for land, but in terms of providing employment opportunities and even rejuvenated communities, alongside a reduced tolerance for social and environmental costs.

4. Whilst local impacts rise, local benefits diminish.

5. Socio-political organisation has become more common and more efficient due to a range of factors, including the increased connectivity provided by the internet (Boutilier et al., 2012).

#### 2.4.1 Social movements

Social action is one segment of a wider, complex set of relationships between people and institutions, argued to be a symptom of resistance to the social domination of neoliberal ideologies (Martinez-Alier, 2001; Mercer et al., 2014). What most social movements have in common is that they challenge existing legislative frameworks and/or governance structures that allow perceived injustices to take place. In order to advance society along the path of human development and evolution, whilst achieving wide-spread public support, a social movement must engage universal values such as justice, equality, civil and human rights, security and freedom (Moyer, 2001). Social action fundamentally involves groups of people with varying degrees of organisation and clarity of purpose, who are either opposing or
supporting a particular social or environmental issue, but the key theme is change through collective action. Moyer (2001:3) describes social movements as:

“Collective actions in which the populace is alerted, educated, and mobilized, sometimes over years and decades to challenge the power-holders and the whole society to redress social problems or grievances and restore critical social values”.

Such definitions place engaged citizens at the core of the democratic process within what is essentially a struggle for power. The concept of participatory democracy raises the expectation that people can and should be included in decision-making processes in all aspects of public life (McIntyre-Mills, 2010). This provides a role for all those who wish to participate in the process of turning festering social and environmental issues into a citizen demand for change. The nature of social movements and the diverse selection of people involved has a tendency to develop not only more democratic solutions, but also solutions that are more creative and appropriate for society as a whole (Moyer, 2001). Social movements can become an enormous opportunity for social learning. Existing social capital in a region has been found to aid processes of social learning, where social capital consists of relationships within, and extent of networks, skills, education levels and trust between social groups (Rydin & Pennington, 2000).

Resistance movements that form in response to land-use planning decisions challenge top-down or corrupt government approval processes to reclaim the community as a legitimate scale for decision-making (Urkidi, 2011). From a community perspective, this makes sense since this is where the majority of impacts, and potentially, benefits will be felt (Boutilier, 2014). Martinez-Alier (2001) views the numerous land-use conflicts occurring between local communities, industry and governments, to all form part of a worldwide environmental justice movement that started many years ago. Whilst the eco-political trajectory launched from the environmental movements of the 1970s and early 1980s lost momentum for a time, there was a directionless period as environmentalism strived to find a new path forward (Cohen 2006). The international growth of a social movement against the energy industry appears to be re-fuelling the momentum of the global environmental justice movement (Control Risks, 2012).

The exploration and extraction of unconventional gas and oil, as well as palm oil production is creating social unrest and leading to resistance movements of varying descriptions all around the world (Control-Risks, 2012; Klein, 2014). Some authors view that an unwritten contract, that distant lands will be sacrificed in order to meet our energy demands, was broken. This
occurred when energy industries sought to develop alongside some of the world’s richest populations in the United States; Canada; the French Riviera; the Netherlands; the United Kingdom and Australia (Bocora, 2012; Control-Risks, 2012; Eaton, 2013; Petroff, 2013; Uliasz-Misiak et al., 2014).

Community organisation to resist industrial developments has been shown to be effective - to varying degrees - at slowing down or halting developments in some cases (Thomas & Louis, 2014). Policy change has been shown to be much more likely if resistance movements are able to impact upon and shape broader public opinion (Burstein, 2003; Louis, 2009). Klandermans and Oegema (1987) describe ‘sympathisers’ as members of the broader public who may share views with activists and are part of the mobilisation potential of a social movement. If sympathisers can then be mobilised to the extent that they endorse future collective action, this is likely to be a defining factor for successful public mobilisation. Collective actions have been found to be most effective where a bystander sense of psychological connection or identification with the social movement is achieved (Louis, 2009).

Before any of this can occur people need to organise, which in itself is a complex process, as concerned yet often diverse individuals attempt to form groups and networks large enough and effective enough to drive change. Klandermans and Oegema (1987) refer to the people in a society that could be mobilised by a resistance movement to participate in social actions as ‘mobilisation potential’. This may not always relate directly to those who will benefit directly from the aims of the social movement, however they could potentially become included. In order to mobilise these people, social movement actors need to target the right people, motivate them to participate, and overcome barriers to participation (Klandermans & Oegema, 1987). Anguelovski (2015) views the growing of ‘bottom to bottom’ networks via community-level relationship building as a powerful strategy for engaging a societies’ mobilisation potential.

### 2.5 Strategy and structure of social movements

Community resistance to large-scale natural resource extraction have been conceptualised in three main ways:

- A ‘counter-movement’ refers to openly declared resistance (S. Turner & Caouette, 2009)
• ‘Infrapolitics’ is comprised of types of everyday forms of resistance that may cause hindrance to projects, but, however, avoids open declarations of resistance (Scott, 1990)

• ‘Counter-hegemony’ refers to the extreme case of those who have the aim of seizing control of the state (Chin & Mittelman, 1997)

While explorations of counter-movements to industrial developments are not uncommon in the broader literature, analyses often focus on their structural and broad characteristics (Urkidi, 2011). Other studies focus on the interactions and local politics of rural residents facing industrial developments. Turner and Caouette (2009) argue that how people define their own field of protest is as important as the specific nature of the industry involved. Rasch and Köhne (2015) argue that it is frequently not possible to clearly distinguish between the three types of resistance that relate closely to each other and with the micropolitics of the region affected. Globalised neoliberal and resistance narratives are enacted by communities, and interact with each other on the local level, referred to as ‘micropolitics in resistance’ (Rasch & Köhne, 2015). This lens is particularly useful for describing the complexity of local interactions occurring between multiple actors, compared to Moyer’s Movement Action Plan (MAP) model, which provides a structural framework to describe processes occurring within the social movement over time.

The existence of already established networks for communicating new knowledge, inspiring action and training social activists, can be key to the growth of a social movement (Freeman, 1975). Formal, hierarchical organisations have achieved great effectiveness, offering economies, unity and compliance, however, deficiencies of this structure can lead to a waste of human potential for innovation and creativity at a significant psychological cost to the members (Meadows, 2010). Current attitudes to organisational structure emphasise that no formal system is good enough to handle all of the necessary interdependencies, therefore increasingly encourage informal networks because they are able to be more effective and also resilient to change (Meadows, 2010).

Successful social action campaigns need to have unified concerns, ideas and aims whilst sharing a presumption of social ‘legitimacy’. Strategic thinking of social action groups depends upon their confidence in their ability to demonstrate the higher universal morality of their cause over that of their opponents. Many case studies show that the effectiveness of an oppositional campaign may ultimately depend on some sort of trade off or compromise on the part of both
oppositional parties, for example the successful opposition to the deforesting of a NSW rainforest had to eventually be accompanied with compensation packages for the timber industry (Baldry & Vinson, 1991).

Historical social movements in Australia have encompassed a wide variety of issues such as promoting the rights of Aboriginals, workers, women, children and animals; halting damage to the environment; and international issues such as trade and peace (Baldry & Vinson, 1991). Most are based on a single issue specific to that cause, however a review of Australia’s current and past social movements reveals common themes that underpin social movements such as conservation, equality, social solidarity and participatory democracy (Baldry & Vinson, 1991). Common trends of triggers for social action are industry benefitting from the exploitation of an environment or a section of society. Environmental issues are typically more complex and interwoven with social and economic issues. Although most are oppositional in nature, most campaigns take on a far wider strategy that goes beyond a merely confrontational approach and encompass legal, political, and educational aspects (Shields, 2000).

A meta-analysis of Australian social movements shows that well-coordinated, peaceful campaigns that place a strong emphasis on the provision of alternative options achieve wider public support than those that use smear campaigns and exaggerated facts (Baldry & Vinson, 1991). This suggests that campaigns that do not alienate themselves from sectors of society and are able to increase community cohesion are more likely to be able to bring about ongoing change and positive knock-on effects (Baldry & Vinson, 1991; Bible, 2007; Colvin et al., 2015; Shields, 2000).

2.5.1 The evolution of a social movement

Moyer (2001) categorises social movements into the following eight stages;

1. **Normal times:** However a critical social problem exists of which the public is largely unaware

2. **Prove the institutional failure:** Many local groups form & carry out extensive research

3. **Ripening Conditions:** As local groups become more active and recognition of the problem grows

4. **Take off:** Following a trigger event as the problem is put on the social agenda and non-violent actions are repeated across the nation
5. **Perception of failure**: As change does not come as fast as hoped or expected, activists may burnout and the negative rebel may emerge

6. **Majority public opinion**: Mainstream citizens and institutions are addressing the problem as it is put on the political agenda, and alternatives are promoted whilst activists and alternatives are demonised by power-holders

7. **Success**: Power-holders change policies and political reform takes place

8. **Continuing the struggle**: A paradigm shift is promoted, the focus moves to sub-issues

### 2.5.2 Overcoming barriers to effective social action

There are many benefits to forming cooperative groups that can build strong movements for change. This can increase the potential sphere of influence by encouraging the sharing of resources, combined strategy and fundraising, fostering a strong feeling of community. However barriers to social movements can come from many angles, from outside and from within. Shields (2000) describes the importance of the hierarchy of denial (Figure 6) in reaching out to the community, the basis for it being that you cannot convince someone to consider an issue if they do not know about it, nor can you convince someone to act unless they see a possibility of change, and so on. Shields (2000) hierarchy of denial presents just one of many barriers that those attempting to grow a social movement must overcome in order to successfully mobilise a population.
Political support or non-support for the aims of a social movement is likely to vary depending on governmental level (Klandermans & Oegema, 1987). Some politicians may be sympathetic to the aims of the movement, whilst others may be supportive of proposed developments. Typically in environmental movements, it is the local government who will first become sympathetic, with national governments changing policy only when they can see that sympathy for the cause is widespread in the general public (Martinez-Alier, 2001). Opposition to a social movement will come from several areas including the industry and/or government that is being challenged, with a common line of criticism being that protesters are over-emotional and misinformed (Shields, 2000). One of the greatest challenges, however, comes from the social dynamics of the protesters themselves. There is a myriad of issues to contend with, from individual burnout to group conflict (Baldry & Vinson, 1991).

### 2.5.3 The individual

Social movements typically attract a range of individuals with different personalities, many with high levels of commitment to the cause (Baldry & Vinson, 1991; Shields, 2000). Participants in a social movement are likely to come from diverse backgrounds, and will behave in a variety of ways, bringing with them a different combination of values, skills, knowledge and social connections (Shields, 2000). Environmental movements are commonly composed of the following broad groups: local residents which may consists of farmers, landholders and owners of existing businesses; the company involved; activists; indigenous groups; religious groups and representatives of the broader industry in question (Colvin et al., 2015; Moyer, 2001; Urkidi, 2011).

Structural individualists such as Adam Smith (1976) depict the individual as predominantly motivated by their own self-interest without much sense of a larger plan. Individuals are seen as heavily influenced and homogenised by the socialisation processes of their socio-economic and cultural background, with similar patterns of experience, resources and opportunities leading to similar patterns of behaviour (Noble, 2000). We are all the product of our upbringing, guided by norms and values learned from our social interactions, in ever widening circles, from the family and educational system to the social interactions we choose in our private and professional lives. We seek approval and learn which behaviours are likely to attract
praise, criticism or opposition. Weber’s (1967) theory of methodological individualism provides a contrasting perspective to this somewhat simplistic and abstract overview.

Weber saw the study of society as intrinsically more complex than that of natural systems due to the meaning associated with the continual interactions that happen between people. He seeks understanding of social interactions on the individual level and not within the general operation of an ‘abstract collectivity’. He describes rational actions as those that fall within the category of everyday and expected behaviour driven by a specific purpose or values from a moral, political or religious framework, being ‘the right thing to do’. He distinguishes non-rational from rational actions as “those without conscious purpose which are commonly impulsive and emotionally driven by a person’s feelings” (Weber, 1967).

### 2.5.4 Negative roles & social feedback

When making a commitment to sustained social action, participants need to separate personal motivations (such as a general dislike for authority) and psychological issues from the conscious purpose of the cause. Negative experiences in childhood may project unconscious motives into current situations and have a serious impact on group interactions (Jung, 1966). Suppressed feelings can cause reactions that are out of proportion with the situation which can be particularly prevalent when conflict arises, whether it occurs within the group or with individuals from the industry related to the cause (Shields, 2000). Carl Jung (1959) saw human motivations in social settings as often resulting from the relationship between the conscious ‘ego’ and the subconscious ‘shadow’ of an individual. Where a person feels that they are not being heard, a vicious circle can occur where a vague defeat can result in defensive and self-righteous behaviour that increases a feeling of inferiority, leading to egocentric behaviour such as hyper-narcissism and even megalomania (Yung, 1966). In group situations underlying feelings of powerlessness can turn into competitive behaviour and an attitude of opposition can become a habit that can be turned against individuals with differing ideologies. The polarization of groups can become a feedback cycle of alienation and separation (Jung, 1959; Sheriff, 1966).

Moyer (2001) outlines four crucial roles in a social movement as the citizen, the rebel, the change agent and the reformer. The ‘rebel’’s role is to gain media and public attention through non-violent actions, dramatically highlighting issues the movement seeks to address. They also seek to demonstrate how institutions, related to the issue at hand, may violate public trust and contribute to the problem. The ‘change agent’ is often a mostly ‘behind the scenes’ organiser
who supports the growth of groups, strengthening associations and networks. They build the movement by promoting human values and democratic principles, and a paradigm shift in related policy and/or governing/power structures. The ‘reformers’ role is to present the ideas of the movement to authorities, working to create and expand new policies and legislation. They also monitor the effectiveness of legislative processes and change. The citizen is of the utmost importance to the public image of a social movement, as they need to demonstrate that ‘ordinary people’ support the aims of the resistance movement. The involvement of citizens with a well-accepted identity can make it harder for power holders to discredit the movement. A citizen may also moderate the movement, reducing the possibility of extreme attitudes and actions (Moyer, 2001). In order to be effective, a social movement needs all of these roles to be filled, and some will be of greater importance at different phases of a social movement. For example, a rebel is needed to bring initial attentions to an issue; a change agent needs to bring people together; a citizen is important for normalising the aims of the movement; and ultimately, a reformer is important for translating the aims of the social movement into policy.

These roles can, however, have negative consequences if not played effectively. For example, a reformer who may be effective in the process of lobbying or legislative change may be counter-productive if they become too focused on organisational structure or display a dominant leadership style that disempowers grassroots cooperation. Equally a change agent may become ineffective if their utopian vision is too isolated from what is possible in the realm of practical and social action, or focused only on their own back yard (the NIMBY mentality). A citizen is viewed as ineffective when they are unable to separate themselves from the belief that the actions of power-holders are always made for the common good. In particular, the rebel role is essential for questioning existing conditions and promoting an alternative viewpoint from dominant ideologies, however if the rebel exhibits angry, egocentric or excessive behaviours this can significantly impact group processes and turn the tide of public opinion away from the key focus of the social movement. The year of a movement’s ‘take off’ stage is often when there will be a higher number of such individuals who seek to use the heightened media attention and popularity to promote themselves, their own ideology and/or organisation. When frustrated by the pace of change, they may also be prone to militant or violent behaviour, increasing social polarisation by reducing legitimacy and alienating any groups that they may be associated with from the public.
Whilst a social movement is composed of individual actors, many of whom play an important role in some cases, the focus of this thesis will rest mostly on social dynamics that occur within and between different groups in order to form an effective social movement.

2.5.5 Group formation

For the sake of our individual sense of identity, we seek distinctiveness from others whilst seeking acceptance by fitting in to a social group (Tajfel, 1974). By aggregating together people can pool knowledge and ideas on a common purpose, share the workload and more people working together allows for the specialisation of tasks for people to focus on where their strengths lie. Groups of people are able to support each other and maintain momentum on a task where one person may not. Groups are also susceptible to oversampling the same information and overlooking or discrediting new ideas. A group may be a homogenous collection of members with clear boundaries; or have much wider ranging personalities and blurred boundaries, social movements far more typically consist of groups of the latter description (Shields, 2000). A group becomes a team when ‘a group of people with differing skills work together towards a common project, service or goal with a meshing together of their functions and with mutual support’ (Wheelan, 2005). Sheriff (1966) determined the key factors in inter and intra-group relations as the cooperative relationship between group members and the alignment of group goals. In-group’s goals and objectives will lead directly to intergroup attitudes and behaviour.

For residents, previous connections with activist groups and/or civic actions are an important driver of future decisions to involve themselves in community protest action (Dono et al., 2010). Numerous studies have shown that social and norms and values arising from group processes and networks are important for pro-environmental behaviour (Dono et al., 2010; Meadows, 2010; Stern et al., 1999). Involvement in such groups is also consistent with a propensity for a focus of care for the wider community and environment, consistent with the findings of Colvin et al. (2015) regarding Lock the Gate membership.

When groups are setting high goals and working synergistically to achieve them, there is an enormous level of satisfaction gained and this can become a positive feedback cycle as they feel sufficiently challenged, empowered and confident to set yet higher, if more risky goals. This is called the ‘zone of inspiration’ by Buchholz & Roth (1987). The key to producing a synergistic group relationship, is achieving the full commitment of individuals through
consensus on decision making, meaning that they are all focused on working towards one agreed direction, or purpose (Senge et al., 2000).

### 2.5.6 Group socialisation and social ‘norms’

You are shaped by the group and the group is in turn shaped by you. Once you assimilate and become fully committed you are able to negotiate your role within the group (Tajfel, 1974). If members do not assimilate as they would wish, or do not feel their contribution is valued, then they are likely to disassociate from the group. Every group has particular patterns of behaviour that are considered to be ‘normal’ or norms (Tajfel, 1974). These group norms can be explicit or implicit. Some group members may police those norms and some group members such as leaders may be allowed to diverge further from the group norms than others. Norms can serve group members by giving them guidance as to their acceptable range of behaviours, and potentially can affect individuals long after they are no longer part of that group (Moreland & Levine, 2001). Mutually exclusive goals within a group are likely to create divides that can lead to the failing and or division of the group if they fail to be resolved. If this is at an intergroup level, conflict is likely to occur between groups (Sheriff, 1966).

Social stratification is associated with gradients of perceived status differences that create social-psychological pressures for social change. Three types of interactions are defined by Tajfel & Turner (1979) for maintaining group status. Social competition is where groups may compete directly; social creativity is where a group seeks to redefine perceived elements of group status; and individual mobility is where an individual may change groups to seek higher status. These phenomena occur in small-scale groups but are thought to reflect wider social trends in society. This is one reason why group cohesiin is so essential for maintaining group identity. It is also possible for a dark side of group dynamics to manifest in a variety of ways such as hidden agendas; collusion and conspiracies of silence; victimisation; self-interest; and corruption. Drivers of such dynamics can be largely unconscious, with motives such as uncertainty and anxiety caused by a whole range of reasons from fears of rejection; lack of skills and knowledge and/or the need for recognition. Our existential sense of insecurity can drive us to anxiety amongst the purposeful activities associated with work and life (Hase, Davies, & Dick, 1999).
2.5.7 Group dynamics

Social identity theory has been found to play an important role in social movements (Opotow & Brook, 2003). Social identity theory argues that individuals define themselves largely according to their group involvement and memberships (Tajfel, 1974). It explains the levels of social analysis along an interpersonal to intergroup continuum, creating an important bridge between the concept of self, group membership and intergroup behaviour (Spears, 2011). Achieving a positive distinction between your own and another group leads to inter-group behaviours where any perception, cognition or behaviour is influenced by people’s recognition that they and others are members of a distinct social group (J. C. Turner, 1975). Stets & Burke (2000) suggest that participation in social movements increases as an individual identifies with the group, commits to the role identities within the group and see the group as being an important dimension of how they define themselves. Individual identity is now defined more by the shared values and purpose of the group with which they are associated, hence these become determining characteristics of group behaviour (J. C. Turner & Giles, 1984).

Turner & Giles (1984) see cohesiveness as depending directly on motivational interdependence and mutual need-satisfaction, therefore groups reaching set goals are going to be more cohesive than those who do not. From this, it can be concluded where there is a clear understanding of the alignment of group goals, inter- and intragroup conflict is less likely to occur and a collaborative relationship is able to form. It is also important to note that a pre-existing social identification with members of other groups is also an important factor in the development of inter-group relations (Spears, 2011).

2.5.8 Stereotyping

As individuals seek to maintain their group identity, this can lead to the development of stereotypical and conformist behaviours within a group and stereotypical perceptions of other groups. In-group identification with a particular group may not be at the will of the group member, and can lead members from other groups to categorise or label them as a part of a group that they may not necessarily value or wish to be associated with, for example a ‘hippy’ or ‘greenie’. In turn this particular group may be stigmatised or regarded as a group of lower status in society and therefore undesirable to be associated with (J. C. Turner & Giles, 1984). Social schemata are the assumptions that we make of a person or a group of people based on their dress and appearance (De Weaver & Lloyd, 2005; Kleine III, Kleine, & Kernan, 1993). Discrimination and categorisation of other groups and their members may become a feedback
loop that can lead to a distancing from other social groups, accentuation of intergroup differences and even polarization. This occurs especially where there may be inter-group conflict, yet ironically often leads to greater cohesiveness of those members within the in-group (Tajfel, 1974).

2.5.9 Social dynamics of large groups

Large crowds often form in response to a particular political issue or purpose. In this situation where many individuals and different groups come together for a common goal, there is the potential for emotional responses and antisocial behaviour. Although there is a shared social identity as a crowd member, the group that comes together is initially void of shared normative behaviours and seeks conformity within the group which must quickly form acceptable boundaries for behaviour. This is known as ‘Emergent Norm Theory’, based on the distinctive behaviour that arises within a crowd (Aguirre, Wenger, & Vigo, 1998).

Experiments on de-individuation showed a reduction in concern for evaluation of their behaviour when people assume an anonymous role or uniformed identity. The literature is however skewed, as most studies on collective behaviour stem from riots, highlighting the tendency to release aggression when triggered by aggressive behaviours around them. Studies by Johnson and Downing (1979) show that negative behaviour is not inevitable and that the assumed group norms are important in crowd behaviour. Where a large group shares clear norms and values there is much more purpose and self-awareness evident. Ghandi modelled this approach through his campaign of non-violence, where he engaged thousands in direct action with his strong emphasis on peaceful communication.

2.5.10 Non-violence

The role of organised, non-violent citizen action was recorded as far back as the year 5BC where Roman plebeians achieved an improvement in working conditions by Roman leaders as a result of their collective refusal to work. Since then the use of mass-meetings and demonstrations has driven many revolutions and political reform across the world. Thoreau (1845) was one of the first philosophers to theorise about social change methodology and non-violent action in his definitive work “Civil Disobedience”. From this Ghandi famously developed and utilised a theory of non-violent action to achieve Indian Liberation from British rule by his famous quote “be the change you wish to see in the world” (Ghandi, 1951).

Throughout the 20th century innovations in non-violent direct action spread across the world,
from lunch-counters in the USA to delicate coral atolls in the South Pacific Ocean where rainbow-painted boats sailed to achieve the goal of stopping nuclear bomb testing developments (Jaques & Galloway, 2012). Whilst some have critiqued the ability of activist groups to be able to effectively compromise on industrial developments (e.g. Jaques & Galloway, 2012). Thomas and Louis (2014) found that non-violent collective action can more effectively convey a sense of the illegitimacy of an issue and the efficacy of the group involved, thereby promoting support for future non-violent actions. In short, non-violent direct action can be an incredibly effective tool (McCauley & Moskalenko, 2008). Recent studies have found non-violent campaigns to be more than twice as effective as violent resistance campaigns (Stephan & Chenoweth, 2008).

2.5.11 The role of power in social resistance

Power plays an important role in all social movements, with many commencing due to power imbalances, experienced or perceived, between government, industry and community (Klandermans & Oegema, 1987; Martinez-Alier, 2001; Urkidi, 2011). Ostrom, Norberg, Wilson, and Walker (2008) describe the power of an individual in a social system, and how power is going to be elevated through the process of collective-choice. They define an insidious effect of power used to shape people’s perceptions in such a way that they, seeing no alternative possibility, accept their role in the existing order of their society. Epstein, Bennett, Gruby, Acton, and Nenadovic (2014) view institutional power as growing with persistence over time and geographical area, with groups that are unable to maintain a recognisable form, having greatly reduced power, ability to create systemic change, or access to resources.

Changing power gradients within social groups, and between social groups and institutions is a common feature of a social movement, and can be used as a broader frame for their study (Moyer, 2001). While this thesis acknowledges power as playing an important role in perceptions of industrial developments, it is just one of many complex factors interacting to influence social license. Existing power relationships can influence perceived procedural injustice, and become themselves a strategy to resist domination utilising the opportunity of community outrage over new developments (Urkidi, 2011). Perceived power to influence outcomes can play an important role in how communities respond to industrial operations. If they feel that they are less likely to be able to influence any change, then this may influence their decision to try to take any social action. Narratives from the Queensland gasfields show a pervading sense of powerlessness to change anything (Parsons & Moffat, 2014; Rijke, 2013),
reflecting a State law that dictates landholders have no right to deny oil and gas companies access to their land.

In the Northern Rivers of New South Wales, Australia, social positioning and dynamics led to the phenomena of a large resistance movement against an industrial development. It is, however, important to emphasise that while the social movement forms a large part of the thesis, it is not a principle aim to examine the social movement. The principle aim is to respond to the higher order question of how communities respond to industrial developments using a particular case study, which involved the rise of a social movement. A principle objective of this thesis is to examine drivers for different social positioning on developments, for both individuals, and across affected communities. The concept of social license provides a useful platform for discussing social perceptions and dynamics that influence how communities respond to industrial development for the benefit of future land-use planning.

2.6 The role of social license for industrial developments

A social license is an unwritten social contract between a company and community that is fundamentally intangible, based upon the premise that a community or society is able to grant or withhold support for an industry to operate in a given area (Joyce & Thomson, 2000; Owen & Kemp, 2013). With social impacts potentially occurring from the first rumour of a project (Prenzel & Vanclay, 2014), social license can be viewed as a continuous process that occurs over the life of the project (Parsons & Moffat, 2014). As raised community voices become more influential in resource decision-making on a global scale (Martinez-Alier, 2001; Muradian et al., 2003; Prno & Slocombe, 2012; Rasch & Köhne, 2015), social license theory is being developed in the context of extractive industries where there may be competing land uses.

Boutilier et al. (2012) view improved frameworks for social license as a means to “reduce the undesirable kind of political instability”, described not only as politics at the electoral booth, but also socio-political activity that could affect social norms, policy or legislation. With stakeholders defined as individuals or groups that are at risk of being affected by a project, or are a risk to the project (Boutilier, 2014), community resistance is viewed as a risk to be minimised (e.g. Control-Risks, 2012). The term ‘stakeholder’ itself has been placed under scrutiny, having a danger to label inhabitants as passive consultees rather than active agents with the ability to hold valuable local knowledge and skills for input into planning decisions.
(Owen & Kemp, 2013). Whilst community power may be limited by the actions of police or military force, resistance can still be costly for industry (Boutilier, 2014). Community support for an industry can come in the form of explicit support; (reluctant) acceptance or lessening opposition (Owen & Kemp, 2013).

A primary focus of the social license literature centers upon the ways that constructive relationships between industry and community can be fostered, with unifying drivers being engagement, relationship building and trust (Lynch-Wood & Williamson, 2007; Nelsen & Scoble, 2005; Prno & Slocombe, 2012). In the context of corporate social responsibility, Kurucz, Colbert, and Wheeler (2008) summarise the business case for social license in terms of both gaining a competitive advantage by building reputation and legitimacy and reducing cost and risk in terms of public scrutiny by prioritising ‘synergistic value creation’ for stakeholders.

2.6.1 Components of social license

Legitimacy, credibility and trust are important factors that will determine how a community will move up through three distinct boundaries of the social license model (Figure 7) (Boutilier et al., 2012). The ‘economic legitimacy’ boundary is the minimum level of acceptance, achieved when perceived personal losses will outweigh gains, and people perceive that their concerns will be addressed. Williams and Walton (2013) extend the social license model by placing ‘economic legitimacy’ at the first level, meaning that people see the project contributing to the economic ‘wellbeing’ of the region. If there is no perceived legitimacy for an industry or company, then their social license is effectively withheld or withdrawn.
If, on the other hand the company or industry convinces the community of their credibility by addressing concerns and keeping promises, then they may be able to move up beyond mere acceptance into ‘approval’. Williams and Walton (2013) split the ‘approval’ level into two, first with socio-political legitimacy, where the company appears to contribute to the wellbeing of the region and acts fairly in the eyes of stakeholders, followed by interactional trust, with industry credibility strengthened by the perception that the company listens and keeps promises. If they are then able to move beyond the highest boundary of ‘trust’, or ‘institutionalised trust’, then ‘psychological identification’ is able to take place. Once a stakeholder moves to this point, then they are likely to have full faith in the company in question, with a willingness to fight for the future of the project, seeing their own identity and future intertwined with it (Boutilier et al., 2012). At this point, an ‘enduring regard for each-others’ interests’ is felt between industry and stakeholder institutions (Williams & Walton, 2013:4).

2.6.2 Cases of social licence success

Combined with survey data, the social license pyramid can be used as a tool for considering different levels of community engagement with an industry, from acceptance to identification or withdrawal. In the social license literature, factors relating to the establishment of a social license to operate have been investigated in the cases of several international mining developments (e.g. Dare et al., 2014; Everingham et al., 2013; Joyce & Thomson, 2000; Prno, 2013; Walton, McCrea, & Leonard, 2014; Williams & Walton, 2013). Some cases where an industrial development successfully achieved and maintained its social license are described below.

2.6.2.1 Social license success: story 1

A CSIRO survey was carried out in the Western Downs region of Queensland in early 2014, when CSG industry developments were in full swing. Survey questions on community attitudes can directly inform an understanding of social licence levels, with 47% adapting to the changes and 6% viewing changes to be improving the region. Conversely, 34% reported to be ‘only just coping’; 9% were ‘not coping’ and 6% were ‘resisting’ CSG developments (Walton et al., 2014). Using the social license frame, this data could be used to assume that a slim majority were ‘approving’ of developments. A further survey question enabled this question to be answered, where only 9% reported to ‘reject’ the industry; 33% reported to ‘tolerate’ it; 37%
reported to ‘accept’; 14% ‘approved’ and 8% ‘embraced’ the CSG industry (Walton et al., 2014). This data fits neatly on Boutlier and Thomson’s (2011) social license pyramid, translating to 91% of the population supporting the CSG industry in the Western Downs, hence validating its social license to operate.

It is interesting to note, however, that while 15% of respondents declared themselves either resisting or not coping, only 9% elected to reject the industry, meaning that 6% of survey respondents still chose to accept the industry despite a major dislike for it, and the third who were only just coping elected that they were indeed ‘tolerating’ it, which is still a measure of acceptance. Why this is so remains unclear, as motivators specifically for the different levels of social positioning were not a focus of this study (i.e. results were not categorised by level of support), however environmental factors, road impacts, decision-making and citizen voice received the lowest scores on average for all respondents. Positive associations with place attachment, safety, health, community spirit and cohesion received the highest scores, indicating that strong social norms were likely in this community (Walton et al., 2014).

2.6.2.2 Social license success: story 2
An analysis of two United States counties experiencing shale gas developments focused upon how perceived economic benefits and environmental threats influenced perspectives of the industry (Kriesky et al., 2013). A general acceptance of the industry was apparent in both counties. In the county where 30% of family livelihoods were linked directly to the industry there was a significantly greater likelihood that they would view drilling as a positive opportunity, moving up through the higher tiers of the social license model. This occurred despite the majority from both counties also considering the industry to present a threat to human and/or environmental health, hence economic values played a more important role in community-level positioning in this case (Kriesky et al., 2013). Kriesky et al. (2013) suggest that a more in-depth, qualitative investigation of drivers contributing to opinion formation would provide further insight.

2.6.2.3 Social license success: story 3
Prno (2013) identified key factors leading to a successful and ongoing social license for the Alaskan Red Dog zinc mine, the first being a strong association between the company involved and the Iñupiat who made up 85% of the local population. The commencement of the project was based upon a formal, ‘Development and Operating Agreement’ signed between NANA, a company representing the Iñupiat, and the company Cominco Ltd. The agreement not only
detailed a 50% share in profits, it secured an active role for the Iñupiat in decision making, monitoring and managing the project. Profits were shared widely across the Iñupiat community who held up to 13,000 shares, with a high level of indigenous employment evident. Their ongoing social license was attributed to these factors, plus beyond compliance measures to improve environmental conditions alongside the maintenance of continued meetings, updates and opportunities for community feedback, addressing any concerns raised.

Not only did the community hold financial stakes in the company, they had a significant say in decision-making regarding the development of the project. Prno (2013) identified that these factors led to the project enjoying a strong and clear social license from local communities. Despite broad support being apparent, where “the mine has simply become part of their everyday lives”, ‘pockets’ of social license withdrawal were apparent in some communities where claims of environmental and water impacts resulted in legal complaints.

2.6.2.4 Social license success: story 4

Similar themes were evident for the Canadian Minto mine, where the ‘Umbrella Final Agreement’ enabled local indigenous groups to co-manage the project, engaging in decision making and regulatory process from the outset. Open communication channels between the community and senior company officials were one aspect of the broad community engagement activities of the company. One feature of the social license held by this company was that agreements were held principally with community chiefs and political leaders (Prno, 2013). Whilst their views in this case may indeed be reflective of the wider community, especially as local politicians, of all members of government, are closer to their constituency hence possibly more accountable. Other research has, however, demonstrated that this may not always be the case, and power imbalances have the potential to be magnified, prompting increased resistance (Martinez-Alier, 2001; Muradian et al., 2003). Once again, positive views of the project were not uniform across the community, with some negative perceptions evident, however with no quantitative processes having taken place, it is impossible to wager what the proportionate community positioning on project social license may have been.

2.6.3 Social license: cases of resistance and policy reform

With the notable exception of Prno (2013), few investigations have been carried out specifically regarding social license withdrawal. Drivers for social license withdrawal have, however been analysed in the context of land-conflict and social resistance (Martinez-Alier, 2001; Martinez & Franks, 2014; Muradian et al., 2003; Prno, 2013; Rasch & Köhne, 2015;
Urkidi, 2011). The examples that follow outline some cases of resistance against industrial developments in different parts of the world. These provide insight into rationale for social positioning, and social dynamics leading to community-level social license withdrawal, as well as how social action has led to policy reform.

2.6.3.1 Social license withdrawal: story 1
In the Filipino region of Palawan, social license for a mining development was required by government at multiple social scales, however the local population reported that the achievement of local government approval was characterised by processes of manipulation and corruption of local government officials (Rasch & Köhne, 2015). Community perceptions of procedural injustice helped to catalyse processes of resistance. This led mining opponents to win a local government election and delegitimise the previously assured social license for the mining company to operate. In this case, community unity against the mining industry led to altered power structures and social license withdrawal. The slowing down of endorsement processes, does not, however provide a guarantee that the industry will withdraw itself from the area permanently.

2.6.3.2 Social license withdrawal: story 2
In a region of Sumatra, Indonesia experiencing resistance against palm oil plantations, the election of a particular village leader proved pivotal for slowing palm oil developments. His knowledge, education and skills from a previous career as a tax consultant, combined with the motivation of having lost some of his own land to the project, gave him valuable insight in to, and for dealing with political systems and corruption. Several members of the community also already had activist skills and knowledge of the palm oil industry, having worked for an NGO resisting palm oil developments elsewhere. Resistance against the company became so strong that it resulted in a radical redistribution of palm oil profit amongst local residents who also had some of their ancestral lands returned to them from the palm oil company (Rasch & Köhne, 2015). Despite these changes in 2008, intra-community conflict reportedly caused by the palm oil company later undermined these achievements.

2.6.3.3 Social license withdrawal: story 3
The case of the land-use conflict regarding the Tambogrande gold mine in Peru involved the resistance of a poor rural community against an internationally owned company. Initial approvals were granted by the Ministry of Energy and Mines, with final approval requiring an environmental impact assessment and community feedback from one public meeting. A
negative legacy from previous mining developments did not help the project to gain the trust of local residents (Prno, 2013). Major concerns were expressed local residents from the outset, including perceptions of significant environmental, water and social impacts from the proposed mine and the relocation it would require, as well as impacts upon agricultural livelihoods (Prno, 2013). Concerns about the project grew due to the unknown nature of potential impacts, along with a lack of available information and effective consultation expanding community distrust of the company. The resistance movement that occurred consisted mainly of peasants and farmers, led by a high-school principle, gaining increased legitimacy via the support of the Church. A rapid ‘polarisation of social positioning’ within the community occurred from quite early on, contributing to a break-down in dialogue. Social clashes involved violent events that led to the burning of company buildings and the assassination of a resistance leader, a popular farmer. The government and company tried to form an agreement for compromise with the resistance movement, but they refused (Muradian et al., 2003).

The cause gained further legitimacy through a non-legally binding referendum supported by several NGOs and the local government. A 69% participation rate led to a vote of 94% against the project. Although the mining company stressed the poll had no legitimacy, the environmental conflict received international press. A later survey carried out by the National University of Piura found 85% to be against the mining project, providing further legitimacy to the cause, which eventually was successful in withdrawing formal development approvals for the mining project. One defining feature of this resistance movement was the notion of local determination, and the right for greater participation in landscape development strategy and decision-making. Views were also quantified using formal processes. When asked about the decision-making mechanism they would choose, the majority of respondents stated that a regional level referendum would be the preferred process (Muradian et al., 2003). What is also important to note is that there was strong and effective cooperation between local and national NGOs, influencing the delivery of effective, resonating messages that helped achieve broader public support for community resistance to the project (Haarstad & Fløysand, 2007).

### 2.6.3.4 Social license withdrawal: story 4

The case of the OK Tedi mine in Papua New Guinea was slightly different as the mine had been operating for over a decade and comprised 10% of the Papua New Guinea economy. It was forced to change hands following enormous environmental impacts on an important river system, that affected the livelihoods of thousands of residents (Prno, 2013). Social tensions
culminated in around 30,000 local land-holders suing BHP Bilton who owned a large proportion of the mining company. The settlement that resulted led to BHP Bilton withdrawing from the project and giving their share to the Papua New Guinea Sustainable Development Program. Prno (2013) attributes the success of the resistance movement to inadequate community engagement and compensation on the part of the company, alongside the ‘internationalisation’ of the campaign when it was brought to the attention of the international media and advocacy groups.

2.6.4 Drivers of social license success or withdrawal

While the companies involved with the Minto and Red Dog mines had maintained their social license, the OK Tedi, Tambogrande, Palawan and Sumatran projects had been rejected by local communities, or had significantly altered their management and/or wealth distribution. To identify common factors for establishing a social license, Prno (2013) compared four of the above cases in order to provide perspectives on both positive and negative outcomes for the social license of mining operations. Whilst Prno (2013) acknowledged that such outcomes are the result of dynamic interactions between multiple variables, he attributed regional context including social, environmental and economic influences to be one of the most important drivers of social license to operate. Social license was deemed to be principally built on relationships, with adaptability, local engagement and benefit provision playing a crucial role, however they also identified a community aspirations towards sustainability to be a dominant theme.

To address the intangibility of the social license concept, they acknowledged that social positions on project social license will exist on a continuum across a community, and are not based on a formal contract. Their ‘general rule of thumb’ for the ‘issuing’ of a social license was that “at least a majority of approval and acceptance of a project appeared to exist”, according to qualitative and secondary data collected (Prno, 2013:579). Following these claims, he identified that there was a need to better understand divergent views, and examine appropriate methodologies and indicators for establishing a social license to operate. He also raised the broader question of what it actually means for an industry to have and hold a social license.

Observations from all of the cases presented in the previous pages demonstrate that early and ongoing community engagement is essential for achieving and maintaining a social license to operate, but what defines the success of the Minto and Red Dog projects is a formal agreement
for mutual benefit and co-management, a strategy that has been found to successfully underpin developments in other cases (e.g. Ruckstuhl et al., 2014). Community engagement strategies that have been successful in these cases are what Bowen et al. (2010) term ‘transformational’ forms of engagement, characterised by the two-way partnership approach to project management and decision making. Payoffs from such types of engagement are largely longer-term enhanced company legitimacy (Bowen et al., 2010). What does need to be assured, it seems, is that processes are transparent, and that those who are responsible for signing formal agreements are well supported by different groups within the wider community. Evidence from these case studies highlights that whilst interview data may have indicated ‘general support’ according to Prno (2013)’s ‘rule of thumb’, whether a democratic majority actually does or does not support the project cannot be known unless a rigorous survey or polling process is used to directly measure social license. Prno (2013) himself calls out for a more standardised use of the social license concept, raising the question of what measurements or analysis may be the most appropriate for determining a social license to operate, and how his findings can be operationalised in the context of different mining and other industrial projects around the world.

What the literature does not widely report is the success of community withdrawal of social license that does not involve a high level of protest action. Instead, cases of social license withdrawal that have been effectively implemented in government policy, to the extent that the industry or company withdraws their operations, are relatively rare. Such cases involve a complicated set of social dynamics that involve a combination of driving factors that differ between locations and communities, however there are many similarities to be found between cases. Positive and negative impacts on livelihoods and the natural environment combine with relational factors such as perceived procedural fairness, trust and power relationships (Boudet et al., 2014; Prno, 2013; Rasch & Köhne, 2015). Beyond the material, connection to place has been deemed an important justification for involvement in land-use planning, or protest, by indigenous communities around the world, and is being increasingly promoted for this purpose by non-indigenous communities as well (Colvin et al., 2015; Reid et al., 2010; Ruckstuhl et al., 2014; Urkidi, 2011).

Social polarisation at a regional scale is a common occurrence, where communities become divided over uneven benefits and consequences, and in some cases, direct manipulation and corruption by companies and government. Such divisions can be amplified by a previous
history of identity, associations and stereotyping. Polarisation creates conflicting narratives that drive micropolitical processes within groups and communities, and communities need to grapple with these social dynamics in order to be able to form unified groups to withdraw their social license in a way that is clear to policy makers. The community resistance case studies demonstrate that effective resistance also requires knowledge, skills, and a sense of empowerment (Castells, 1983; Urkidi, 2011).

Credible knowledge is an important tool for industry to convince communities to gain social license, and equally important for convincing other community members to join a resistance movement. Previous conduct of companies can play an important role, as rumours of institutional failure or procedural injustice are powerful fuel for anti-development narratives (Rasch & Köhne, 2015). Whilst narratives play an important role, community resistance also requires multiple skills in order to communicate, organise, and negotiate political and legal structures effectively. All of these factors in combination are evident in cases of effective social license, and industry withdrawal (Colvin et al., 2015; Moyer, 2001; Rasch & Köhne, 2015; Urkidi, 2011).

Within the context of each project lies social positioning of individuals across a community that will be based upon many of the drivers outlined earlier in this chapter, in fact throughout the literature on social license approval or denial, rationale for community opposition reflects many of the same themes, including procedural justice, trust in the company and government, and unequal distribution of costs and benefits. Sustainability concerns may relate to both the protection of the natural environment and natural resources it provides for subsistence or other existing livelihoods. Walton et al. (2014) make a distinction between local geographical communities and other groups such as investors, international activists and governments. Boutilier (2014) explores this complexity, and whether communities should have a ‘veto’ on industrial developments when social license is withdrawn. They question whether social actions are likely to be representative of the wider community, with the use of referenda or valid opinion polling seen to lend greater legitimacy to ‘social obstructions’. The examples discussed have demonstrated that they have in these cases.

A common concern is that “state-wide benefits” provided by the project will impact upon the local rural community. Many of the examples provided point towards various aspects of existing value systems being evident within communities, with conflicting values and complex social dynamics evident in many cases. Although few of the studies focus upon these
interactions specifically, it appears that considerable social dynamics need to be overcome in order to organise sections of the community who may share negative views about a project. In order to work towards a more standardised use of the social license concept, it is important to understand in greater depth the role of these complex social dynamics that in-turn drive community-level positioning (and vice-versa) on industrial projects. Based on the assumption of Reid et al. (2010), that communities should have a role in determining their own future, it is also important to understand how community-level social license withdrawal can engage people in decision-making processes that hold the potential to bring policy back in line with community aspirations.

2.7 Chapter Summary

This chapter has described some of the literature relating to challenges and opportunities for landuse planning, exploring many drivers for individual and community-level social positioning on contentious developments that have so far been determined in the literature. While influences on individual views have been explored, the case studies demonstrate that each of these views will come together to form relative levels of social license across the community. It is unlikely that all members of a community will share the same views, however this analysis allows us to understand drivers for the ‘multiple social licenses’ occurring across a community (Prenzel & Vanclay, 2014). Social dynamics in-turn, provide insights into how these views come together; how people influence each other; and what factors lead negative perceptions to develop into to resistance against developments.

The role of community engagement in decision-making processes for rural land use has been an important theme, with the literature pointing towards one thing: that perceived unfair or opaque decision-making processes are a primary driver for the formation of negative views or resistance towards a project. These views can be produced and then magnified by existing and shared value-systems within a community. The role, structure, evolution and social dynamics of a social movement have been explored in detail, with many barriers presenting challenges for community organisation and effective social action. Existing skills and experience with social resistance are an important contributing factor for effective community resistance that can lead to social license withdrawal. Finally, the drivers for improving the likelihood of social license to operate for industrial projects have been explored, towards reducing the likelihood of LULUs and land-use conflicts in the future. While the social license literature views improved engagement as key for reducing social risks, much of the sustainable development
literature argues that community engagement and participation in planning decisions is an intrinsic requirement. Some of the case studies have highlighted the successful social license that can be attained and maintained when formal strategies are adopted prior to, and following, project approval and commencement.
3.1 Introduction

Chapter One has provided justification and context for the study, and Chapter Two provided insight into previous research exploring social responses to the industrialisation of rural areas, as well as the phenomena of social resistance movements. Drivers of how people form views and take up different positions regarding proposed developments have been drawn together from previous studies on social responses to industrial projects. The pivotal question of whether projects will, or will not gain a social license, drives the study frame that seeks to better understand processes leading to the acceptance or rejection of a social license to operate. International examples have provided useful insight into successful cases where transformational engagement process have led to relatively peaceful co-existence with local communities. Other cases where the social license of a company has been denied, have
provided insight into resistance processes that have ultimately led to policy change and/or cessation of projects. This chapter will describe how a case study approach has been used to explore drivers of individual and community-level social positioning alongside other processes that determine the granting or rejection of a social license in a regional context, using mixed methods to explore a case study of the coal seam gas industry in the Northern Rivers region of New South Wales, Australia. The epistemological paradigm of integrated pluralism underpins mixed methods research using a case-study approach, analysed principally using thematic analysis.

3.2 The methodological approach

The epistemology of this study, integrative pluralism, supports the interdisciplinary nature of the subject matter and enables the pulling together of understandings and tools from across multiple disciplines (Mitchell, 2002). In this way, a broader understanding of the complexity of social responses to industrial projects in rural areas can be gained, that includes drivers of social positioning, social license acceptance or withdrawal, and social action. Pluralism rejects the ideal of consensus in cognitive, evaluative and practical matters (Van Bouwel, 2009; Longino, 2001; Rescher, 1993). The epistemological paradigm of integrative pluralism supports the application of mixed-methods approaches as it is broad enough to complement the nature of interdisciplinary research, responsive to the selection of methods and theory most appropriate to the study topic and context (Rescher, 1993). Integrative pluralism seeks to balance processes of knowledge acquisition between the extremes of positivism and constructivism. Its aim is to holistically draw together different ways to view and interpret and understand natural phenomena, by integrating the knowledge that can be gained from drilling down in to the details of individual processes, alongside understanding interactions and relationships that occur within and across natural systems (Longino, 2001, Van Bouwel, 2009). While the study greatly values the constructivist approach, and leans towards favouring understanding of meaning and unravelling process, it also seeks to understand the actions and dynamics of people in the context of their social and natural systems, hence drawing in tools and theory from within and across the disciplines of natural resource management, social psychology, geography, sociology and the political sciences.

There have been phases of the research when elements of a constructivist approach have been appropriate. Constructivist epistemology views research findings as existing precisely due to the immersion of the researcher in the subject of study and the relationship they have with the
researched that literally creates that which emerges from the inquiry (Blaikie, 1993). This provides a significant contrast with the positivist Realist approach which seeks to remain detached from that which is researched without influence or inter-dependence (Blaikie, 1993). Neitzsche describes the concept of a truly objective person as “*a mirror for reflection of distant events...with a paralysed will.*” (Faber, 1998). Hence, in the process of acquisition of knowledge it should be acknowledged that there is no such thing as complete objectivity. Instead it is better to illuminate the origins, approach and bias of the researcher and hence the cognitive lens through which the study passes. The research phases of this study have, to some extent, required elements of both positivist and constructivist approaches to knowledge.

The mixed-methods research was broken down into five phases that required fundamentally different approaches to knowledge acquisition. The earlier phases that relied upon observation, interviews and a focus group favoured a more subjective approach that could gain a richer insight into the formation of the social movement. During the early phases of the research, the immersion of the researcher in the study through overt non-participant observation has enabled the development of rapport with those both supporting, and opposing proposed land-use changes, leading to a snowballing effect of key informant interviews. This collection of quality ethnographic data has enabled deeper insight into social processes occurring for both the social movement and for industry, and has been used to develop and inform survey questions used in later phases of the study. During these processes the researcher is an essential instrument of the study, and it is only through trust and rapport development that participants remain willing to participate and divulge their thought and experiences.

Objectivity played a much more important role in the latter phases of the study that required data to be collected from broad cross-sections of the local population, to discern and examine social positioning on a community scale. Methodologies carefully designed to eliminate bias were essential for achieving a broader view of social positioning on industrial developments in this case study context. An awareness of personal bias and assumptions is important for all research design, and especially so in the design and analysis of study questions that relate to contentious issues.

### 3.3 Mixed methods, case study approach

The use of case studies was chosen as the most appropriate research method due to the intention to examine interactions that are not easily distinguishable from their context (Yin, 2013). A
case study approach was used to examine the phenomena of social positioning and social dynamics in response to a large-scale industrial development in the Northern Rivers community of New South Wales, Australia. A case study has been defined as “an intensive analysis of an individual unit (as a person or community) stressing developmental factors in relation to environment” (Merriam-Webster 2016). The case study is a broadly used tool for examining complex phenomena occurring in a regional or localised context. This can be applicable to broader issues and higher order research questions about phenomena that may be occurring on much greater scales. Gladstein (1984) views the study of groups in their social and environmental context as the most valuable approach for gathering valid set of data that can provide deeper insight to a phenomena.

Yin (2013), Neuman (2011), Hays (2003) and many more, describe different methodological approaches that can be used to explore phenomena relating to a case study population. While a single, standardised case study data collection technique does not exist, there are many well-established methods employed to collect data within a chosen case study, that are best selected in response to your particular research questions (Hays 2003, Neuman 2011, Stake 1995). Due to the high number of variables in any given case study, Yin (2013) advocates the use of multiple sources of data that can be triangulated in order to increase the richness of contextual understanding. Therefore mixed-methods, integrating qualitative and quantitative approaches is most appropriate for the purposes of this study (Reason & Bradbury, 2001b; Neuman, 2011; Cuthill, 2002; Hays 2003; Flyvbjerg, 2006).

The research aim of this thesis is to answer the higher order question: “what are dynamics of social license for industrial developments in rural areas?” While there are numerous industrial developments of different types occurring in rural communities of diverse type, locality and nature around the world, gaining a detailed understanding of social responses to an industry that is currently experiencing rapid expansion in multiple regions internationally appears to be a most appropriate choice of case study topic. Although social responses vary greatly between different cultural and geographic contexts, a detailed study of social responses in a region experiencing the early stages of coal seam gas industry development seems an appropriate choice. While other regions experiencing gas industry development have already been studied to varying degrees in previous research, little is yet understood regarding the Northern Rivers region of New South Wales, which has ultimately experienced a strong community response to proposed industrial developments.
Details of methods used to collect data in each phase of this case study are outlined later in this and detailed in the following chapters.

### 3.4 Thesis objectives and sub-questions:

In order to answer the primary aim of the thesis: “*what are dynamics of social license for industrial developments in rural areas?*”, the study objectives are repeated below, with the addition of sub-questions, relevant to the case study context. It is important to note that while some of the sub-questions are very similar in nature, their subtle differences are important for understanding different phases of the study, outlined later in this chapter.

1) **Gain an understanding of why people position themselves for, against, or neutrally towards industrial developments using mixed methods.**

Sub-question 1: What are drivers of social positioning for contentious land use change?

2) **Analyse social dynamics occurring on an inter-group and intragroup scale and how these influence social positioning on social license for developments.**

Sub-question 1: What are drivers of social positioning for contentious land use change? (for individuals within the group, and for the group)

Sub-question 2: How can intergroup dynamics form barriers to progress?

Sub-question 3: What is the relationship between social positioning, group dynamics and group purpose?

Sub-question 4: “How can community-engaged approaches inform decision-making regarding large-scale industrial developments?”

3) **Examine how community processes can influence policy decisions.**

Sub-question 4: “How can community-engaged approaches inform decision-making regarding large-scale industrial developments?”

4) **Explore how background attributes of a region can affect values and hence positioning on social license.**

Sub-question 1: What are drivers of social positioning for contentious land use change? (on a community scale)

Sub-question 5: In which ways does the social, environmental and economic context of a project impact upon community level social license?

5) **Critique the social license concept and improve its usefulness for natural resource management and land use planning.**
Sub-question 6: In what ways can the research findings be used to clarify or extend the social license concept?

3.5 Phases of the Study

Five phases of this study have resulted in the publication of five research papers, hence the progression of these phases is outlined below in Figure 9, with detailed methods for each phase contained within the papers (Luke et al., 2014b, Luke et al., 2014a, Luke et al., 2013, Lloyd, Luke & Boyd, 2013, Luke et al., 2016).

![Figure 9: The five phases of the research, which all responded to the key research aim (bottom right), and informed each other in turn.]

3.5.1 Phase One

For the first phase of study, multiple cases were selected from within the anti-coal seam gas movement in the Northern Rivers, to provide a comparison, either by linking similarities (literal replication) or by finding contrasting results via a consistent reasoning process known as theoretical replication (Yin, 2003). The first phase of the research used a series of event observations and semi-structured interviews with key informants to determine social dynamics between stakeholders belonging to different social groups.
Following the screening of the *Gasland* film (Fox, 2010) in Byron Bay, one of the key figures in the movement was identified and an interview arranged for a later date. This individual later played the gate-keeper role to other groups within the movement, and of future actions and meetings that the researcher was invited to attend. From there, various ‘gate-keepers’ provided a snowballing network of introductions to other key participants in the anti-CSG movement, or the relevant contact details of individuals involved in related community groups.

An introduction to the case study context is provided in Chapter Four, in which the sequence of events are structured using Moyer’s Movement Action Plan (MAP) model of social movements. Many meetings and events coordinated by members of the social movement are described in Chapter Five, however the researcher was also invited to attend community consultation meetings of the gas company Metgasco between 2013 and 2015, with relevant learnings from these described in Chapter Ten. Social identity theory was used as a lens for understanding intergroup and in-group processes occurring (Tajfel and Turner 1979). A full description of the theory, methods and results of this phase is discussed in the published paper that makes up Chapter Five of this thesis (Lloyd *et al*. 2013). The first phase of the research was designed to answer the following sub-questions:

Sub-question 1: What are drivers of social positioning for contentious land use change? (at the time the social movement began)

Sub-question 2: How can intergroup dynamics form barriers to progress?

An understanding of these processes provided insight into social dynamics occurring at an intergroup scale, however it became clear that social dynamics were also being experienced at an intra-group scale. In order to better understand how a community group operates, forms an identity and makes decisions, the research focus moved to the study of one particular community group involved in social action.

### 3.5.2 Phase Two

The second phase was the focus group phase, which included the observation of a series of community group meetings with the Byron Saving Australia’s Natural Environment (BSANE) group. During this phase, mind-mapping was used by the researcher as a data collection technique to answer the question “*What group processes are aiding or preventing success?*” Gladsteins’ Model of Task Group Effectiveness was used to frame the critique of the meeting...
processes, providing a strong theoretical framework for the analysis of intragroup dynamics, and allowing for the identification of barriers to group effectiveness (Gladstein 1984). This data was then used to develop a mind-mapping intervention for gathering group views and purpose, the detailed methods and results of which are discussed in Chapter Six.

The focus group phase involved two workshops that used mind-mapping to focus group thought and to create strategies for action relating to intra- and intergroup dynamics, also analysed using the framework of the Gladstein model. The first intervention involved a mind-mapping workshop with the BSANE group to clarify group aims and purpose. A second intervention (not described in Chapter Six but discussed previously in Chapter Four) involved a mind-mapping workshop for regional delegates during formation processes of the Northern Rivers Alliance. The focus group research aimed to answer the following sub-questions:

Sub-question 1: What are drivers of social positioning for contentious land use change? (for individuals within the group, and for the group as a unit)

Sub-question 3: What is the relationship between social positioning, group dynamics and group purpose?

The first two study phases explored elements of social positioning on gas industry developments using a qualitative approach. There was a great deal of debate in the media at this time between industry opponents, proponents and government officials relating to the level of community support existing for the coal seam gas industry in the Northern Rivers, hence it was decided to implement a community-level survey to qualify levels of support in the region. This intention, combined with the opportunity of a local government election poll on the matter, led to the subsequent two phases of the research.

3.5.3 Phase Three

The decision was taken to design an exit-poll survey in conjunction with a local government election-poll on CSG, to discern yes or no triggers and to distil a greater depth of understanding and richness of data on social positioning on the issue in the Lismore region. The exit survey methodology followed standard survey practices (Fishbein & Ajzen, 2010, Kleine et al., 2012, Needham, Vaske & Vaske, 2008), following strategic sampling as described by Levy (1983), with detailed methods and results discussed in the journal article that makes up Chapter Seven (Luke et al., 2014b). The Lismore survey questions were informed and developed using
knowledge gained from previous qualitative interviews and observations in the first two phases of the study, and sought to answer the following sub-questions:

Sub-question 1: What are drivers of social positioning for contentious land use change (for those who elected to support, not support or remain undecided on CSG developments)?

Sub-question 3: What is the relationship between social positioning, group dynamics and group purpose?

Sub-question 4: How can community-engaged approaches inform decision-making regarding large-scale industrial developments?

### 3.5.4 Phase Four

A community-engaged approach was used to facilitate the development of a local government election-poll on the topic of coal seam gas developments. A full description of this process, and the policy response regarding the poll result, is described in the journal article that is Chapter Eight (Luke et al., 2013).

The sub-question addressed by this chapter was:

Sub-question 4: How can community-engaged approaches inform decision-making regarding large-scale industrial developments?

While the poll and election-survey results were able to qualify social positioning at a community level, providing insight into motivations for views, a broader geographical and cultural context was at this time lacking from the study. It was acknowledged that the Lismore local government area appeared a-typical of many rural Australian towns, hence the research would benefit from a comparison between Lismore and the neighbouring local government area of the Richmond Valley Council. The next stage of research sought to link different themes arising in survey responses to the different economic, cultural and environmental characteristics of the two Council areas.

### 3.5.5 Phase Five

In Phase Five, replication of the survey methodology used in Phase Four (detailed in Chapter Seven) enabled a comparative analysis to take place between two case studies in the Northern Rivers region of New South Wales, the Lismore and the Richmond Valley Council local
government areas. A comparative analysis took place between the two local government areas through the process of either linking similarities (literal replication) or by finding contrasting results via a consistent reasoning process known as theoretical replication (Yin, 2013). A strong base of theoretical, conceptual and measurable attributes of the two regions were explored in order to support the study context and provide rationale for different themes arising in the two case studies. A detailed description of the results is discussed in Chapter Nine, which also explores the use of a new diamond model of social license (Luke et al., n.d). The comparison of the Lismore and Richmond Valley surveys, along with a detailed exploration of the geographical, economic and cultural context of the local government areas, responded to the following sub-questions:

Sub-question 1: What are drivers of social positioning for contentious land use change (for those who elected to support, not support or remain undecided on CSG developments)?

Sub-question 5: In which ways does the social, environmental and economic context of a project impact upon community level social license?

Sub-question 6: In what ways can the research findings be used to clarify or extend the social license concept?

3.6 The role of the researcher

It is essential for the researcher to be aware of choices one is making and their consequences (Reason & Bradbury 2001a; Tsing, 2005; Neuman, 2011). When using and measuring interventions, the researcher must recognise themselves as an agent of change and a key instrument of the study, their role being to design a process that can produce the relevant information that can lead to action and subsequently improvement (Martin, 2001). Following each phase of research is a time for critical reflection, where the researcher can learn about and understand the problems with their own strategic action, hence continuing the research cycle (Martin, 2001). As such, I the researcher, introduce myself below:

I grew up as a dual citizen of Australia and England, living in Byron Bay and Cornwall and travelling to Bali on an annual basis for the family business. I’ve travelled extensively and ran an import business for a number of years. I graduated from a Bachelor of Applied Science at Southern Cross University in 2005. My main interest has always been on interactions between the environment, society and knowledge. My integrated project focused upon the elements of sense of place in Australia and Bali. Following
graduation I worked for Greenpeace, working in a variety of roles that interacted with the public on a daily basis, discussing Australian public perspectives of environmental issues.

I returned to Cornwall in 2006 for family reasons and completed a Post-Graduate Certificate in Education for Life-Long Learning. I worked as a Lecturer in Environmental Science, Geography, World Development and Sociology at Truro College for a period of three years. During the summer months I worked as a Beach Safety Instructor for children from various schools around Britain, familiarising them with the ocean and helping them to become aware of their environment in a very practical sense.

During this time I became interested in local community groups, joining the Parish Plan Steering Committee as the youth representative and forming a local committee to raise awareness of the need for a skate-park facility in the village. I facilitated meetings and ran a successful campaign involving the community in the process of lobbying the government to build a skate park, working with various stakeholder groups and achieving the support of the County Council. I also wrote songs, sang in a band that played at festivals throughout the region and participated in surf contests. Following this time in Cornwall I returned to Australia to be with my family in Byron Bay in 2010. As I left the UK, it appeared to me that rising economic concerns were leading some key environmental and social issues to be de-prioritised by the government.

I took the decision to return to Southern Cross University for several reasons, one of the key motivational factors being a lack of general public empowerment and awareness of environmental issues in light of rapid change that was becoming apparent in global systems. Many people I knew at the time had been involved in government-supported community groups but had become frustrated with some of the social dynamics involved, and with planning professionals and decision makers developing strategies that continually failed to integrate community input. Through my own varied interactions with the public, a key theme was the feeling of disillusionment and powerlessness faced by individuals that they can have a say in designing and shaping the future for themselves and their wider community.

The focus of my Honours project was on the use of communication tools for improving community action group effectiveness and overcoming negative group dynamics. I strongly believe that contemporary top-down political processes are not always reflective of key community needs and that there needs to be a paradigm shift in how community aspirations are integrated in environmental, social and economic policy. This is why the focus of this PhD thesis extends a case study commenced, in my honours year, in order to understand broader processes of social responses to the industrialisation of rural landscapes.
3.6.1 The necessity of reflection

Although the role of the researcher will vary greatly depending on the subject of research, it is essential that the researcher is able to remain reflexive and critically reflective of both themselves and the social environment within which the study is taking place. As they engage within the enquiry, there is the opportunity to challenge prior beliefs and understandings to reframe what they know. Research and reflection in turn leads to the uncovering of new interpretations and perspectives (Martin, 2001). An important source of personal and professional development can be gained from reflective practice utilised in social or work settings where individuals reflect and learn from their own experiences (Bolton, 2010). While conducting social research, it is crucial to reflect on how others are responding to you, and to remain open and transparent regarding your intentions. Being friendly and open enables the strengthening of rapport with research participants (Braun and Clarke, 2006). The literature on social identity also warns that it is important to dress in a way that avoids the triggering of any stereotypes, where possible.

3.6.2 Ethical considerations

There are ethical questions that need to be considered when partaking in social research, as well as an awareness of the kind of psycho-dynamics one can become involved in (Greenwood, 1999). Practitioner researchers can often experience hostility from individuals who may feel threatened by the duality of their involvement; however as key research aims are to improve community processes, there is more likely to be positive psychological effects on participants of the study. In light of confidentiality only those individuals interviewed as informants from the different groups have been fully identified, others have been identified by a shortened version of their name only.

All phases of the research were approved as low risk research by the Southern Cross University Human Research Ethics Committee (ECN-11-109; ECN-12-154; ECN-13–088- (Appendix C))

3.7 Thematic analysis

The research data presented in all chapters is pulled together using a thematic analysis, used to identify thematic threads of social positioning, social dynamics and social license that are woven together throughout the thesis. Research is a presentation of the natural, or social world led by specific choices made by the researcher, and all types of research produce data which are a product of research questions, and inevitably will be delimitated in some way (Hester &
Francis 1994). Braun and Clarke (2006) describe thematic analysis as a method to be used for the identification, analysis and reporting of patterns, or themes within the data. It can be used as an organisational process for describing and interpreting emergent properties of a data set in the context of the research topic. Whilst some researchers view thematic analysis as a foundation for practice that links many diverse theoretical approaches to qualitative analysis, utilised within analytic traditions such as grounded theory (Ryan & Bernard, 2000, Holloway & Todres, 2003) others view it as a theoretical approach in its own right (Braun & Clarke, 2006). Where thematic analysis differs from analytical methods such as discourse analysis, grounded theory and thematic decomposition analysis is that it does not attach itself to a particular epistemological context, nor have the implicit aim of developing new theory from the data (Smith, 2015).

A range of possible applications relates to the methodological decisions made in research design. Whilst research methodologies can remain flexible in response to research questions, any assumptions may need to be clarified. Braun and Clarke (2006) argue that far from themes arising from the data as passive entities, it is essential to acknowledge the active role of the researcher in the process of identifying those themes that they perceive to be relevant to research questions they have identified. This includes epistemological approaches, theoretical positions and values of the researcher. A range of questions are essential in any research project, from the broader, overarching questions down to the more specific questions posed at data collection stages and refined throughout a research project. Finally, in the interpretation and analysis of the data different questions may arise, or be posed. Braun and Clarke (2006) urge that whilst these questions do not need to be explicitly linked, and exemplar research process will include a series of questions that are well linked to the overall research question, whilst being distinct from one another, providing a good sense of the scope and diversity of each theme.

A thematic analysis can be used in a variety of contexts, with the comparative extremes of the field lying in an observational constructionist approach vs a critical discourse analysis, and the focus varying from a wider social and political context, down to microdynamics of talk and text in its own right. Hence, it is ideal for providing the flexibility required in mixed-methods research, where epistemologically positivist and constructionist approaches can be merged in the triangulation process (Braun & Clarke, 2006; Nikander, 2008).
Discourse is frequently guided towards persuasion, which often will lead to its organising along lines of argument and orientation. Despite a great deal of influential work in discourse analysis originating from interview data (Gill, 1996, Wooffitt, 1992), there is a debate involving the relative advantages of using data that occurs in a natural setting, versus ‘contrived’ data that is generated in a more controlled setting. Both have advantages and disadvantages, and the mixed-methods involved in data collection and analysis will take advantage of the benefits of both by using observations where appropriate, and also interviews and survey techniques where necessary. Some useful guidance for a thematic analysis can be borrowed from discourse analysis which is generally guided by constructionist sensitivities and assumptions about society, language, interaction and meaning (Nikander, 2008).

The context of the analysis needs to be guided by, but not blinded by specific lines of researcher curiosity. Interpreting patterns, variation and detail can be useful techniques in addition to posing questions to the material. Towards the end of the analysis, questions should be posed that enable the researcher to drill down below the surface of the themes, such as: ‘What does this theme mean?’ ‘What may be the underlying assumptions?’ ‘What are the implications of this theme?’ ‘What conditions are likely to have given rise to it?’ 'What power structures may be at play here?' 'What is produced as relevant for decision making?' ‘Why do people talk about this thing in this particular way?’ ‘Where does the subject place themselves in regards to the topic in hand?’ (Are there any indications of schema that may impact upon their decision-making process?) and ‘What is the overall story the different themes reveal about the topic?’ (Nikander, 2008, Braun & Clarke, 2006).

Similarly to many lines of inquiry, the scale at which a thematic analysis takes place will lead to the relational ability of the research to be transferable across contexts. Despite this, the use of earlier quantitative research and analytical observations as a reference point can enable more generalisable research, hence supporting analytical choices made, and helping to form a more solid basis for further empirical observations. Thematic analyses can be a useful tool here, due to an ability to draw thematic threads through and across and data sets that may include data from a variety of sources to find and illustrate repeated patterns of meaning. This makes it a perfect fit for the analysis of a system that is being examined on and between a range of hierarchical scales. The writing process is regarded as an integral part of the research process, not just something that is only used to describe it (Braun & Clarke, 2006), where engaging with the literature can sensitise the researcher to more subtle features of the data (Tuckett 2005).
Through the act of writing, the researcher is able to continue the analysis process, therefore writing should begin as early as possible, whether that be in the form of a process journal, or in the form of writing papers about phases of the research journey. Used in this way, the writing process becomes an essential component of a continually flowing cycle of knowledge acquisition, spiralling into each phase of research.

Critiques of the use of field notes in ethnographic research claim they can be considered an unreliable, subjective source of data (Peräkylä, 1997), whereas the use of transcripts can bring transparency and open access for the reader to the phenomena under study (Nikander, 2008). This also enables the researcher to anchor analytical observations directly in the data. Despite this, there is debate regarding the importance of including non-vocal interactions and additional social processes in the analysis where possible, which can be limited by the use of talk and text alone. Hak (1999) gives the example of research in a hospital setting, where research often will focus upon analysis of discourse occurring within consultations, whilst ignoring the multitude of dynamics occurring between patients and staff. Nikander (2008) encourages the adaptation and triangulation of different research approaches and materials, iterating that it is through ongoing interactions between research traditions that theoretical boundaries can shift, and surprising new outlooks are able to emerge.

3.8 Chapter summary

This chapter has introduced how the epistemological paradigm of integrated pluralism underpins a mixed methods, case-study approach, that has been analysed principally using a thematic analysis. The chapter describes how a case study approach has been used to explore drivers of social positioning alongside other processes that determine the granting or rejection of a social license in a regional context, using mixed methods to explore a case study of the coal seam gas industry in the Northern Rivers region of New South Wales, Australia. Research sub-questions have been placed in the context of the study objectives, and also in the context of the five research phases that have been undertaken. The researcher has disclosed the context of her own interest in this study, and the choice to undertake this particular line of inquiry. Finally, the thematic analytical approach used to draw together themes of the study has been introduced and discussed. While only an outline of some of the methods have been provided in this chapter, a full description of the case study is provided in Chapter Four, and the detailed methods applicable to each research phase is provided in Chapters Five to Nine, which consist of published papers.
Chapter Four: Case Study Context: The Story of the Coal Seam Gas Industry in the Northern Rivers

4.1 Introduction

Rural communities are becoming increasingly aware of the complexity of interactions between market pressures, climate change, urbanisation and extractive industries in regional areas, as described in Chapter One (Head, 2014; Kwakkel & Pruyt, 2015). Understanding these linkages can contribute to the sustainability and viability of rural environments, including the livelihoods and communities they support (Prno, 2013). Social license for an industry to operate in a given area is a tool that can be used in land-use decision-making and governance. Frameworks for social license, and social resistance, can provide insight into community positioning in the context of industrial developments and help us to understand the role of community views in land-use planning and decision making (Boutilier, Black, & Thomson,
The recent emergence of the social license concept is generating a growing body of scholarship, as described in Chapter Two (e.g. Prno & Slocombe, 2012).

The unconventional gas industry is just one of many industrial developments that bring with them a suite of opportunities and challenges. Due to this being one of the fastest expanding industries globally, it has received a strong social response in many rural areas, and is an ideal case study for exploring ways communities respond to industrial developments (Porter, Franks, & Everingham, 2013). Improved drilling technologies have led to newly recoverable gas resources that can require ‘unconventional’ extractive techniques such as hydraulic fracturing, popularly known as ‘fracking’, which is a term that has become a focus of international controversy (Evensen, Jacquet, Clarke, & Stedman, 2014). In many parts of the world concerns have been raised relating to potential health, social, economic and environmental impacts in affected rural communities (e.g. Andermatt, 2011; Klassen & Feldpausch-Parker, 2011; Control Risks, 2012; McManus & Connor, 2013; Vengosh, Jackson, Warner, Darrah, & Kondash, 2014).

Developments of the unconventional gas industry provide a fascinating case study for understanding the links and relationships between many of the pressures converging on rural landscapes and their natural and social systems. Onshore gas and oil extraction created debate regarding the management of not only mineral resources, but also water and land management (e.g. Duddy, 2011; RBS-Morgans, 2011). The extension of on-shore gas extraction and subsequent resource management concerns have inspired studies not only in the physical sciences relating to hydro-geological impacts (Kissinger et al., 2013) and fugitive emissions of extractive processes (Tait, Santos, Maher, Cyronak, & Davis, 2013), but also into multidisciplinary projects such as risk perception and assessment (Small et al., 2014), competing land-use, regulatory procedure (Turton, 2015), human behaviour and values (Kelman et al., 2014), and social dynamics (Willow & Wylie, 2014).

This chapter will introduce the Australian experience of unconventional gas developments, and describe how events unfolded between 2010 and 2016 in Eastern Australia, with a particular focus on the coal seam gas (CSG) industry in the Northern Rivers region of New South Wales. Social responses to existing and proposed unconventional gas developments in the Northern Rivers led to the formation of a substantial social movement, for which events are conceptualised and structured using the Movement Action Plan (MAP) model of social movements that was described in Chapter Two (Moyer, 2001).
4.2 Coal seam gas in Australia

Many parts of regional Australia face coal seam gas (CSG) industry development on an unprecedented scale. Australian land use planning, where significant assets are not impacted, is principally under the jurisdiction of State governments, therefore a variability in controls regarding extractive industries is reflected across the states. For example, the Australian State of Queensland has been facilitating rapid CSG industry expansion that includes extensive drilling, pipelines and export facilities resulting in a range of opportunities and challenges in regional areas (Freij-Ayoub, 2012; Luke, Lloyd, Boyd, & den Exter, 2014b; Measham & Fleming, 2014). CSG developments in Queensland are generally at more advanced stages, with a significant number of wells moving into full gas production. In contrast, regions of North-Eastern NSW are experiencing much more preliminary stages of CSG exploration.

While CSG developments created a booming economy in Queensland, producing ninety percent of the state’s gas supply (Baer, 2014), the industry has also been subject to negative press inside and outside the state, with landholders raising concerns around impacts upon the landscape and rural communities (Letts, 2012). At the same time, the neighbouring state of New South Wales (NSW) has been criticised for taking a more cautious policy approach (APPEA, 2015; Tasker, 2015). The NSW government responded to community protests, particularly from their traditional support base, by removing a five-year royalty holiday and commissioning inquiries into the social, environmental and economic costs and benefits of the CSG industry. New regulatory frameworks slowed down the industry roll-out across rural landscapes (R. B. Brown, 2012; Hazzard, Hodgkinson, & Hartcher, 2013; NSW-Government, 2013; O’Kane, 2013).

The Darling Downs region of south-east Queensland is one of the richest food-producing regions of Australia. In this region, over 30,000 gas wells are planned to be drilled with the capacity to represent a substantial decline in farming land (Lawrence, Richards, & Lyons, 2013). Whilst the Queensland mining industry would be set to bring in AUD$16Bn annually by 2020 (based upon 2011 commodity prices), agriculture would be worth a mere 2.2Bn. Despite the Queensland Government’s own Department of Environment and Water warning that the unconventional gas industry would lead to major impacts upon water and the environment, projects have received little government intervention other than to remove green tape, such as to exempt the gas industry from (previously tightly controlled) existing water management plans (Lawrence et al., 2013). Reflections on issues faced across the Queensland
border and in the United States stimulated discussions on aspirational outcomes for some rural areas, with speculation on what may comprise a social licence for the CSG industry to operate, and whether it should be granted in some regions (Luke et al., 2014b; McManus & Connor, 2013; Sherval & Hardiman, 2014). Those with opposing opinions contributed to a high-profile and vigorous public debate that included responsibility relationships between industry, government and community, with opposition leading to social resistance that was focused in the Northern Rivers region of New South Wales (Colvin, Witt, & Lacey, 2015; Klassen & Feldpausch-Parker, 2011; McManus & Connor, 2013; Wallington & Lawrence, 2008).

4.3 The Northern Rivers case study region

Covering an area of 20,706km², the geology of the Northern Rivers comprises sandstones and other sedimentary layers which are source rocks for gas deposits. There is a geological and climatic line that cuts between the country towns of Lismore and Casino, with eroded volcanic topography creating rich chocolate and kraznozem soils (McKee, Eyre, Hossain, & Pepperell, 2001) and high annual rainfall (BOM, 2015). World Heritage rainforests in the hills to the north of Lismore contribute to the high biodiversity values of the region that has numerous national parks and a rich indigenous culture (Lismore City Council, 2015).

Settlers began to establish themselves in the Northern Rivers in the 1840s seeking cedar, and with the granting of pastoral leases. From the mid-1800s, Casino and Lismore competed to be the regional center, with Lismore taking the role by the 1890s, due to the rivers being the main transport routes (Lismore City Council, 2015). In addition to growing crops, it became the richest Australian dairy district, with primary industries supporting ship-building, transportation, saw milling and tallow manufacturing. Areas of dense forest unsuitable for running cattle were taken up by free settlers and subsistence farmers.
The Northern Rivers is often referred to as the ‘Rainbow Region’, an identity that can be dated back to the Aquarius festival of love and peace that took place in 1973. The festival altered the demographics of the region as a new generation converged just north of Lismore, to discuss new ideas that embraced sustainability and communal ways of living, transforming the existing population (Lismore City Council, 2015). Several issues prompted environmental activism and protest, some with significant success, forming a new regional identity relating to protecting the high natural values of the region. The Terania Creek protests of the 1970s led to the historical decision to end rainforest logging in almost one million hectares of NSW forest (Bible, 2007). Photographs of the Aquarius Festival have prominence on the ‘visit Lismore’ website, calling itself the ‘heart of the Northern Rivers, describing Lismore as a place “renowned for its extraordinary natural beauty, amazing cultural diversity, relaxed lifestyles and quirky charms; a place where old school blends with new age and nature sets the pace.”

4.4 The anti-coal seam gas social movement

Whilst the focus of this thesis is the social license for coal seam gas developments in the Northern Rivers, the first community concerns around gas industry developments began in the
Western Downs region of South-East Queensland, hence this story begins there, with some other important points of connectivity outlined below. A more complete version of the Western Downs experience of gas industry developments will be published in future research, however it is outside the scope of this thesis.

The social movement against coal seam gas in Australia began in Tara, a tiny community in outback Queensland, when several land owners began to question the actions and motives of the CSG industry following the request of gas mining companies to carry out exploration works on their land (Lloyd et al., 2013). From this, concerns arose regarding the environmental sustainability of this mining technique that ultimately led to the growth of the ‘Lock the Gate’ alliance. Simultaneously, concerned groups of farmers in Queensland formed the Basin Sustainability Alliance in the nearby town of Dalby. It was only after concerns were raised in the media that some individuals in communities across Australia became aware that plans to mine CSG went far beyond the borders of Tara, or even Queensland. The broader structural social dynamics occurring have been illustrated using Moyer’s (2001) MAP (Movement Action Plan) model outlined in Chapter Two (Figure 11), which describes eight main stages of social movements, from ‘normal times’, through to ‘success’ and ‘continuing’ the struggle. The model provides a useful frame for describing some of the individual roles and processes involved in the social movement that ultimately led to the withdrawal of social license for the coal seam gas industry in the Northern Rivers region.

4.5 Phase 1 of the social movement: normal times

Until 2011, the Northern Rivers community appeared to be embracing the ‘natural gas’ industry as an opportunity to secure a supply of clean, green, local gas that could provide a sustainable alternative to coal (Mcmillan, 2009). Initially, and according to definitions by Boutilier et al. (2012), CSG companies Metgasco and Arrow Energy appeared to hold broad community approval for their operations. Local government and media appeared to be supportive, if not excited, about proposed CSG industry developments (Mcmillan, 2009). Metgasco was busy negotiating 400 land-access agreements for seismic exploration with local landholders, and forming relationships with members of the business community in Casino. A supportive relationship was also developed with John Walker, the General Manager of Richmond Valley Council. Their relationship with the NSW state government appeared to be strong. The CSG industry was welcomed with open arms and granted a five-year royalty holiday to help stimulate investment (ABC, 2012).
The seed of the social movement was formed in mid-2009 when Dayne Pratsky, a lifestyle block resident of the Tara Estate in Queensland’s Western Downs, was approached by Queensland Gas Company with the intention to drill for coal seam gas on his property. Immediately suspicious of their intentions, he started doing internet research into regions of the United States where the unconventional gas industry was exploiting shale gas reserves. He read about the high water demands of the shale gas industry, and found stories of water pollution, human and wildlife health impacts and legislative change that had occurred to facilitate “rapid gas industry expansion at the expense of communities” (pers.com. Pratzky, March 2011).

As a result, his suspicions grew, so he began to link up with some other concerned Tara Estate neighbours, forming the Western Downs Alliance and attempted to engage the broader farming community, however he did not feel well received. Several actors involved in the growth of the social movement were interviewed (detailed in Chapter Five) in early to mid-2011. Moyer (2001) would consider these early interviews to have taken place in ‘normal times’, the first stage of a social movement where a critical problem exists that the public is largely unaware of.

As is explained in detail later in Chapter Five, social identity played an important role from the outset, where the more wealthy farmers labelled Tara Estate residents, living on their generally unproductive lifestyle blocks, as ‘blockies’. Not only were they newcomers to the region, with most blocks purchased during the late 1980’s, the land was also cheap and attracted people with lower budgets (McCarthy, 2010). With these factors in mind, wealthy land-holders of the region, with strong links to the pro-development, ‘anti-green’ National Party, considered the newcomers to have a lower socio-economic status, as well as being an out-group of their society (J. C. Turner & Giles, 1984). Historic associations that stemmed from the Bjelke-Peterson era were continuing to exert a powerful influence (Lloyd, Luke, & Boyd, 2013). During his long reign as Queensland Premier between 1967 to 1988, Bjelke-Peterson was known as the ‘law and order politician’. He came down hard and violently on activism of any kind, whilst tripling his regional supporter base over the same period by building a strong interpersonal relationship with farmers (SMH, 2005). At this time, in the south-eastern Australian states of New South Wales, Victoria and Tasmania, the environmental movement was flourishing and enjoying a cascade of successes (Teaching-Heritage-NSW, 1998). During this era, activists in New South Wales were portrayed in the media as the heroes responsible
for conserving the rainforests whilst in Queensland, they were the outsiders (ANU, 2004). These associations continued to affect farmers’ perceptions not only of Pratzky, but continued to create a normative societal resistance against any other ‘activists’ who sought to mobilise them against the industry (Parsons, 1961).

Farmers in the Western Downs still had their doubts about the gas industry, however they took a different approach by forming the Basin Sustainability Alliance (BSA). The aims of the BSA were to compile and share information about the industry with their community. A major component of their strategy was to work with the Queensland Government to influence policy outcomes and make satisfactory compromises with industry (BSA, 2015). The banding together of farmers at the exclusion of the ‘blockies’ reinforced an existing power divide, but also touched the nerve of historical associations (Tajfel, 1974; J. C. Turner, 1975). Aside from the challenges of being labelled as a ‘blockie’, Pratzky unwittingly took on an additional label when he suggested carrying out protest activities outside the hegemonic norms of their society - an ‘activist’ (J. C. Turner, 1975).

Around Pratzky the gas industry continued to develop, and, as neighbours in the Tara estate began to make health complaints, he was determined to try to attract help to prove the dangers of the industry he had read about, and to inform others of the extent of proposed developments (Pratzky, 2011; Todd, Lake, Nasht, & Hodges, 2015). Pratzky was largely unaware of the labels that marked him, and were preventing him from gaining much sympathy or support from local farming families. Instead, Pratzky felt frustrated that no-one seemed to be listening to him in the Western Downs. Of course the role of the Basin Sustainability Alliance was to make favourable changes for farmers, but Pratzky felt excluded from this process and from the priorities of the BSA (pers.com. Pratzky, March 2011).

4.6 Phase 2 of the social movement: demonstrating institutional failure

The legitimacy of the industry was first questioned more broadly following the first national news coverage broadcast on the topic (Hays, 2010). In May 2010, Pratzky and others engaged the current affairs program 60 Minutes to film an episode in the Western Downs called ‘Undermined’ (Hays, 2010). Pratzky and farmer members of the BSA expressed their concerns alongside experienced Friends of the Earth campaigner Drew Hutton. Hydrogeologist Dr Gavin Mudd was also on the program, lending credible scientific knowledge to the fears expressed by the Western Downs residents. It could be argued that this was when the second stage of the
social movement commenced, where the ‘institutional failure’ is ‘demonstrated’ or brought to the wider attention of the populace, when local groups begin to form and carry out extensive research (Moyer, 2001). Moyer’s (2001) four crucial roles for a social movement now had a face, with Pratzky being the ‘rebel’ and/or ‘citizen’, Hutton as the ‘reformer’, later to become the President of Lock the Gate. It could be argued that Mudd could be considered as the ‘change agent’, educating people about uncertainties associated with the CSG industry, although he was not an organiser, so Hutton played this role as well with his articulate speech, egalitarian views and organising capabilities.

Although Pratzky fitted well into the role of ‘citizen’ when talking to those outside of his community, the movement was somewhat missing the role of the citizen in the Western Downs, where local residents could not see past the stereotypical ‘blockie’ or ‘activist’ label and did not identify with him (Tajfel & Turner, 1979). While the farmers interviewed in this program effectively fit the ‘citizen’ role of the social movement, Moyer (2001) warns that a citizen may become ineffective in the case that they are unable to separate themselves from the belief that the actions of power-holders are always made for the common good. Whilst Pratzky, Hutton and Mudd were actively criticising the legitimacy of the industry and the legislative processes relating to it, the Basin Sustainability Alliance continued to be “committed to working with industry and government in the hope we can achieve a CSG industry that preserves our groundwater resources” (BSA, 2015). This different approach to resistance has created a very different outcome for the Western Downs, which is not a focus of this thesis, however the community experience there has been well reported in the literature (e.g. Everingham et al., 2013; Mercer, de Rijke, & Dressler, 2014; Walton, McCrea, & Leonard, 2014). In the Western Downs, the social movement has continually been portrayed as a ‘fringe’ group with values contrary to the mainstream (McCarthy, 2014).

Pratzky found a more sympathetic ear with residents of other regions in New South Wales who had also grown suspicious of the industry. In mid-2010 at Broke in the Hunter Valley, a man named John Thompson from the Hunter Valley Protection Alliance called a meeting of approximately sixty community groups from across the state including farming groups and activists who were concerned about the impacts that coal, and coal seam gas industry developments were having, and would have, on their regional landscapes. From this meeting, ‘Shut the Gate’ emerged, later renamed ‘Lock the Gate’ when it was decided that shutting the gate was not going to be sufficient (Pratzky, 2011). Pratzky suggested that Drew Hutton be a
part of the organising committee. As John Thompson struggled with his health, Hutton became the president of Lock the Gate, which became an umbrella group for a rapidly growing number of community groups opposed to coal and gas developments (Lock-the-Gate, 2015).

4.6.1 Planting the seed in the Northern Rivers

Any broader community perceptions of institutional failure did not reach the Northern Rivers until early 2011 when the documentary *Gasland* was screened in cinemas across the region, accompanied by Pratzky who spoke about his own experiences following the film. Up until now, many in the Northern Rivers community were enjoying the idea of securing a local supply of clean, green ‘natural gas’, along with the jobs and improved economy that the industry would bring (Mcmillan, 2009). At this time, only a handful of Northern Rivers residents had begun to question the legitimacy of the CSG industry. Several months previously, a small group of female landholders in Keerong, to the North of Lismore, had been enjoying their morning tea when a drill rig pulled up and proceeded to drill in a field adjacent to their property. Immediately concerned about the gas drilling operation and why they knew nothing about it, they contacted experienced Terania Creek activist, Ian Gaillard, to ask for advice as to what to do. Further west in Kyogle, a fifth generation farmer Leslie McQueen, also had growing concerns about the drilling taking place there, and was starting to connect up with her neighbours, who had also experienced the commencement of exploratory drilling in this way. This type of interaction being a first landholder knowledge of the industry, highlights a gap in the legislative requirements that could easily lead to perceptions of procedural injustice, as has occurred in other cases of social license withdrawal (Martinez-Alier, 2001; Muradian, Martinez-Alier, & Correa, 2003; Prno, 2013).

4.6.2 Awaking the activist beast in the Northern Rivers

From late 2010, when Pratzky toured with the *Gasland* screenings, he spoke after the film about his own experiences in Tara. He spoke about impacts on his own personal wellbeing, but also built upon the themes of the film regarding water impacts (always a pertinent issue in Australia) and nefarious actions by government and industry. What these screenings achieved was a transferal of impact narratives from shale gas developments in the United States, straight into the Australian coal seam gas context. Not knowing that Arrow and Metgasco were already drilling exploration wells in the Northern Rivers, Pratzky’s aim was to ‘wake the activist beast’ of the Rainbow Region in order to ask for help to stop the drilling around his home (*pers.com.* Pratzky, March 2011).
Previous environmental protests in the Northern Rivers, with the Terania creek campaign being one of the most prominent, had enjoyed successes and across New South Wales between the 1970’s, 1980’s and 1990’s (Somerville, 2005; V. Turner, 1998). At the screenings Pratzky met the Keerong women, Ian Gaillard, Leslie McQueen and others (pers.com. Pratzky; Gaillard; McQueen, 2011). Some of these people had been directly involved in the Terania and other campaigns, and others had not, becoming interested when the drilling began in their locality. A screening in Nimbin secured the support of the Nimbin Environment Centre - which also consisted of many experienced activists, immediately sympathetic to Pratzky’s cause. A screening in Murwillumbah helped him to link up with the Northern Rivers Guardians, another long-standing environmental community action group. As has been found in previous studies, those with previous experience with activism are likely to hold strong environmental values, and more likely to support future activism (Dono, Webb, & Richardson, 2010; Martinez-Alier, 2001). Community knowledge on the topic began to rise as individuals began to conduct their own research into gas industry drilling in Australia and elsewhere, and as a small network of concerned individuals began to form, with primary concerns being land rights, impacts on the environment and natural resources including water and farm land (Lloyd et al., 2013).

The first protest march was organised in Lismore in February 2011 with about 400 people in attendance. The research suggests that this was the beginning of social license withdrawal for Arrow and Metgasco, however the numbers of mobilised people were still small (Figure 13). Key environmental groups had reversed their stance, however the majority of the regional community remained disconnected with the issue. Shortly after the Gasland screenings, a ‘Rock the Gate’ festival was organised in Tara by Pratzky, with the support of a small number of people from the Western Downs, with a pivotal organiser being a visiting backpacker who had become engaged with the issue through watching Gasland in Chinchilla. A large portion of support came from the Northern Rivers, particularly from Nimbin Environment Center, however scores of people came from as far as The Hunter, Newcastle and the Illawarra to witness the gasfields for themselves. The ‘festival’ composed of tours of the gasfields, activist training workshops and, of course, some social action that has been detailed in Chapter Five. Experienced activists shared stories, ideas, skills and knowledge with gasfield residents, and with many who had never been previously involved in any activism. The anti-CSG narrative was evolving and expanding within this small temporary community that had been brought together by Gasland, Pratsky and the 60 minutes ‘Undermined’ episode.
4.7 Phase 3 of the social movement: ripening conditions

When attendees went home to different parts of New South Wales, this was just the beginning of an enormous phase of growth and connectivity for the social movement, depicted in Figure 13. It was a fairly chaotic time as established groups such as the Northern Rivers Guardians and the Caldera Environment Centre took up the issue, along with other scattered individuals who were not part of existing groups, who may or may not have had previous experience with activism. Some individuals with shared concerns began to form new groups such as the Keerong Gas Squad, Kyogle Group Against Gas (GAG) and the Byron BSANE group. (Lloyd et al., 2013; Luke, Lloyd, Boyd, & den Exter, 2014a). Although a wide range of concerns were expressed by individuals and groups, farming and activist groups continued to be united at this time by concerns around potential impacts on water systems. Many people were linking into the network from a vast range of backgrounds, bringing with them a wide range of skills and resources. As the physical network of groups grew, so did their online social media networking.

Scattered strategies and actions took place around this time, with activists carrying out strategies such as ‘tell eight people about CSG each day’, however it did not take long for some of the established groups to begin mobilising the local populace. Within a few weeks, the Tweed Heads environmental group, the Northern Rivers Guardians, who had organised a march in Murwillumbah, were surprised to find 2,500 people attending, where only 400 had marched in Lismore just a few months before (Figure 12). The movement also had its first champion in Government, Jeremy Buckingham, of the Green Party who was elected as a Member of the New South Wales Parliament in March 2011, soon becoming the Greens spokesperson on coal seam gas, mining, agriculture and regional development (The Greens, 2016). Buckingham immediately took on the role of reformer, delivering the concerns of the ant-CSG movement straight to the benches of parliament house. Buckingham initiated Australia's first parliamentary inquiry into CSG developments, attempting to restrict developments by the introduction of the "Coal Seam Gas Moratorium Bill 2011", which sought to place a moratorium on the granting of new CSG exploration licences (The Greens, 2016).
This was a very busy time for the early organisers of the social movement, with many actions of varied sizes taking place across the country. A ‘No CSG’ sign was made from 3,000 people standing on the beach in Byron Bay and a ‘Stop coal seam gas’ human sign was made by a further 3,000 people in the Illawarra region, south of Sydney. Around this time, a sixty day moratorium was placed on the CSG industry (Abegg, 2011; Stop-CSG-Illawarra, 2011). The first Lock the Gate annual general meeting was held in June 2011 at Murwillumbah, with hundreds of delegates in attendance from about sixty community groups which formed a loose national network, mostly focussed in New South Wales, with a couple of groups from Queensland, Western Australia and Victoria. This phase would be what Moyer (2001) refers to as ‘ripening conditions,’ the third stage of the protest movement (illustrated by the yellow numbers in Figure 13) as local groups become more active, new groups formed and recognition of the issue rose among the general populace. During this time of group formation and social organisation, each individual and group were experiencing their own challenges and social dynamics.

4.7.1 Social action groups

During this time, the research focus rested upon the formation, experiences and social dynamics experienced by one social action group who called themselves ‘Byron Saving
Australia’s Natural Environment’ (BSANE). Group processes were observed in a sequence of meetings that took place over several months as BSANE formed and evolved in 2011. This focus group research is described in detail in Chapter Six.

Observations of the BSANE group highlighted many patterns of behaviour previously described in the literature, showing a fluid and changeable set of group dynamics (Buchholz & Roth, 1987; Keen, 2003). The group was susceptible to many common barriers to group effectiveness (Wheelan, 2005), with divergent discussions and dominant personalities frequently taking a leading role. The combination of data from interviews and the mind-mapping workshop demonstrated unifying concerns, and the mind-mapping helped the group to focus upon common priorities. Whilst concerns around water were the most frequently discussed theme, it quickly became apparent that mistrust in government and in the mining industry was an important motivator for the group as a whole (Siegrist & Cvetkovich, 2000), a unifying theme for social license withdrawal (Owen & Kemp, 2013; Prno, 2013).

Key aims of the BSANE group were to mobilise people to change governance and legislative processes for mining and extractive industry approvals to improve procedural justice, common to multiple environmental justice movements (Butler & Adamowski, 2015; Martinez-Alier, 2001; Rawls, 2001; Wilkinson, Smith, Joffe, & Haines, 2007). Encompassing group aims were to: have a more environmentally responsible sustainable society; to reconnect people to nature; and to have an accountable government strongly reflected egalitarian world views, one of the strongest predictors of gas industry opposition recorded in United States surveys (Boudet et al., 2014). They believed that it would take nothing short of a cultural shift to make the change that they were seeking. Despite initial difficulties being experienced, following the mind-mapping workshop, the group went on to effectively develop clear aims and objectives that were used to form a mission statement. Actions were suggested, prioritised and acted upon, with group member skills mapped and used to guide the allocation of roles for the proposed projects.

The group’s effectiveness in regards to their own aims can be judged from the actions carried out around this time. Their subsequent actions resulted in a well-attended information night/fundraiser. Scientists from the National Toxics network; Pratsky, a resident from the Queensland gasfields; lawyers from the Environmental Defenders Office and activist Drew Hutton spoke to the Byron Bay community. They organised the manufacture and sale of bumper-stickers (also provided by the Greens), T-shirts and Lock the Gate triangles whilst
collecting signatures for a petition. Key messages were ‘save our water’, and, ‘can’t eat coal, can’t drink gas’.

Following a similar structure, many similar events continued to be organised by the network of groups in the Northern Rivers. At each event, speakers from the Environmental Defenders Office played Moyer’s ‘reformer’ role, discussing the legal rights of landholders and protesters. Dr Mudd and Lloyd-Smith utilised the credibility of their professions to be effective change-agents, providing more technical information about negative aspects of the industry. Dr Mudd stressed the gaps in the scientific knowledge around sub-surface water systems, and Dr Marianne-Lloyd Smith from the National Toxics network described the potential health impacts of some of the chemicals used and produced in the fracking process. Also a key change agent, Drew Hutton roused the crowd by giving motivating, empowering speeches. Pratzky told emotional stories about his situation at home, satisfactorily fitting into Moyer’s ‘citizen’ role in the Northern Rivers, where people were not aware of social identities in the Western Downs. Continuing his role as reformer, Jeremy Buckingham attended some of these events, chairing the NSW inquiry into CSG developments that he had instigated (New South Wales Parliament, 2012). In the Northern Rivers, the movement had drawn together a core team that were incredibly effective at drawing in the wider community on an intellectual and emotional level as the phenomenon of social mobilisation events increased. Event attendees began to wear their t-shirts, put up yellow triangles on their homes, and place bumper stickers on their cars, reinforcing and broadening public exposure to the symbols and narratives of the social movement, the yellow warning triangles, and the key theme of protecting water resources.

4.7.2 Lock the Gate Annual General Meeting

The Lock the Gate AGM of 2011, observed by the researcher, was a significant event of connectivity for the movement, a two-day event attended by delegates from about sixty groups around Australia. The Green Party were present, with Jeremy Buckingham and his advisor Justin Field in attendance. While a few long speeches were a feature of the first day, the second was focussed on small-group activities that were working together on different tasks. This would have clearly been an important time for different groups across the Lock the Gate network to connect and develop relationships. One group, made up of delegates from different groups, involved developing a strategic plan for Lock the Gate, which was completed following the event. Now President of Lock the Gate, Drew Hutton spoke clearly and confidently as he addressed the crowd, now fitting strongly into the role of change agent described by Moyer
(2001). He described how he clearly understood the social and cultural divides that they faced within society. He spoke of the interactions needed in order to connect with communities across Australia: “People like being a part of our law abiding communities and we are asking them to make a huge choice, we need to treat them with respect and humility.” (Luke, 2011).

4.7.3 Arrow Energy consultation processes

Industry, however, was not experiencing the same successes in the Northern Rivers. An Arrow Energy public consultation that took place in Lismore - observed by the researcher (September) - achieved the opposite desired effect of community engagement. The consultation allowed only seven invited community members, mostly from the Kyogle Group Against Gas. Invitations from the Keerong Gas Squad to attend an open public meeting had been rejected by Arrow in favour of this style of ‘selective consultation’. As such, there were more Arrow representatives present than community representatives. A noisy demonstration took place outside for the entirety of the meeting. One of the Arrow representatives stated: “We hear the sentiments of the public outside, it has not escaped our attention.” The meeting was tense, however maintained a respectful tone for the majority. The community representatives were smartly dressed for the occasion, still contrasting with formal dress of the eight Arrow employees who were mostly wearing grey suits. Very early on, when asked to keep questions until the end, Ian Gaillard stated: “We will ask questions when we want - this consultation is for our benefit.” This comment showed a significant amount of empowerment from the outset. Whether this was more reflective of himself, or the wider group Keerong Gas Squad cannot be certain, however this level of empowerment expressed by someone with a leadership role is likely to positively affect the norms of the group (Sherif, 1966).

Towards the end of the consultation, the community became more emotional, unconvinced by Arrow employee assurances regarding the safety and legitimacy of the industry. This was a good example of the type of interaction that the social license literature warns against (e.g. Parsons & Moffat, 2014; Prno, 2013). There was strong evidence of social identification on both sides, with feedback processes rapidly developing into an increasingly polarised relationship (Mackie, 1986; Sherif, 1966). This consultation did not achieve any placation of community concerns nor provide the communication hoped for by the community members. The set-up of the consultation, even the tone of voice and body language of the industry representatives did little to inspire trust in them, failing to improve their credibility, and a negative reputation that they had gained from early drilling in the Northern Rivers combined
with rumours coming out of Queensland (*Pers. com.* Pratzky, March 2011). One community representative later commented: “I couldn’t believe that scientist, she just sat there sneering at us like we were stupid. I feel like calling up Arrow and complaining. It’s just downright disrespectful, this is our lives we’re talking about here!” Such interactions between concerned community members and industry did little to build relationships and improve the reputation of industry, in fact they had the opposite effect- to reinforce mistrust in industry and associated narratives of procedural injustice.

4.7.4 Formation of the Northern Rivers Alliance

The scattered groups across the region began reaching out to each other. Boudicca Cerese, an environmental scientist who was also a member of Keerong Gas squad, had been gathering a number of contacts at various events, invited delegates to a meeting held in Lismore. From this, the ‘Northern Rivers Alliance’ was formed. This loose alliance consisted of delegates from around thirty existing and newly formed environmental action groups. The beginnings of this coalition had the potential to greatly improve network connectivity, but also had potential to create division and tension between the diverse groups. The researcher attended their first four meetings. The first meeting was principally intended to be an information session delivered by the invited lawyers from the Environmental Defenders Office, however some attendees criticised it for not being participatory enough.

The researcher was invited to facilitate the second meeting. Responding to concerns expressed about ‘hidden agendas’ that other groups may have, a mind-map was created to make transparent the concerns and goals of each group they represented. One delegate was quick to rise to anger, and when asked to share their ideas of what the ‘Alliance’ was meant to achieve, loudly vocalised a great deal of concern in regards to the alliance becoming an ‘umbrella group’. This individual placed a great emphasis on the importance of ‘direct action’, seeing the groups’ role to be principally for negotiating such events. This contrasted with others who viewed the Alliance as having a broader role for information sharing and organisation between the network of groups. It was interesting to note that this individual did not attend future meetings. Moyer (2001) notes that the ‘negative rebel’ tends to emerge at the take-off stage, however the presence of this individual, who may have fit this role, was not noted at future events.

Another mind-map, responding to a pre-set agenda item, brought together ideas for a ‘national day of action’ on coal seam gas developments. Learnings from previous experiences held by
delegates regarding protest events were discussed. This became problematic when a delegate from the BSANE group referred to the recent Murwillumbah protest as ‘cute’. The delegate from the Northern Rivers Guardians, who had organised this event, did not appreciate this description, hence the argument that ensued was significant and held potential to magnify divisions in the group (Sherif, 1966). Feedback following the meeting explained tensions relating to perceptions that the BSANE group sought to dominate organisation of the forming Northern Rivers Alliance. What was interesting was that the BSANE delegate was expressing more personal views that did not reflect wider views of the Byron group. This individual could be considered to be playing out another of Moyer’s negative roles, the ‘negative reformer’, too focused on organisational structure, displaying a dominant leadership style that had danger to disempower grassroots cooperation in the Alliance (Moyer, 2001). The research suggests that the opportunity for engagement, transparency and open communication provided by the visual mapping exercise enabled these challenges and potential for division to be quickly overcome in this case (Tsinakos & Balafoutis, 2009).

Towards the end of 2011, Lock the Gate funded the positions of two Northern Rivers coordinators, one being Ian Gaillard, an experienced activist and Keerong landholder, and the other being Boudicca Cerese, an environmental scientist living in Lismore. Coordinators from various regions held central meetings from which they could maintain communication with other regions, whilst a lengthy Northern Rivers Alliance email list and online platforms maintained communication across the network. Many of the groups created their own Facebook pages that linked up with one another, further opening and strengthening lines of communications within and between groups. The Alliance now provided an example of the ‘broad and flexible coalitions’ described by Anguelovski (2015) as being common to successful social movements.

From this position and through this extensive connectivity, narratives of the movement formed and evolved, with water being a primary focus, particularly through the beginning of the movement. Early in the session, intergroup discussions resulted in the decision to consciously remove focus on ‘fracking’ from the campaign as it was too focused on one particular process. The delegates agreed that instead, the key term used would be coal seam gas, or CSG, as it was the specific industry involved and a term already recognised by the community. Due to fears that industry could later attempt to explore other on-shore gas resources, Cerese composed
information leaflets that explain coal seam gas as being just one form of unconventional gas, clarifying that they were opposed to all forms of the industry.

Using the resulting booklet, the different groups coordinated a leafleting campaign that letterboxed nearly every house in Lismore and the neighbouring town of Casino in the Richmond Valley. Groups associated with the Northern Rivers Alliance went on to hold a number of rallies and information nights in different parts of the region, however a particular emphasis was placed on informing those in the Richmond Valley, due to the majority of Metgasco’s exploration licenses being located there. Many of the protests actions that took place throughout 2011 are described in Chapter Five, with the most significant being the ‘national day of action’ which could be considered to be the “Take-off” event of the social movement (Moyer, 2001). This was coordinated by Lock the Gate, with key decisions about the day having been made by the Northern Rivers Alliance.

### 4.8 Phase 4 of the social movement: Take-off

By the National Day of Action on 16th October 2011, people were moving, demonstrating that the movement was clearly gaining considerable momentum (Figure 13). The BSANE group made a significant contribution to the ‘national day of action’, organising a rally of over 4,000 participants that took place in Byron Shire, whilst coordinating effectively with multiple groups across the nation as rallies took place at the same time in twenty-four locations, ten of those being in the Northern Rivers (Coal-seam-gas-news, 2011; Merlet-Shaw, 2011). Together, the network of groups collected over 40,000 signatures on a petition that was sent to the State Premier. They created a unified message, “walk for water” and symbolism that included participants wearing blue clothing to represent the clean, flowing water they intended to preserve. They produced and distributed thousands of yellow Lock the Gate triangles and coordinated the writing of 1,000 letters that were posted to the State Premier on the day as a part of an additional media stunt. They managed to engage famous comedian Arj Barker with the issue, and Ash Grunwald, who was the first famous musician who agreed to play for the Byron Crowd (Merlet-Shaw, 2011).

### 4.9 Phase 5 of the social movement: perceptions of failure

Despite these successes, the groups continued to experience challenges, and further interviews revealed that many of the BSANE group were experiencing individual difficulties. Personal challenges arose from the additional stress added to their lives by the time and energy required
to organise themselves to mobilise the populace, whilst in the meantime still managing jobs, study, childcare, farms and businesses. Some were experiencing exhaustion and ‘burn-out’ (Shields, 2000). Whilst many activities were delegated, the completion of many tasks often fell to a relatively small number of group members, and expectations of the relative input of others led some to complain and/or grow frustrated. In-group conflict began to manifest as stresses built up prior to the national day of action, and several individuals within the group began to fight over internal power struggles (one being the same person that nearly caused a rift for the Northern Rivers Alliance). Following the huge mobilisation that occurred on the national day of action, many in the group were burnt-out and exhausted. With their actions having no immediate influence on policy, ‘perceptions of failure’ (Moyer, 2001) were more common around this time, depicted by the yellow number five in Figure 13. Some permanent rifts from internal struggles had occurred and the group began to disintegrate not long after the event. By this time, however, several group members were developing close ties with other environmental action groups across the Northern Rivers through the connectivity provided by the Northern Rivers Alliance. Whilst many of the groups continued to effectively engage in various forms of social mobilisation and social action, interviews revealed that similar challenges had been, and were being experienced for other groups, similar to those of the BSANE group.
Social mobilisation in the Northern Rivers anti-CSG movement

Figure 13: Graph showing a conceptual timeline of social mobilisation, with key points corresponding to Moyers (2001) eight phases of a social movement, depicted in the yellow squares, being 1) Normal times; 2) Demonstrating an institutional failure; 3) Ripening conditions; 4) Take-off; 5) Perception of failure; 6) Majority public opinion; 7) Success; 8) Continuing the struggle. The dotted lines show the levels of social license held by Metgasco and Arrow at different points in time.

4.10 Sub-campaigns

Many sub-campaigns and parallel social mobilisation processes were at play during this time in the Northern Rivers, and elsewhere in the nation. Lock the Gate was now connecting with groups from Western Australia and the Northern Territory in addition to many in the Eastern states, although the Northern Rivers remained an important focal point for social action. Uncle Harry Boyd of the Ngarakwal Association went on his own quest during this time, travelling to Western Australia to link up with other indigenous Australians who were protesting the development of gas developments in the Kimberly mountains, James Price’s Point and elsewhere (e.g. Mortimer, 2011). Ian Gaillard accompanied him on this journey, where they
met with famous Indigenous singer, Kerrianne Cox, and travelled back to the Northern Rivers across central Australia, joining up the songlines from west to east. Their key aim was to unite Australian indigenous populations to use their rights to country to stop gas industry interference with natural water and land systems (Pers.com. Boyd, November 2011). Uncle Harry and Gaillard were also part of a small group of delegates who went to Canberra to speak directly with the relevant Federal ministers about their concerns regarding the unconventional gas industry (Pers.com. Boyd, November 2011).

From late 2011, through the input of experienced activists from the Terania Creek campaign, non-violent direct action workshops began to be held across the region. These were organised principally by another key actor in the movement, Aiden Ricketts, a Terania activist who was now working as an academic, with a background in law. These workshops further engaged those who wished to participate and developing their skills as activists, whilst consolidating the aims of the movement to remain ‘non-violent’ (Ghandi, 1951). In 2012, Ricketts published the Activists Handbook (Ricketts, 2012), designed specifically to help ‘skill up’ the mobilising residents of the Northern Rivers in the strategies and knowledge required to be a successful activist.

4.10.1 Gasfield free communities

At the first of these workshops, Annie Kia, another key actor, became engaged in the movement. Kia suggested an idea called the ‘CSG Free Communities’ with a deliberate aim to engage those who sympathised with the aims of the movement but were not prepared to take direct action (Thomas & Louis, 2014). The idea was able to reach a broad section of the ‘mobilisation potential’ of the community through building upon community relationships via the strengthening of ‘bottom to bottom’ networks (Anguelovski, 2015). The aims of the CSG Free Communities sub-campaign of the movement was linked directly to the
failure of governments and the legal system to protect the natural environment, with participants viewed as “an expression of people who recognise this failure, and who know they must stand together in solidarity to fight to protect their region.” (CSG Free Communities, 2012). The strategy was to hold a public meeting that would engage local people to carry out surveys of streets in their area. The surveys included knocking on doors and meeting residents ‘neighbour to neighbour’ in order to discuss their views on the topic and provide them with information about the aims of the movement. Residents were then asked to vote whether they wished to live in a CSG free place.

‘CSG’ was later replaced by ‘gasfield free’. The evolution of this question directly re-shaped narratives of the social movement, broadening the focus from the concept of coal seam gas industry impacts on water, to the idea of wider impacts and the creation of an industrialised rural landscape. Once each road had been surveyed, a tally was taken, and the road was declared ‘gasfield free’, with declarations from each street then collected and presented to the Mayor at an organised event in the town center. The strategy was ‘launched’ at an event held in the Channon in April, with an explosion of localised events snowballing across the region. In this way, towns throughout the Northern Rivers were gradually declared “gasfield free”, creating a focus for (mostly local) media coverage (Gasfield-Free Northern Rivers, 2015). Road signs and banners were also erected to make the community stance clear to anyone driving through, and to raise further awareness about the campaign. Although the primary message of being ‘gasfield free’ became a linking narrative of the movement (now a key theme on T-shirts), events were used to demonstrate the opportunities that would be provided by improving Australian adoption of renewable energies (Figure 16). This supports a conclusion of Prno (2013) that wider sustainability issues can have an important influence on the social license of a company, if it is felt that the industry they represent is not aligned with community sustainability views, values and aspirations. It is important to note that Lock the Gate deliberately did not align themselves with the promotion of renewable energies for fear that they could alienate some of their more conservative support base.
Figure 15: The 'Gasfield Free Communities' events took place across the Northern Rivers, and began to spread to other regions of New South Wales and Victoria. Each small yellow placard represents a street and the yellow banners represent towns or villages that had been surveyed. Photo courtesy of Richard Swinton.

Figure 16: A model of a solar-thermal energy farm on display at Murwillumbah following the protest. Photo courtesy of Richard Swinton.
Rallies and protests continued to take place in many parts of the Northern Rivers as the two main companies, Arrow Energy and Metgasco asserted their right to drill on the property of landowners with whom they held land access agreements. ‘Rock the Gate’, Lismore, took place in early 2012, with around 3,000 people participating in a mini-festival where many popular musicians played their anti-CSG, pro-mother earth songs, including a surprise performance by the internationally acclaimed musician Xavier Rudd who played at several anti-CSG events thereafter. Social identity maintained an important influence on the social movement as individuals enjoyed a new group identity that was novel for many and included participation in a movement that was humming with action, music and possibilities for social change (Tajfel, 1974). Every Northern Rivers musician appeared to be writing anti-CSG songs, with CD’s recorded and sold to fund the movement. This trend went national, with a number of Australian rock and pop icons joining together to record anti-CSG songs (Northern-Star, 2013).

The use of ‘word of mouth’ and community meetings, as important communication methods for industry opponents, may have led to a snowball effect once a critical proportion of the community formed a particular view on the topic. This reinforces the importance of relationship-forming emphasised in previous studies (Parsons & Moffat, 2014; Robinson, Styles, Evernden, & Kirkham, 2013). Whilst many joined the movement due to genuine concerns, it is entirely possible that some individuals taking part in the movement were strongly motivated by the normative views and social pull of new and old social connections (Armitage & Conner, 2001). People may well also have been attracted to the movement due to the popularity, energy and momentum that it had generated at this time, although research participants would be unlikely to divulge this information voluntarily. It was not a specific focus of the research, however the effect of such a social pull could be an interesting focus for further study. Either way, it was becoming apparent for local governments in the Northern Rivers that community engagement and sentiment on the CSG issue was strong.

Lismore Mayor, Jenny Dowell, sought to quantify and establish the level of support for the CSG industry in her local government area by holding a formal poll at a local government election in 2012. The researcher and her colleagues were invited to facilitate the development of the poll question, and a subsequent exit-poll survey. Chapter Seven describes the level of community engagement on the CSG issue in the Lismore local government area, and the motivations for their positioning on the topic. Empowerment, normative views and reasoning are explored in detail in the following chapters.
In the community surveys reported in Chapters Seven and Nine, most industry non-supporters reported to feel the same way as the vast majority of their close social connections, however in the Lismore and in the Richmond Valley, some industry supporters indicated that many people they knew also shared similar views. This may provide an indication of an increasing polarisation between those with different perspectives of the industry, with a great pressure on industry supporters to change their views in order to maintain existing social bonds. These findings are consistent with Kriesky, Goldstein, Zell, and Beach (2013), who argues how those with left and right wing ideologies are more likely to seek information from sources that resonate more closely with their values, creating a positive feedback process that strengthens their views further and leads to increased polarisation of social positioning on the topic. Despite these internal dynamics occurring within the community, the Lismore poll result of 87% against the CSG industry was strong, and led directly to local government policy change. The full process of the poll question development and implementation, as well as local government policy impacts is analysed in Chapter Eight.

Throughout 2012 and 2013 more protests continued to take place in the Northern Rivers (Figures 12-18), with blockades and mini-festivals occurring at Glenugie and Doubtful Creek, involving tens to hundreds of local residents that delayed drilling operations for several weeks before lines were broken by around fifty police (Fein, 2013). The actions, attitude and organisational skills of ‘Champion’ leaders such as Ian Gaillard, Boudicca Cerese and Drew Hutton, as well as effective organisation aiding increased community connectivity, shared purpose and skills, effective narratives, learning opportunities were all components of social processes occurring within the movement, that was now experiencing small but regular successes (demonstrated by a responsive government and/or growing support base). These social processes, in conjunction with a regional history of successful social action, were contributing to raised levels of empowerment in the region that were demonstrated in the Lismore survey, whilst at the same time, the perceived power and influence of Metgasco and Arrow appeared to be falling. It was around this time that Arrow Energy sold its petroleum exploration licenses to Dart Energy and departed the Northern Rivers, and New South Wales (Arrow, 2012).
State politicians were verbally attacked on a visit to Lismore in December of 2012. The State Planning Minister, Brad Hazzard, and local MP, Thomas George, attended an open meeting in the Lismore Town Hall to speak to around 500 members of the community on the topic of CSG industry developments (Turnbull & Frazier, 2012). The social movement organised to cause a raucous so that the words of the ministers could not be heard, in order to demonstrate how unheard they, themselves felt. This social response angered the Mayor (who had instigated the meeting, as well as the poll) and many people in the community. However these behaviours were supported by others in the community. State MP Thomas George was reported as saying: "If they (the protesters) think they achieved a lot in Lismore yesterday, well that's not my impression of the day." (Turnbull & Frazier, 2012). Hazzard stated that he would not place public servants in a similar situation again, and would rethink attending any similar events himself on the Northern Rivers. Many did not consider this meeting to be the finest hour of the social movement, where diplomatic relations were turned down, and negative behaviour in the crowd escalated, resulting in politicians being spat on (pers.com. Jenny Dowell, 2012).

Despite this event, a later meeting was held between the State MPs and local councillors. Following the meeting, Hazzard was reported to say that they would be pursuing the issue further: "We'll revisit the issue yet again, if the community is concerned, I want to see in black and white the confirmations that the professional and technical staff have been giving us."
(Turnbull & Frazier, 2012). This statement shows the emphasis that can be placed on technical staff and knowledge providers, and a hope for this politician to find a ‘black and white’ solution (Martinez-Alier, 2001). It also highlights a tendency described by Perhac (1998) as an ‘iron triangle’ where politicians depend upon professional advice, with the danger of excluding citizens from the decision-making process. This also fails to acknowledge the complexity of the issue, which, given the multiple, complex suite of variables involved, can easily be described as a ‘wicked’ problem (Reid et al., 2010).

The community views in this Nationals electorate were challenging even the role of technical documents in the debate, backed up by their qualified - and quantified - regional stance on the topic.

Throughout 2013 the Liberal National Party (LNP) acted to increase the regulation of the CSG industry in NSW, including key changes to its Strategic Regional Land Use Policy regarding valuable agricultural land and residential areas (NSW-Government, 2013). CSG exclusion zones were applied to 2.7 million hectares of the State, including Critical Industry Clusters (CICs), residential zones, an additional seven rural villages and future growth areas in 55 local government areas. CICs were implemented for 60,000 ha of viticulture (vineyards) land and 254,000 ha of equine (horse breeding) land in the Upper Hunter, and more than one million additional hectares of the State’s most valuable farming land were mapped as Biophysical Strategic Agricultural Land (BSAL) (NSW-Government, 2013). Lock the Gate and its member

Figure 18: The movement maintained pressure on their State level Nationals MP. Photo courtesy of Richard Swinton
groups did not, however, consider these changes to be enough, seeking a total ban in the Northern Rivers and other regions.

4.10.2 Metgasco’s consultation meetings

In early May 2013, Metgasco began to hold invitation only community consultation meetings to which the researcher was invited to attend by CEO Peter Henderson, who had been previously interviewed as a part of this research. The meeting was composed of a small group of farmers and businessmen from key local industries, as well as a representative from NSW Farmers. The mayors of Kyogle, Richmond Valley and the Clarence Valley were also present, but notably, neither Lismore Mayor Jenny Dowell, nor the Tweed or Byron Shire Mayors, who had been openly supportive of the anti-CSG cause, were present. Stuart George was also present, a popular local businessman (and the son of Thomas George, the National Party’s State Member of Parliament), had recently been employed by Metgasco in a community engagement capacity. The farmers and businessmen appeared generally supportive with some having already signed agreements for land access, and for locally supplied gas. The NSW Farmers representative was more cautious, choosing to take a ‘neutral position’ until the science and potential implications were “clearly sorted out”. The Richmond Valley Council General Manager was present, and it was clear that he was an open and strong supporter of Metgasco and the coal seam gas industry.

The NSW Farmers representative expressed concerns about the transparency of the group, asking whether it was an internal Metgasco committee. The response was that it was a Metgasco ‘self-interest committee’, seeking advice on how to better inform the community. Henderson saw its role as a “disciplined forum for discussion, with the right representatives to move the process.” It was agreed that it would not be a committee as such, but a ‘group’, however strict procedures were followed, with a Chair agreed upon and timely distribution of agendas and minutes for bi-monthly meetings. It was clarified that group membership did not imply support for Metgasco, and agreed that group member names would not be made public. The meetings would also not be advertised, for fear of ‘rent-a-crowd’ turning up and disrupting the process. Following criticism from some attendees regarding a lack of representation from Lock the Gate, or any notable industry opponents, three different individuals were contacted to act as a representative. They refused to even respond to messages, unwilling to sanction Metgasco’s actions in anyway by their presence at the meetings (Pers.com. Gaillard, 2013). This unwillingness to compromise has been a notable factor in previous instances of
unsuccessful social license, where communities have resisted projects on a large scale (Prno, 2013).

In a second interview that followed the initial consultation meeting, Henderson reported that there were several key members of Lock the Gate that he had previously felt that he could hold a conversation with, who now refused to speak with him at all (Pers.com. Henderson 2013). Here again, social identity played an important role as negative associations impacted upon relationships (Tajfel, 1974). The decision of Cerese and other Lock the Gate members to boycott the meetings was not only due to identification, but was also a demonstration of their unwillingness to compromise, as well as their perceptions of the strong position they held. Henderson gave the impression that times were getting more difficult on several levels, on a personal and industry scale. He saw the Lismore poll as an opportunity used to claim legitimacy for their movement. A level of ‘nastiness’ had been experienced from some people who had intimidated his local employees, and some of their children had been bullied at school, indicating polarisation occurring not just for adults, but social pressures being experienced also by children. He also felt that the delays imposed by the NSW government were unfair - Megasco had acted in good faith, followed the legislative requirements, going above and beyond the community consultation requirements. He regarded the legislative changes that had been made by government to be legitimising the concerns of the movement and perpetrating a myth of potential negative impacts. Henderson viewed the NSW government as creating unnecessary uncertainties for the CSG industry, leading to a de-stabilised socio-political environment for social license to operate, such as that described by Boutilier et al. (2012).

Henderson noted marked differences between local government areas, with some areas appearing much more supportive, particularly in the Richmond Valley local government area where they had been operating for ten years. Henderson believed that the level of opposition increased, with the greater distance people lived away from their operating area – an interesting opposite to the NIMBY phenomena discussed in previous studies (e.g Michaud, Carlisle, & Smith, 2008). He noted the lack of support in Lismore, believing that opposition began with the release of Gasland and acknowledged the recent ‘Rock the Gate’ event, which 7,000 people had attended. Henderson felt that their business in Lismore was minimal, once again returning the focus to the Richmond Valley and Kyogle Shires where they still maintained relationships and land access agreements with landholders. His perception of the Green Party was that they
had reversed their support for CSG due to a fear that it would threaten investment in renewables.

Henderson acknowledged the challenge of dealing with a great diversity of interest groups involved, listing several different groups, some of whom were ideologically opposed due to concerns about climate change; for others it was mostly local impacts; some were particularly concerned about landholder rights; some had lost trust in the NSW government; some were political opportunists; some simply were needing reassurance while others were simply opposed to change. He viewed the Lock the Gate movement as ‘a religion’ linked to a need for identity, and, according to Henderson, if it was not CSG it would be something else. His explanation was that where there used to be a local church identity, now people were needing something else, and have switched to ‘Mother Earth’ as a new religion. His feeling was that if you challenge ‘them’, you in effect are challenging their religion.

When asked about his view of social license, Henderson responded by asking: “Really, what is it?” “Who gives it? How does social license operate in an age of Facebook and Twitter?” He saw it as a term used effectively by the Green Party and NIMBYs to make complaints about the industry, and he stated his view that land-use decisions should be left for our democratically elected representatives to act on our behalf. When asked to reflect upon Metgasco’s community engagement processes, Henderson said that if they could go back three years in time, they would “put a lot more effort into communicating with the general community”, to explain the safety of the industry and its place in a transition economy. He also explained the challenges they had faced. They had not expected the level of opposition, and with most employees being engineers and geologists, they were not experienced in public relations. What Henderson’s comments really demonstrate is a lack of emphasis placed upon the importance of community engagement and an unpreparedness of the potential for ‘social license to operate’ to become a tangible risk to their operations. Metgasco’s engagement approach, although above and beyond the requirements of the law, still far more reflected the engagement attempts described by Prno (2013) that led to social license withdrawal in other cases. Metgasco climbed only halfway up the rungs of Arnstein’s ladder to processes of ‘informing,’ ‘consulting’ and ‘placation’, far from transformational engagement approaches that have positively contributed to social license approval elsewhere (Bowen et al., 2010; Prno, 2013).

Following speculation about community views in the Richmond Valley Area, a second election-survey was implemented in order to determine social, and community positioning in
the Richmond Valley local government area. The methodology of the Lismore survey was replicated, with some additional questions on social activism and rationale for individual positioning. Due to the similarity of its profile to many broad-acre farming regions of Australia, the Richmond Valley made for a particularly valuable case study, Chapter Nine compares findings with the Lismore results. Due to Prno (2013)’s emphasis on the crucial role that context will play regarding community level social license to operate, a detailed description of the geographical, historical and cultural context of the Lismore and Richmond Valley local government areas is also included.

4.11 Towards Phase 6 of the social movement: majority public opinion

From September 2013, the newly elected federal Nationals member for the Page electorate became one of the first in the party to take an anti-CSG stance, which was possibly the beginning of split views of the topic within the National Party that would become widespread by the 2015 federal election (Calcino, 2015). Whilst the NSW Liberal-National (LNP) Government was beginning to increase environmental controls, in 2013 the Australian Federal Government shifted from Labour to LNP who took to office with a strong pro-gas stance. This increased a growing disconnect between State and Federal LNP policy in regards to the gas drilling industry (Calcino, 2015).

Whilst the anti-CSG movement continued to grow nationally and internationally, events at Bentley in the Northern Rivers began to take the spotlight in early 2014. Still holding land-access agreements with four landholders in the Northern Rivers (not in the Lismore LGA), Metgasco attempted to commence exploratory drilling at Bentley, on the border of the Lismore and Richmond Valley LGAs. Activists verbally confronted the farmer who chose to continue negotiations with Metgasco and promoted his support for Metgasco’s operations on local media. A protest camp was subsequently set up by Lock the Gate, which became populated for several months (Nicholls, 2014; Robertson, 2014). The Bentley camp saw the emergence of the ‘Knitting Nannas’. With a strong focus on ‘intergenerational equity’ (their message being “We’re protecting the water, air and land for the kiddies”), their network has since grown to having more than 35 branches throughout Australia as well as about four in the United Kingdom (KNAG, 2016).

Each time Metgasco sought access to the land (owned by a farmer who they held strong relations with), a large number of activists were mobilised using phone trees and internet sites
including Facebook, with thousands of people predicted to gather at the site to greet the drill rig (Nicholls, 2014). The tension built considerably when it was discovered that 850 riot police were booked into accommodation in the surrounding towns in order to break the blockade and force access past the protesters (Olding & Ralston, 2014). Finally, the State Energy Minister stepped in and suspended Metgasco’s drilling license due to ‘inadequate community consultation’, referring the project to the Independent Commission Against Corruption (Nicholls, 2014).

Two interviews took place with Lock the Gate organisers on the eve of the ‘win’ at Bentley, with their National Coordinator Drew Hutton describing the win as a “Watershed event”, and the now Northern Rivers Coordinator Ian Gaillard (Interviewed in Chapter Five) describing Megasco’s license suspension as a “tipping point” for the social movement (pers.com. Gaillard, 2014). CSG opponents considered this a pivotal moment of the social movement, although the licenses of Metgasco and Dart were still ‘operational’, if on hold. Despite the ‘win’ at Bentley being widely regarded as a huge success by the movement, due to the fact that legislation had no appropriate mechanism for withdrawal for such a purpose, the NSW government was forced to withdraw the suspension when taken to the Supreme Court by Metgasco (Nicholls, 2015).

Coal seam gas was placed firmly on the NSW State Election agenda, which could determine that it was around this time that Moyer’s sixth phase of the social movement (majority public opinion) was achieved at a state-level social scale (Moyer, 2001). The anti-gas social movement had grown into a significant citizen demand for change, with poll and survey results from our research, from state-wide polling (Aird, 2015) and from election results showing a broad community lack of satisfaction with government policy on the unconventional gas issue. By the end of 2014 there were 142 self-declared gasfield-free communities in the Northern Rivers region, with an average of 95.3 per cent of respondents declaring they wanted a gasfield-free region across surveyed communities. Metgasco and Dart’s social license had been clearly withdrawn, and community sentiment legitimised in various ways, however the social movement could not be considered to have achieved ‘success’, until its aims were met, to establish a total ban in the Northern Rivers. The NSW government commenced a Petroleum License Buy-Back Scheme from the end of 2014 (NSW-Gov, 2014).

In August 2014 Richmond Valley Council reversed its stance, with Council voting to no longer support the unconventional gas industry in their LGA, one of the last Northern Rivers Councils to take an active anti-gas stance. The change came in response to enormous pressure from the
community, with Gasfield Free declarations presented to the Deputy Mayor from different parts of the Shire, claiming that between 85 per cent and 93 per cent of Richmond Valley residents wished to remain Gasfield Free (Feliu, 2014). The Mayor and only one other councillor voted against the move to change their position. The resolution read:

‘The Richmond Valley Council believes that given its current understandings and existing knowledge base around the unconventional gas industry, the potential effects on the environment, the uncertainty surrounding fracking and the strongly expressed community views against the unconventional gas industry that it cannot support the development of the unconventional gas industry in this local government area at this time. Further to this, that Council affirms its strong opposition to fracking in any form.’ (Feliu, 2014)

Following a one-year break, a community consultation meeting was held by Metgasco in March 2015. CEO Peter Henderson reiterated that given that Metgasco had carried out all consultation requirements in good faith, as per the legislation, he was disappointed in the changed stance of the New South Wales Government and their decision to suspend their license due to ‘inadequate’ consultation. Despite this, all but one landholder expressed that he simply could no longer support Metgasco due to social pressures in their community. NSW Farmers did not attend this meeting. The power structures had flipped, as the organised social movement and supportive local councils put increasing pressure on the State Government to completely ban the industry in the Northern Rivers. The Richmond Valley General Manager, who had been an important industry proponent in Council, left soon afterwards to pursue a career in Western Australia (J. Brown, 2015).

4.12 Phase 7 of the social movement: success

Finally, in December 2015 after several months of negotiations, Metgasco shareholders voted to accept an offer of the state government to buy back their license to operate, for a sum of $25M (Hawke, 2015). The social movement had met their aims, in the Northern Rivers at least, reaching Phase 7 of the MAP model of social movements: success (Moyer, 2001). From here on in, the final, eighth phase: ‘continuing the struggle’, is likely to involve the focus of the movement shifting to other regions, and possibly nations, which could be a focus for further research. Rahm (2011) views that whilst community resistance may successfully delay the role out of the unconventional gas industry in some areas, and drive industry and governments to increase the environmentally and socially friendly nature of some of the processes involved, there is simply too much money to be made for the industry to withdraw. Rahm (2011) has
argued that rural communities will continue to be transformed by gas industry developments. Cases of social license withdrawal have, however, successfully led to policy reform in previous cases of mining developments (e.g. Muradian *et al.*, 2003; Prno, 2013), and now in the case of the CSG industry in the Northern Rivers, with policy implications to be discussed in Chapters Eight and Ten.

### 4.13 Returning to the Western Downs

In the Western Downs, the research shows that residents are coping, albeit only just, according to a CSIRO Wellbeing study, where just over half of residents surveyed, 51.5% claimed to be ‘adapting to changes’ or changing to something different but better (5.9%). The rest claimed to be “only just coping” (33.9%); 15% were either ‘not coping or ‘resisting’ (6.1%) (Walton *et al.*, 2014). Queensland Senator Glenn Lasarus recently ran an online campaign to push for a Royal Commission on the negative impacts of intensive CSG mining on Family Health. Over 100,000 signatures were received, hence a Royal Commission ran between 17th February and 14th March 2016, known as the ‘Bender Inquiry’, relating to the suicide of a farmer not coping with CSG developments in the Western Downs, George Bender (Lazarus, 2016). This researcher has been collecting qualitative data in the Western Downs since the commencement of this research project, however this research is deemed outside the scope of this thesis, hence will be a focus of later publications.
Chapter Five: Community Perspectives of Natural Resource Extraction: Coal-Seam Gas Mining and Social Identity in Eastern Australia


This chapter addresses the first two sub-questions of the thesis:

Sub-question 1: What are drivers of social positioning for contentious land-use change (at the time the social movement began)?
Sub-question 2: How can intergroup dynamics form barriers to progress? Abstract: Using a recent case study of community reaction to proposed coal-seam gas mining in eastern Australia, we illustrate the role of community views in issues of natural resource use. Drawing on interviews, observations and workshops, the paper explores the anti-coal-seam gas social movement from its stages of infancy through to being a national debate linking community groups across and beyond Australia. Primary community concerns of inadequate community consultation translate into fears regarding potential impacts on farmland and cumulative impacts on aquifers and future water supply, and questions regarding economic, social and environmental benefits. Many of the community activists had not previously been involved in such social action. A recurring message from affected communities is concern around perceived insufficient research and legislation for such rapid industrial expansion. A common citizen demand is the cessation of the industry until there is better understanding of underground water system interconnectivity and the methane extraction and processing life cycle. Improved scientific knowledge of the industry and its potential impacts will, in the popular view, enable better comparison of power generation efficiency with coal and renewable energy sources and better comprehension of the industry as a transition energy industry. It will also enable elected representatives and policy makers to make more informed decisions while developing appropriate legislation to ensure a sustainable future.

Keywords: community engagement, natural resource extraction, coal-seam gas, sustainable energy source

5.1 Introduction

Society faces many grand challenges for sustainability within a world in transition. There is an urgent call for research and development towards mechanisms that allow science and society to address decision making and the needs of citizens at global, regional, national, and local scales (Reid et al. 2010). This paper explores community perspectives of the coal-seam gas industry in affected communities of northeast New South Wales and southeast Queensland, Australia, as a case study of society-wide decision-making in the context of natural resource extraction. This case study focuses on a situation where public engagement is high, and is heightened through the contentious nature of the proposed resource extraction.

As easily accessible sources of hydrocarbons have been exploited, the exploration industry has been forced to target unconventional reserves of oil and gas. In Australia the gas mining
industry is mostly dependent upon the extraction of coal seam gas. Gas reserves are being developed in every State, with government estimates of a projected 40,000 gas wells in Queensland alone by 2030, and gas facilities approved for construction at regional ports. The industry is drawing billions of dollars into regional areas, creating new jobs and swelling State and national coffers as export contracts are signed and sealed.

The industry has faced criticism from various stakeholder groups. Concerns have arisen due to fears of the potential environmental impacts of mining processes, and of impacts on the Great Barrier Reef from export facilities being developed on Curtis Island. UNESCO is currently re-evaluating the Great Barrier Reef’s world heritage status as a result. Environmental concerns relate to high water consumption, groundwater contamination, salt production and air pollution, with a particular concern relating to the long-term nature of potential impacts. In addition, there is concern as to whether there may also be knock-on social and economic impacts associated with the industry. Environmental advocacy groups have also stated that they do not see gas production as a solution to decreasing carbon emissions.

This is often claimed to be the critical decade. It is understood that human society needs to be able to adapt quickly to rapidly changing global social and environmental conditions, and that a community that lacks adaptability to its changing environment can compromise its own viable existence (Lebel et al., 2010). However, there is growing concern that the current capitalist system does not address long-term environmental or social issues easily or well (Guptara, 2010; Reid et al., 2010; Dunstan, 2011; Irvine, 2011). There is pressure for governments to come up with new energy solutions. Mineral-rich Australia, therefore, is facing mining development on an unprecedented scale (Irvine, 2011). While the national focus on resource extraction has tended to be economic, coal-seam gas mining has brought together economic, social and environmental issues – mineral resources, water resource management, agriculture and environment – into the Australian public debate (Brown, 2011; Duddy, 2011; RBS-Morgans, 2011): “The explosion in coal-seam gas extraction has concerned farmers and green activist groups locked in fierce debate with cashed-up extraction companies and governments with dollar signs in their eyes.” (Klan, 2011: 13).

5.2 Communication failures and social impacts

Inadequate community engagement is viewed by many researchers as the primary governance problem contributing to social conflict around land and resource management issues (Pullin...
and Knight, 2003; Hindmarsh, 2010). During coal-seam gas exploration in Australia, it has become clear that there have been key communication failures between industry and community. In Western New South Wales, for example, one company was reported to employ the strategy, considered to be intimidating, of taking community members out of a meeting to question them individually (pers. comm., Ian Gaillard 23/07/11). Company representatives have been accused of continually failing to adequately answer community concerns, and of systematically withholding relevant information when answering questions (pers. comm., Garry Gilliland 13/09/11). It has been reported that large sectors of the community consider they have been insufficiently notified of planned exploration, or consider they have been provided with biased information, rendering them unable to take what they consider to be an informed view of mining developments (Leser, 2011). Reed (2008) argues that stakeholder participation needs to be underpinned by a philosophy that enables empowerment, equity, trust and learning to take place. In order to empower individuals and groups in the community to make informed choices, to steer governmental decision making processes, the community has to be brought to science, and vice versa (Greenwood and Levin, 1998; Reed, 2008).

One way to examine the impacts of community engagement and communication success and/or failure is through the lens of social identity theory (Spears, 2011). Social identity theory argues that individuals define themselves largely according to their group involvement and memberships. In social identity theory, sociologists explain the levels of social analysis along an interpersonal to intergroup continuum, creating an important bridge between the concept of self, group membership and intergroup behaviour (Spears, 2011). Achieving a positive distinction between one’s own and another group leads to inter-group behaviours, where any perception, cognition or behaviour is influenced by the individual’s recognition that they and others are members of a distinct social group (Turner, 1975). As individuals seek to maintain their group identity, this can lead to the development of stereotypical and conformist behaviours within a group and stereotypical perceptions of other groups. This relative homogeneity effect leads to the increased likelihood of stereotyping of other groups and their members. Discrimination and categorisation of other groups and their members may become a feedback loop that can lead to a distancing from other social groups, accentuation of intergroup differences and even polarization of a community. In-group identification with a particular social group may also not be at the will of the group member, and can lead members from other groups to categorise or label them as a part of a group that they may not necessarily value or wish to be associated with, for example a ‘hippy’, ‘greenie’ or ‘red neck’. In turn, this particular
group may be stigmatised or regarded as a group of lower status in society and, therefore, undesirable to be associated with (Turner and Giles, 1984). Social schemata are the assumptions that we make of a person or a group of people based on their dress and appearance (Kleine et al., 1993; De Weaver and Lloyd, 2005). Social stratification is associated with gradients of perceived status differences that can create social-psychological pressures for social change.

5.3 Methods

Here we present of a case study to examine community reactions to a politically-charged and emerging environmental issue – coal-seam gas mining – and gain insight to the processes of community engagement with a natural resource management matter that has landscape-wide implications. Case study methodology is an integrated approach of enquiry that uses unique examples of social situations as the basis of deep description and analysis to gain insight into questions of how and why a social process or phenomenon works. It is, according to Yin (2009:2), the “preferred method where (a) “how” and “why” questions are being posed, (b) the investigator has little control over events, and (c) the focus is on contemporary phenomenon within real-life context”. It is typically used where there are more variables – often many more – than data points, and insight into complex social processes is sought, rather than simply describing pattern or seeking a simple cause-and-effect relationship. It is perfectly suited to the examination of issues of social concern. Case study methodology relies on multiple evidence sources, and thus legitimately works with diverse, and often very different, data gathering techniques. Case study analysis provides results that are validated through triangulation, the convergence of insights from independent or unrelated evidence and/or cases. It is the independent origins of such insights, especially where they converge to a common answer, that provides the validity of the emerging understanding of the how and why of the social process.

In developing this case study, we focussed on describing the various social constructions of the issue of coal-seam gas mining, based on people’s expression of these constructed ideas, through interviews, and their behaviour reflecting the ideas through observations at key events (Jackson and Penrose, 1993). This allowed us to examine interactions not readily distinguishable from their context. The case study builds on interviews with key informants from key social action groups engaged in this issue, and observations at key events:

- The Western Downs Alliance
• Lock the Gate
• The Basin Sustainability Alliance
• Kyogle Group Against Gas
• Keerong Gas Squad
• The Ngaraakwal Indigenous Association
• The Tara blockade and the May Day Chinchilla parade (May)
• The Murwillumbah protest rally (May)
• 9th Annual Australian Coal-Seam Gas Conference, Brisbane (June)
• Lock the Gate Annual General Meeting (June)
• Casino Environmental Defenders Office public meeting (August)
• Arrow Energy Public consultation, Lismore (September)

Action research was used as a basis for engaging with this study, taking a systemic thinking perspective to describe and understand the social interactions within the communities in each case study (Flood, 2010). Action research allows the researcher to gain a rich, contextual understanding of social processes, and to see beyond group discourse, to identify greater concerns and themes reflecting peoples’ values, sense of community and local environment (Greenwood, 1999; Dick, 2000). The processes of action research and action learning can be used effectively to empower individuals, groups and organisations, and to help them change and develop relevant skills (Swepson et al., 2003). This paper describes the early stages of this action research project, focussing on the richness of evidence and contextual understanding obtained from several data sources, primarily interviews and observations (Gladstein, 1984; Reason and Bradbury, 2001; Yin, 2003). As an early stage in a proposed action research program, informants from six coal-seam gas community groups were interviewed in order to identify their understandings, positions, key concerns and desired outcomes. This provided insight into the various forms of social engagement being expressed through these groups.

Interviews were recorded digitally or by note taking, transcriptions and notes were examined using Nvivo and displayed using Wordle diagrams (Feinberg, 2011), to identify recurring or dominant themes. Interpretation focussed on elements of social identity theory and group dynamics (Figure 20).
Groups form when groups of individuals have shared concerns and goals that cannot be accomplished individually. As social bonds form with members of their ‘in group’, in-group favouritism can occur (Tajfel and Turner 1979). Achieving a positive distinction between your own and another group leads to inter-group behaviours where any perception, cognition or behaviour is influenced by people’s recognition that they and others are members of a distinct social group (Turner 1975). In-group identification with a particular group may also not be at the will of the group member, and can lead members from other groups to categorise or label them as a part of a group that they may not necessarily value or wish to be associated with (for example a ‘hippy’ or ‘greenie’). In turn, this particular group may be stigmatised in society and, therefore, seen as undesirable to be associated with (Turner and Giles 1984). Social schemata are the assumptions that we make of a person or a group of people based on their dress and appearance (Kleine III, Kleine et al. 1993; De Weaver and Lloyd 2005).

The framework of social identity theory was, therefore, used in this study to provide a perspective of the social interactions taking place in relation to an issue. Cultural rules provide a structure for people’s behaviour, effectively channelling behaviour in some ways but not others. Schemata define similarities shared by individuals that enable them to identify as
members of a culture, community or group. Cultural identity results from and is influenced by
shared schemata and is reinforced by peer group socialisation (De Weaver & Lloyd, 2005). Social identity theory was first defined by Henri Tajfel as “an individual’s knowledge of his or her membership in various social groups together with the emotional significance of that knowledge” (Tajfel, 1974). Social identity theory argues that individuals define themselves largely according to their group involvement and memberships. In social identification theory, sociologists explain the levels of social analysis along an interpersonal to intergroup continuum, creating an important bridge between the concept of self, group membership and inter-group behaviour (Spears, 2011).

There may be a price to pay for group cohesiveness, as individuals minimise their differences. As individuals seek to maintain their group identity, this can lead to the development of stereotypical and conformist behaviours within a group, and to stereotypical perceptions of other groups. Individual identity is now defined more by the shared values and purpose of the group with which they are associated, hence these become determining characteristics of group behaviour (Turner & Giles, 1984). This ‘relative homogeneity effect’ leads to the increased likelihood of stereotyping of other groups and their members. Discrimination and categorisation of other groups and their members may become a feedback loop that can lead to a distancing from other social groups, accentuation of intergroup differences and even polarization. This occurs especially where there may be inter-group competition, or when a group feels threatened by another group, yet ironically often leads to greater cohesiveness of those members within the in-group.

The theory of realistic group conflict was based on a social experiment carried out by Sheriff (1966) that determined the key factors in inter and intra-group relations as the cooperative relationship between group members and the alignment of group goals. In-group goals and objectives will lead directly to intergroup attitudes and behaviour. Mutually exclusive goals within a group are likely to create divides that can lead to the failing and or division of the group if they fail to be resolved. If this is at an intergroup level, conflict is likely to occur between groups.

Turner & Giles (1984) see cohesion as depending directly upon motivational interdependence and mutual need-satisfaction, therefore those groups reaching set goals are going to be more cohesive than those who do not. From this, it can be concluded where there is a clear understanding of the alignment of group goals, inter and intra-group conflict is less likely to
occur and a collaborative relationship is able to form. It is also important to note that a pre-existing social identification with members of other groups is also an important factor in the development of inter-group relations (Spears, 2011).

5.4 Results: (i) Key informant views

5.4.1 Western Downs Alliance & Lock the Gate

The Western Downs Alliance began as a collection of half a dozen landholders on what is known as the Tara Estate. The key informant for this case study is a local landholder. His involvement began in 2009, when he received a letter offering him a sum of money for a number of coal-seam gas wells to be drilled on his land. He reported immediately carrying out internet research, and found information and sites describing what had already happened in the Unites States from coal-seam gas mining. Twenty minutes later, he reports, he was on the phone to his neighbours. He worked with them to involve the media, and within six weeks they had gained the interest of Channel Nine’s 60 Minutes television program, which broadcast the issue. This was shortly followed by an ABC Four Corners television program, which exposed the issue to the wider Australian public. With the help of the international environmental campaign lobby group, Friends of the Earth, the group researched the extent of coal-seam gas developments, and started screenings around the country, with the key informant travelling across Australia to present screenings of the American film Gasland (Fox, 2010), to tell the story of what was happening in his area, and to expose plans for coal-seam gas mining developments across the country.

Key concerns raised by the key informant in the interviews were: environmental damage; the impact on water and air quality and lack of landholder rights. He described what he saw to be the inadequate regulation of the industry and the coal-seam gas mining company’s general lack of engagement with the public, including what he described as an often-confrontational approach. He was concerned about what he considered to be the enormous impact on his life from the industry: the drilling rigs; holding ponds filled with produced water; truck convoys and the compressor station that continually disturbed his sleep. He reported physical symptoms arising from the stress created, a serious headache that only stopped when he was away from his home for a period of weeks – “I’ve had a constant headache for months now”. His land, he claimed, had lost all value, and he was now behind on his mortgage repayments due to devoting all of his time campaigning on this issue. In his words:
“When I’m at home it’s never silent, just this constant vibration all night long from the compressor station, and with heavy vehicles going past all day. I can’t sleep. I go away and spend all this time campaigning, and I come home and get this sinking feeling as my reality sets in. And now my land is worth nothing. One morning I was so exhausted and frustrated that I just went out on the road and stopped the traffic for an hour. Just sat in the road and stopped the trucks, cost them some money.”

Working with the Western Downs Alliance, the key informant and other members were shocked to discover “…our total lack of rights and power to stop the drilling on our land”: “we barely own our own topsoil!” Also, while researching the industry, they discovered plans for coal-seam gas mining in every State and Territory of Australia, with 40,000 gas wells to be drilled in Queensland alone. They were concerned about the leaking methane from the well heads, and had been examining the wells for leaks in light of company claims that the wells were not leaking. “We’ve tested about thirty-eight wells ourselves and have found a huge percentage to be leaking, in fact thirty-two out of the thirty-eight we tested were leaking methane,” the key informant said.

To form alliances with community groups concerned with gas and coal developments, a Lock the Gate website was developed – the Lock the Gate group is a national alliance, formed due to concerns of coal-seam gas and coal mining, with a very active website providing information and a point of contact for over a hundred community groups campaigning on these issues across Australia. The Alliance saw what they saw as wedge politics being run locally, dividing residents over the coal-seam gas industry. Some members of the community benefitted financially through the provision of accommodation and services for the rapidly developing industry, whilst others claimed to be suffering from the effects of the industry. Whilst other concerned farmers in the region formed a group called the Basin Sustainability Alliance, they were not willing to associate themselves with the Western Downs Alliance or with Lock the Gate at this point, apparently for fear of compromising their perceived social status as farmers by their association with so-called radical groups (Turner & Giles, 1984).

There has been long held mistrust between rural and green groups, largely stemming from the time of the Bjelke-Petersen premiership (Bjelke-Peterson was the powerful conservative premier of Queensland from 1968 to 1987, who sought political stability through suppression of political dissent), when the premier himself saw street marchers as a “menace who clogged up traffic”, and treated them as such (Alvey & Ryan 2006). The key informant’s perspective was that the farmers were worried about their respectability in associating themselves with...
environmental activists (‘greenies’). This is a clear example of social identity theory and stereotypical intergroup perceptions, as described by Tajfel (1974). The informant, however, did not see himself as a ‘greenie’, but as a landholder who wished to enjoy the peace for which he purchased his block of land. He dressed accordingly with what was to become his trademark red flannelette shirt, pair of smart jeans and truckies cap. Stigmatization as a greenie is common in contentious environmental issues, and can often be seen as a significant barrier to acceptance of such matters by the wider public and hence to community cohesion (Turner & Giles, 1984).

5.4.2 The Basin Sustainability Alliance

The key concerns of the Basin Sustainability Alliance were: impacts over-extraction and groundwater contamination; lack of sufficient research; Australian assets being sold off too cheaply; and the behaviour of the gas mining companies being too confrontational. The key informant argued that there are better methods for coal-seam gas mining, and was convinced that if gas wells could be properly lined then separate aquifers would not be linked or contaminated. The Alliance’s approach was to secure meetings with government officials to ensure that the coal-seam gas industry became sustainable, requiring an industry moratorium until further studies had taken place. The key informant’s views differ markedly from that of Western Downs Alliance, in that he believed that the companies should offer more money as compensation; the Western Downs Alliance does not believe that financial compensation at any scale is adequate. Despite this, his central concerns are aligned very closely with those of key informants from other groups. He brought up the point that the group could achieve more without being aligned with other groups. This latter point aligns with concepts of social identity theory: the existence of bias, perceived differences and stereotypical assumptions of the different groups can raise concerns over associations in regards to perceived status differences, and therefore influence people’s choice of group allegiance.

5.4.3 Kyogle Group Against Gas

The Kyogle Group Against Gas group is situated west of Lismore, and has approximately fifteen regular members. The key informant for this group held a remarkably different perspective of the issues and what he wished to see happen. He had heard of the locally-based organisation, Group Against Gas through word of mouth, joining it in early 2011 due to his mounting concerns of coal-seam gas mining. He is now working with, and supporting, the Group Against Gas to prepare submissions and organise events, and to work with politicians by providing his property for meetings. The Group Against Gas is also seeking improved
regulations, specifically a moratorium on coal-seam gas mining prior to thorough research into potential impacts and the entire cessation of the industry in their area. His approach seems more moderate than that of some other members of the group, in that he supports the use of on- and off-shore gas reserves in Australia. However, he also holds grave concerns regarding the coal-seam gas industry:

“You can’t eat gas, it’s that simple. They want to put the pipeline right through our most productive country ... This is all about water: our headwaters are just up the road here at Lynches Creek, and we depend upon these aquifers for the farms and for the towns.”

He stated that there had been claims by the companies that there would be no pumping stations precisely where his neighbours had already been approached: “The boring rigs follow the pipelines: that is what has happened in Queensland. It is inevitable ... the mining companies are lying.”

A second key informant for Group Against Gas had kept horses and lived on his property for thirty-one years before a gas well was placed on the other side of the creek from his property. His experience, and, he claims, that of his neighbours, was that there was no requirement for the companies to notify occupants of neighbouring properties.

“For thirty-one years, if I wish to build anything on my own land I have to put in a DA [development application] which includes a notification to my neighbours. No-body was notified at all until the well was put there. I can see it from my deck in plain view: it’s about 500 metres from my house.”

He explained how he had visited thirty properties along the road towards a neighbouring town, and twenty-nine residents had taken yellow ‘Lock the Gate’ triangles to put on their front gates (Figure 21). One property owner had made his money from mining, so was supportive of the industry. He had tried to explain the impact of having thirty wells on your property was not the same as conventional mining techniques. The informant, however, explained that although the wells do not directly use bore water, they use the spring-fed water from a nearby dam. They depend on this water for themselves and their horses.

“This issue is going to divide communities a lot more yet, as one neighbour can let them on and then you have a gas well on your boundary. In the early stages there was no education, people did not know what they were letting themselves in for. When you go out and educate yourself it is quite terrifying.”
The informant warned of individuals who may not seek peaceful means to stop the gas drilling:

“After our protests, to Council, the well was blocked off, but we received notification [at a public meeting] that they would be returning in 2013 for the next phase of production. They said to us, ‘we’re not breaking the law, this is the law’. One chap up the road says he will shoot them if they try to come on his property, and the scary thing is that he might!”

Figure 21: The Lock the Gate triangle, symbol of community protest against coal seam gas exploration and mining, along with related messages made available to the public for posting on property entrances. (Source: http://www.keepthescenicrimscenic.com/signs-and-stickers.php)

5.4.4 The Keerong Gas Squad

The Keerong Gas Squad was formed in 2010, following the commencement of coal-seam gas drilling in Keerong Valley, and has approximately twenty members. The key informant for the Keerong Gas Squad is a member not only of this group and a regular attendee of the meetings at Byron, but also of the Ngaraakwal Indigenous Association. He expressed his concerns in terms of his daily life.

“The women in Keerong were sitting in their garden having afternoon tea and the drilling rig turned up to drill an exploration well. They thought, we’d better do something about this and called in some experienced campaigners.”

“The scary thing is that we’ve had millions of years of the earth forming and now we’re pulling it all up to the surface, what is going to be the impact of
I'm worried that if we keep digging up, drilling and injecting the earth, everything is going to die. I've got kids, I basically work for the future, that’s what I do. I'm working for the animals too, and the trees.”

5.4.5 The Ngaraakwal Association

The Ngaraakwal Indigenous Association is based in Nimbin, and has a key focus towards achieving sovereignty for Australian Indigenous people. The key informants clearly have strongly-held views that relate closely to land rights issues brought to the fore by the coal-seam gas mining companies. In particular they express dissatisfaction with government handling of Indigenous affairs. The concerns about land rights are linked to the informants’ cultural understanding of the land and landscape (Figure 22). An exchange between two key informants during the interview illustrates this point.

“With the concept of land-rights in tatters, we can unite together and treaty. We are the original owners of this land, we are the custodians of the land, this is the most legal standpoint by international law. This is a time when the elders can stand up and say, yes we do have a legal right but it’s a matter of moving quickly on this before the irreversible damage is done. This is a multicultural concern, as far as we are concerned they are not allowed to get through the top 8 inches of soil.”

“That’s right. The basic thing is that if you look after country, country will look after you.”

“Nine tenths of the law is possession, and we have the greater heritage here. This is still sovereign land, the people can look after this better, we don’t need this government. The land council are the frauds, like the pimps of our people...they don’t speak for us. No-one has the right to diminish our responsibility towards the land.”

There was an overall feeling by the interviewees that there was a significant ‘selling out’ by many Indigenous peoples in this region, and in many others. As a result, they felt disempowered to manage the land within which their cultural heritage exists (Kerr, 2011).

“It’s communication (about the land) that gets everything confused. It all comes back to communication between people, and from the government. The government does not care at all, they just care about money. We need to hold the government accountable and ensure that there is increased transparency.”
5.5 Results: (ii) Observations of key events

5.5.1 The Tara blockade and the May Day Chinchilla parade (May)

Chinchilla and Tara are small towns situated four hours drive from the coast in southeast Queensland, in an area subject to rapid coal-seam gas mining development. The annual May Day parade is organised by the local Rotary Club. The Western Downs Alliance had gained last minute permission to follow the parade in May 2011 with a protest march. The protest march provided an opportunity to observe interactions between protesters and members of the Chinchilla community. The local police were present, and appeared relaxed and friendly, interacting easily with the protesters. There was a stark difference in appearance between the protesters and the Chinchilla public, with the bright colours and ‘hippy’ dress and hair styles of the protesters contrasting with the quiet, conservative public that looked on. Many local men watched from the pub as the protesters followed the annual parade.

As part of the research observations, community members were asked what their thoughts were on coal-seam gas mining. Comments were recorded, reflecting a diversity of views, with evidence for a growing sense of a community divided on this issue.
One father watching with his young family, said, “I have no faith in the mining companies, or in their providing locals with jobs, or any long-term economic benefits for our town”. He used to work for a mining company, but now felt cynical about whether their actions were for the good of the community. A young man of about 20 said that they were using a hydraulic fracturing process [known popularly as ‘fracking’] to extract gas from the coal seam beneath his land, and that, “Nothing’s happened yet, so why should we think anything’s gonna happen to our water?” A representative from Chinchilla Rotary Club stated that his view that coal-seam gas mining is in “a constant state of re-evaluation”. Several residents clearly in supported the protesters; a local resident cried out, “Keep it up, please!” whilst covering up her work badge. She described that her family land had been “devastated by coal and gas mining,” some 70 km westwards, describing virgin timber including two-metre-wide iron-bark trees that had been bulldozed against her family’s wishes, while they had been powerless to stop any of the developments. “I want people to open their eyes,” she said.

When the parade reached the Town Fete, the gates were closed to the protesters, with two mounted police behind the gate. In front of them were Rotary Club members, some holding the gate closed (Figure 23). At this time there was significant verbal conflict between the protesters and the fete volunteers. The protesters wanted to go in, and the volunteers said that they could not unless they left their banners outside. There was a half-hour stand-off between the protesters, the police and the fete volunteers, until finally the protesters dispersed. Some remained engaged in heated discussions with the police and the Rotary Club Chairman. There was a significant amount of discussion on whether the Rotary Club received any funds from the gas companies, with a prominent marquee boldly advertising: ‘Origin, Coal-seam Gas.’
What had been a cheerful protest grew sombre and confrontational as protesters were denied entrance to the fete. The presence of the mounted police and the closed body language of the fete volunteers members led to a mirroring of this behaviour by the protesters, and a feedback loop of conflict, as group goals became mutually exclusive: the protesters felt they had a right to peacefully enter, and the fete volunteers members felt they had a right to a non-confrontational fete (Sheriff, 1966).

Inside the fete, Rotary Club members were happy to talk, including the manager of the local coal power station. He was supportive of the coal-seam gas industry, and described plans for renewable infrastructure that was also to be developed in the region. A local businessman, who makes what he described as a comfortable living providing accommodation and building infrastructure for the mines, said, “We just go with the flow”. The Rotary Club members and their associates mostly believed gas mining to be a sustainable industry, with many ways to manage the produced water; to “turn Chinchilla green, to become a salad bowl for farming … they just need to get the processes right”, as one member stated. They were, however, concerned about the lack of clarity of how the salt brought to the surface with the produced water would be dealt with.
Chapter Five: Community perspectives

5.5.2 Public coal-seam gas meetings

- **The Murwillumbah protest rally (May)** Murwillumbah is a town in northeastern New South Wales, close to the Queensland border. The Murwillumbah rally took place in mid-May 2011, and was a gathering of approximately 2,500 people from communities around the Northern Rivers region of New South Wales. This contrasted the smaller crowd (400 people) marching in a similar protest rally earlier in the year (February) in Lismore.

- **9th Annual Australian Coal- Seam Gas Conference, Brisbane (June)** An anti-coal-seam gas demonstration, drawing around 200 protesters, at the hotel location of the annual Coal-Seam Gas Conference received significant and national press coverage. There was also a protest in the evening outside a conference dinner at Customs House. Figure 24 shows some of the images and messages that were projected onto the wall of the building from one of the two projectors. Few Brisbane residents were present.

- **Lock the Gate Annual General Meeting** Lock the Gate President, in his address, clearly understood the social and cultural divides that they faced within society (Figure 25). He spoke of the interactions that were needed with communities across Australia: “People like being a part of our law abiding communities and we are asking them to make a huge choice, we need to treat them with respect and humility.”

- **Casino Environmental Defenders Office public meeting (August)** The meeting at Casino, north-eastern New South Wales, was organised by the Environmental Defenders Office, with speakers from the National Toxics Network, the Environmental Defenders Office and the gas company Metgasco (Figure 26). This event was a chilling testimony to the divisions being experienced within society, most notably in this case between the company CEO, and the overwhelming majority of the
approximately 150 community members and group representatives. There was heckling from the moment the Metgasco CEO spoke, which resulted in full-scale shouting, most notably by some of the Kyogle Group Against Gas (Figure 26).

- **Arrow Energy Public consultation, Lismore (September)** This consultation meeting only allowed a selection of approximately seven community members, mostly from the Kyogle Group Against Gas, to attend. Invitations to attend an open public meeting had been rejected by Arrow in favour of this style of selective consultation. There was a noisy demonstration outside for the entirety of the meeting. One of the Arrow representatives stated, “We hear the sentiments of the public outside, it has not escaped our attention”. There were more Arrow representatives present than community representatives. The meeting was tense, although maintained a respectful tone for most of the meeting. The community representatives were smartly dressed for the occasion, yet still contrasting with the eight Arrow employees. Early on, when asked to keep questions until the end, a Keerong Gas Squad member stated, “We will ask questions when we want, this consultation is for our benefit. We are here to educate you as much as you are here to educate us.” Towards the end, the community became more emotional, unconvinced by assurances by Arrow regarding the safety of the industry. There was strong evidence of development into an even more polarised relationship. This consultation did not achieve placation of community concerns, nor provide the communication hoped for by the community members. One member of the Kyogle Group Against Gas later commented, “I couldn’t believe that scientist, she just sat there sneering at us like we were stupid. I feel like calling up Arrow and complaining. It’s just downright disrespectful, this is our lives we’re talking about here!”
Figure 24: The Customs House protest, Brisbane. (Photography, Hanabeth Luke)

Figure 25: Lock the Gate President, Drew Hutton, speaking at the Lock the Gate Annual General Meeting.

(Photograph, Hanabeth Luke)
Figure 26: Fifth generation farmer, Lesley McQueen, addressing Henderson in Casino. (Photograph, Hanabeth Luke)

5.6 Discussion

Despite the wide diversity of views recorded by groups and individuals regarding the issue of coal-seam gas (Figure 27), over the course of the research it become apparent that different sectors of the community were increasingly aligning over the unifying issue of water. It seems there has been some significant developments in Chinchilla since May Day. In August, there was a court case for the Lock the Gate President, following his arrest at the Tara Blockade. At the court house, “ordinary Australians are banding together in the quest to save our best prime agricultural land ... Farmers, doctors, greenies, urbans and blockies gathered to cheer [the president], wave placards and sing along to John Gordon’s version of This Land is Your Land.” (Brown, 2011). The Lock the Gate group has the potential to become a considerable organisation, if it is able to successfully work with a wide variety of groups and share its skills and strategies. What remains to be seen is how the well the groups will work together, and how much the planned actions will manifest in reality.
The issue that surrounds the focus of this study spans the rights to land and water, an issue that appears to reach from the heart of communities towards questioning the foundation and nature of the capitalist system. This focus appears, however, to draw of other more tangible and directly relevant internal and external factors, such as social disadvantage of the region, tensions between what is acceptable resource use, land tenure and access, environmental awareness and patterns in the region, and dynamics between different local and regional social groups. Such external factors need to be considered in contextualising the complex views, beliefs and emotions expressed by the participants in this study. The concerns recorded here, and expressed in various ways, appear to reflect people’s fears that their basic human needs – whether expressed in terms of social capital, a future for their children, land rights or environmental quality – may not being met in the future. While the evidence records immediate responses, and may be considered to represent short-term reactions of people (on all sides of the issue) on the run in the immediacy of an event, they provide an interesting example of how social tensions can readily rise, be reinforced, and become drivers of behaviour. Nevertheless, the evidence for public expression of emotion and conflict indicates the potentially significant psychological and social effects emerging from this issue.
There are already clear divisions in affected communities, as those who either support the industry or who are financially benefitting become polarised from those who do not wish to see the industry develop. Key concerns expressed relate to power gradients between industry, government and community. Common themes in the interviews were mistrust of mining companies and governmental bodies. People are scared of not having access to clean water now and in the future, as they understand corporations and governments to be making decisions that can affect Australia’s water supply indefinitely. For this reason, a wide range of disgruntled individuals are uniting on this issue. Large sections of communities are coming together to protect what they consider to be their basic human right to safe food and water. In doing so, this protest movement appears also to be reacting against what it sees as the status quo – the socio-political view that privileges the supply of jobs and financial benefits over care of the environment that supports human populations. In questioning a view that is often termed ‘realist’, those who are standing up as protesters, to protect their community, groundwater and environment, become regarded as ‘idealists’ under the current dominant paradigm. This appears to provide an empowerment for community members. Yet, here a city-bush divide developed. For isolated rural communities (and city dwellers that identified with them), coal seam gas appeared to provide a rallying standard in the minds of rural constituents, to protect the rural idyll and their way of life. ‘Tree changers’ and families with multi-generational connections to the land were concerned with maintenance of the status quo. Conversely, for city-based decision-makers, investment and resource access became a major driver. While this debate raged, many rural communities (based in small towns) were concerned with issues of employment, housing, health and equity, and began feeling increasingly marginalised from having missed the benefits of the mining boom. The result was growing inter-group identity confusion in rural communities.

A real issue for researchers and policy makers is to define the concept of how to identify rural Australia. Is it defined by an economic dependence on agricultural production? Is it a physical manifestation driven by proximity to centres of certain population sizes or a division into four broad categories: urban, regional, rural and remote (Cameroon-Jackson 1995)? Or is there a strong parallel with the more esoteric concept of how, and with whom, groups define their identities. The paradox is that the same debates occur with regard to the concept of how individuals and groups define their aboriginality (Lloyd, 2005; Libesman, 1995), and the answer is probably the same: it is multi-dimensional and depends on context. Farmers in the New South Wales Hunter region, for example, quickly aligned with the conservation
movement to battle the coal seam gas exploration and coal industry expansion. On the other hand, farmers in Queensland, who identified as traditional farmers aligned with traditional animosities in discourse between the old National Party of Bjelke-Petersen and the political left, rejected collaboration in favour of direct lobbying of parliamentarians.

The individuals and groups involved in this study appear to reflect the growing concerns of, on the one hand, an Australian public rapidly losing its faith in its governing structure (Irvine, 2011), and, on the other, a fragile dependence of our capitalist system, a system dependent on already strained natural resource base (Dunstan, 2011; Roubini, 2011). The concerns broached in this study highlight questions of the principles, foundations and perceptions of science and research as is applies to industrial extraction of natural resources. Our record also illustrates the potential independent community groups have, to question the role of scientific enquiry, in a society where governmental decision-making tends to lean towards economic outcomes (Klan, 2011).

5.7 Reflection on Chapter 5

In Chapter 5, sub-question 1 was addressed: *What are drivers of social positioning for contentious land-use change, at the time the social movement began?*, finding that motivations, for some of these early activists and key informants, related principally to concerns around water and procedural justice. For the Indigenous Australians interviewed, as well as non-Indigenous activists in the Norther Rivers, deep connections to ‘country’ were discussed, relating to a responsibility to look after the land for present and future generations. In the Western Downs there were slightly different drivers. For example, the activist and non-activist landholders shared some concerns, such as the potential impacts on water, and the “confrontational approach” of CSG companies. Another driver emerging from this chapter was the lack of available information during the early stages of CSG development: “There was no education, people did not know what they were letting themselves in for.” Both mentioned a lack of research relating to environmental impacts: a principle aim of the key informant from the BSA was to have improved scientific evidence that water sources would not be impacted (he was in the cotton industry, well-known to have significant water requirements). One key-informant saw the potential for co-existence and financial compensation, which was not the case for Pratzky, who was already reporting direct impacts on his health and wellbeing.
Responding to sub-question 2: *How can intergroup dynamics form barriers to progress?* Social identity had a crucial influence on group formation. While concerns were shared between groups, the farmer viewed the activists through a stereotypical lens: they were outsiders, and it was better not to associate with them. Fundamentally different patterns were evident in New South Wales (e.g. Colvin, Witt & Lacey, 2015). The moment that Northern Rivers residents became concerned about gas-drilling, the first person they called was an experienced activist, indicating that from the very beginning, activists were respected in the community.
Chapter Six: Improving Conservation Community Group Effectiveness Using Mind-Mapping and Action Research

Figure 28: Locating Chapter Six within the thesis structure

Reproduced from: Luke, H., Lloyd, D. J., Boyd, W. E., & den Exter, K. (2014). Improving Conservation Community Group Effectiveness Using Mind-mapping and Action Research. Conservation and Society, 12, 43. The contents of this paper are drawn in part from data collected and published in my honours thesis (Luke, 2011), however have been subject to extended and new analysis in the context of social license. The focus group research aimed to answer the following sub-questions:

Sub-question 1: What are drivers of social positioning for contentious land use change, for individuals within the group, and for the group as a unit?
Sub-question 3: What is the relationship between social positioning, group dynamics and group purpose?

6.1 Abstract

This paper examines a case study where mind-mapping is used within an action research project to foster improved community group effectiveness and decision-making. The case study focuses on the social dynamics experienced during the formative stage of a community action group in Byron Bay, New South Wales; one of a network of such groups, formed to ensure that sustainable environmental management practices are followed in proposed coal-seam gas developments. In the context of examining systemic social interactions within such a group, the study recognises both the importance of communication and the susceptibility of individuals to certain behavioural patterns. Negative emergent norms led to excessive behaviours that threatened to hinder effective communication and group behaviour. Use of mind-mapping countered this negative tendency, focussing the inherent positive qualities of the group, and thus enabling more efficient decision-making. Shown to be an effective tool for overcoming communication barriers and increasing cohesion; its power lies in maintaining process transparency, removing power-structures and ego-centric personal barriers, hence facilitating effective communal knowledge sharing, clarification, idea crystallisation, and planning.

Keywords: non-linear communication tools, mind-mapping, coal-seam gas, social change, community action, group dynamics, action research.

6.2 Introduction

This paper demonstrates the use of mind-mapping in order to improve decision-making and group effectiveness. The case study focuses on a community action group formed as a result of a contentious land-use debate regarding coal-seam gas developments. Such natural resource management issues are becoming increasingly contentious as decision-makers struggle to balance demands for economic development with associated environmental risks (Suzuki and Dressel 2003; Reid et al. 2010), creating challenges for sustainability. Civil society and citizen participation in decision-making has been recognised as key to sustainable development (Bäckstrand 2003; Lafferty 2004). Urgent calls are being made for the development of mechanisms that allow science and society to better address decision-making and citizen needs at global, regional, national, and local scales (Reid et al. 2010), including improved
communication between groups of different cultures, languages and nationalities (Kumasi et al. 2010). Environmental managers and policy-makers need tools to assist in weighing community input alongside expert advice in assessing implications of policies and management plans (Fraser et al. 2006). Participation in community groups facilitates community cohesion, forming a nucleus for clarifying community values and needs, and potentially encouraging social action (Bhatt and Tandon 2001). However, despite good intentions, the development of well-functioning community groups can be difficult, and may need outside support. This paper describes one approach to assisting such development, using the example of a community group addressing the natural resource management issue of gas industry drilling, describing the use of mind-mapping within an action research context to help the group define its purpose, structures, and aims.

The research focuses on interactions occurring within the case study of a community action group formed in Byron Bay, Northern New South Wales, Australia, under the banner of a growing social movement concerned with the impacts of coal-seam gas exploration and production on natural water systems (Lloyd et al. 2013). The unifying issue of water within this particular social movement is drawing together people from diverse sectors of society. Groups that form under such circumstances are a rallying point for a variety of personalities from differing backgrounds, offering a range of skills and experience in support of their unifying cause. However, in order to be effective in their aims, these individuals are required to form harmonious and effective community groups and networks, and achieving this may be difficult. Barriers to communication, such as hyper-narcissistic behaviour, unresolved conflict, and unclear focus, can leave individuals feeling disillusioned and alienated by the group processes (Keen 2003). Here we demonstrate one way to overcome this concern, and thus enhance the effectiveness of a community engagement with natural resource management through involvement in a community action group.

Evidence from the cognitive sciences (Vekiri 2002) shows that visual displays contribute to the enhancement of learning and provide support for the use of mind-mapping in enhancing, retaining, and improving knowledge. Used as a communication tool, mind-mapping can contribute to the empowerment and social learning that can take place for individuals and groups (Lloyd et al. 2010). This paper, therefore, explores the use of mind-mapping as a non-linear tool for improving community group effectiveness and engagement in a natural resource
management issue, hence helping to set the community on a pathway towards effective social change, providing a valuable case study for the application of such a tool in this context.

The background to this study lies in the importance of growing and widespread acceptance of the concept of community consultation throughout national and international development sectors since the 1970s. Community participation has been defined as the collective efforts at increasing and exercising control over resources and institutions by groups previously excluded from control (Kumasi et al. 2010). For this to be successful, community groups need to be operationally successful, especially where there is a danger that a top-down approach towards change and development can fail to incorporate factors of local significance, thereby alienating local communities from the decision-making process (Suzuki and Dressel 2003; Clapperton and Wolfram 2007; Pickering and Jewell 2008; Brown 2011). Inadequate community engagement is a primary governance problem contributing to social conflict around land and resource management issues (Hindmarsh 2010), and even where the consultation process successfully gathers data from stakeholders and the community, it is rarely involved in initial planning or in deciding upon future research activities (King 2000).

As a result of these concerns, there is a shift internationally towards more participatory or bottom-up approaches being integrated within the consultation process to give greater credibility to sustainable environmental management practices (Fraser et al. 2006). Relevant stakeholders need to be systematically represented, and better tools and frameworks developed for this purpose (De Weaver and Lloyd 2005; Lloyd 2005); Reed (2008), for example, argues that stakeholder participation needs to be underpinned by a philosophy that enables empowerment, equity, trust, and social learning to take place. Effective community engagement helps to improve the quality, legitimacy and accountability of decisions, and also can lead to social learning (Huitema, Cornelisse et al. 2010). The social learning that can take place during community group processes can positively influence both stability and change in a societies’ ecology. Community groups can provide an important space for information sharing, raising of concerns and synthesis of ideas (Lebel et al. 2010), while it is known that the best type of learning occurs over time in real life contexts, thus emphasising the development of capacity for effective action in the setting that matters to the learner (Senge et al. 2000). There are, however, a limited number of mechanisms or frameworks available for public services to involve the public (Haggith and Vanclay 2003; McIntyre-Mills 2010).
The neuroscientist Greenfield (2000) stresses the need for awareness of the different metaphors for knowing. The more connections that we are able to make within the brain and across different areas of knowledge and different paradigms (social, economic, and environmental), the more conscious people can become. This has implications for approaches to science, the way people live and run governments, and for ethics (McIntyre-Mills 2010). To empower individuals and groups in the community and make informed choices to steer governmental decision-making processes, the general community and scientific communities need to align more closely; to foster social learning on the scale needed to bring about true sustainability for our society, whilst the idea of science as purely rigorous, quantitative, statistically based and objective, needs to shift towards a more integrated approach (Greenwood and Levin 1998; Reed 2008). Action research takes the view of scientific enquiry as a form of human action that involves creativity, innovation, ambiguity, complexity, group dynamics, and many pragmatic concessions to the limitations imposed by the resources and time available. Used in this way, the processes of action research and action learning can be used effectively to change individuals, groups and organisations (Swepson et al. 2003).

Action learning (or action research) is typically characterised by the mutuality in which knowledge springs from action. Dick (2000) regards action research as a family of processes that allow for a combined pursuit of research, action, change, reflection, and planning. He emphasises the importance of alternating action and critical reflection within a spiral process resembling that of Kolb’s (1984) experiential learning cycle. The key aim of action research is to establish a learning community within which the involved participants are able to control their own destinies more effectively, and can keep improving their capacity to do so whilst remaining conscious of the learning process (Martin 2001). Action research acknowledges that the world is more complex than our apprehension of it can be, and thus we will always be approaching this complexity through a series of imperfect compromises (Greenwood and Levin 1998).

The positivist, reductionist approach to scientific research breaks a system down into its various components in order to identify cause and effect relationships between simple units of study. However, applied in a social context, this can lead to the separation of individuals or groups from the seemingly chaotic patterns and rhythms of life (Flood 2010). System dynamics or systemic thinking underpins action research with the idea that the whole is greater than the sum
of its parts. Before describing the application of this approach, it is important to consider the role of social activist groups and, especially, the dynamics within such groups.

6.2.1 The role and dynamics of social activist groups

Social action is one segment of a wider, complex set of relationships between people and institutions, and has been argued to be a symptom of resistance to the social domination of capitalism (Guptara 2010). Social movements are socially-collective actions in which the general population is alerted, educated, and mobilised to challenge power-holders; and address and attempt to redress social issues (Moyer 2001). Such a definition places engaged citizens at the core of the democratic process within what is essentially a struggle for power, raising the expectation that people can, and should, be included in decision-making processes in all aspects of public life (McIntyre-Mills 2010). This provides a role for all those who wish to participate in the process of turning festering social and environmental issues into a citizen demand for change, whilst developing creative solutions that are more appropriate for society as a whole (Moyer 2001). Castells (1983) brings the focus of social movements straight back to community, noting that where people feel unable to control the world, they tend to shrink the world to the size of their community.

Aggregating people can pool knowledge and ideas on a common purpose, share the workload and allow for the specialisation of tasks, supporting each other, and maintaining momentum on a task where one person may not. A community group may be a homogenous collection of members with clear boundaries, or have much wider ranging personalities and blurred boundaries; social movements far more typically consist of groups of the latter description (Shields 2000). Opposition to social movements may come from many directions, including the industry being challenged. However, one of the greatest challenges comes from the social dynamics of the movement itself, which is the focus of this research.

A useful way to consider group formation is to view groups through Tuckman and Jensen’s (1977) model of four-stage development, often referred to as forming, storming, norming, and performing (Tuckman and Jensen 1977). The storming stage is characterised with the potential for conflict to occur as conformity decreases and clarification of values and goals is sought. In the final stage, the group becomes a high performing team that is able to work out collective goals, issues, and difficulties with increased loyalty, support, cohesion, synergy, and high team morale. Group members share roles and information freely and high levels of communication link increased productivity with individual satisfaction. Moreland and Levine (1982) elaborate
on the stages of group formation as collective norms develop. From entry to group socialisation, individuals are shaped by the group and the group is in turn shaped by individuals.

Decision-making can take longer in teams, and egocentric behaviour, such as power plays where people seek to devalue others’ point of view or manipulate a situation, can seriously hinder team success. Groups can lose focus and be criticised for coming up with wild, impractical proposals and waste time discussing the viability of such options (Hensey 2001; Keen 2003). In fragmented and/or politicised circumstances, a group situation can become particularly volatile, where a butterfly effect of sorts can occur as unintended consequences of individual actions can build up and manifest in unexpected ways (Flood 2010). Many key factors can contribute to an effective team (Gladstein 1984; Brannick et al. 1997; Hensey 2001; Moyer 2001; Keen 2003; Baninajarian 2009); those most commonly stressed in the literature are the alignment of goals and objectives, structure, leadership, and communication.

Effective teamwork is able to improve information flow and increase member learning and skills, which lead to decision-making based on a broader framework of knowledge, ideas, and perspectives. Deliberate efforts to develop teamwork can directly improve effectiveness, especially those groups which consist of powerful and impatient personalities (Buchholz and Roth 1987; Hensey 2001). Buchholz and Roth (1987) state that the key to producing a synergistic group relationship is achieving the full commitment of individuals through collaborative decision making, meaning that they are all focussed on working towards one agreed direction or purpose (Weissglass 1990; Senge et al. 2000; Stankey and Allan 2009).

6.2.2 Harnessing and maintaining productivity using non-linear communication tools

Communicating new and varied concepts between and within different community groups requires recognition of a variety of learning styles and tools to aid communication for actively engaging individuals. When dealing with the complex interactions of dynamic social systems, visual or non-linear communication tools are often able to more adequately express information and allow social learning to take place (Lloyd et al. 2010). There are several related non-linear communication tools, with the common feature being the use of diagrammatic relationships of various kinds. Pictures and structured diagrams are thought to be a more clear and comprehensible way to display complex topics. Group model building, concept mapping,
mind-mapping, and argument mapping are variants of these tools (Dwyer and Stave 2008; Davies 2010), although some are used interchangeably.

Mind-mapping has been described as visual, non-linear representations of ideas and their relationships (Biktimirov and Nilson 2006). The idea is to write in a visual language that follows the brain’s thought processes, and is therefore easily understood and processed by the brain (Akinoglu and Yasar 2007). Goodman (1986) stresses the importance of designing work settings that are brain compatible, not brain antagonistic (Jensen 2007). Hart (1975) regards the brain as a special environment where information is organised into patterns. In order to break away from the conceptual constraints of old ideas, there is a need to take a wide view of an issue or problem. This can then be creatively defined by using objective judgement to select priorities and form a plan of action. Buchholz (1987) describes creativity as the breaking of established cognitive connections whilst making novel connections, which is exactly what the skilled use of a mind map can achieve.

A typical mind map starts with a central theme from which information branches out into nodes that use key words, colours, and graphical representation (Buzan and Buzan 1996). A hierarchy of associations can then be built as those nodes branch out into a secondary order, and from this further links can be made. Mind-mapping is regarded as a form of structured brainstorming that shows the way ideas relate to each other and is a useful tool for expressing and interpreting complex environmental and geographical concepts and systems (Åhlberg and Ahoranta 2002; Lloyd et al. 2010).

Mind-mapping is useful for promoting collaborative and active learning processes for people with a variety of learning styles, and as a tool for analysis and note taking (Lloyd et al. 2010; Jones et al. 2012). In the context of problem-solving, decision-making processes and also in education, mind maps are used to form, visualise, conceive, classify, and structure thoughts for improved performance (Farrand and Hussain 2002). The mind-mapping tool is able to direct people towards convergent and divergent thinking, helping to build ideas or clarify a problem by visualising general frameworks and/or details of chosen topics (Akinoglu and Yasar 2007). Being able to view all the components of a mind map simultaneously aids people to make important connections between existing conceptual understandings and new knowledge (Buzan 2002; Fender 2003; Akinoglu and Yasar 2007; Lloyd et al. 2010).
In order to achieve solid strategies and action plans, it is important to facilitate dialogue between group members, which can bring to the surface relevant ideals and concerns from as deep a level as possible. A clear set of group values and priorities can then be compiled to align a group on a path of action where shared resources can be managed more sustainably (Flood 2010). Two contrasting activities play a vital role in generating creative power: the divergent process is a brainstorming scenario for generating as many options as possible whilst developing and linking ideas. The convergent phase of creativity can then further develop a practical solution. A thinking process such as this is useful for defining both problem and solution, since once a problem has been clearly defined it is much easier to generate relevant solutions whilst not limiting conversation to one topic when considering alternatives (Goodman 1986; Buchholz and Roth 1987).

When people interact with each other, there can be a very specific set of information that is shared with others (Luft 1969). When individuals gather together, the information that is or is not disclosed by individuals can have a significant impact on trust and has the potential for creating disharmony or conflict. A dark side of human nature can manifest in a variety of ways such as hidden agendas, victimisation, self-interest, and corruption. Meanings behind such a dark side can be largely unconscious, with motives such as uncertainty and anxiety caused by a whole range of reasons from fears of rejection, lack of skills and knowledge, and/or the need for recognition. Our existential sense of insecurity can drive us to anxiety amongst the purposeful activities associated with work and life (Hase et al. 1999). If opportunity is provided for group members to rapidly and transparently communicate who they are, whom they represent and their goals and motivations, then there is much better chance of group cohesion.

Haggith and Vanclay (2003) used a non-linear communication tool to develop a sustainable management plan for the communal natural resources of a Zimbabwean tribe. The success of this study demonstrates that there is greater potential for social cohesiveness when group aims are aligned for the common good. Individuals are far more likely to behave in ways that benefit the group rather than themselves when they have helped to define collective aims through a transparent process (Buchholz and Roth 1987).

6.3 Methods

The systemic thinking perspective of action research has been used as the epistemological basis for this study, which seeks to describe and understand social interactions occurring within the
group (Flood 2010). Knowledge gained through this process is specific and local, whilst taking as holistic a view as possible (Greenwood 1999). Researchers must recognise themselves as agents of change and key instruments of the study, with their role being to design a process that can produce the relevant information that can lead to action and subsequent improvement (Martin 2001). The core of action learning (Swepson et al. 2003) is the researcher’s ability to ask fresh questions and to mentor people to find their own answers. Once the initial planning stage is over, the role of the researcher is to guard the process and critically reflect on their own strategic actions, hence continuing the action research cycle which in turn leads to the uncovering of new interpretations and perspectives (Martin 2001). Figure 29 illustrates the action learning cycles developed in this study.
Figure 29: The two action research cycles of the study, showing how data gathered from the initial phase of observations and interviews was used to develop the second phase, where mind-mapping was adopted to enhance group understanding, focus, and cohesion.

The use of a case study method was chosen due to the intention to examine interactions not easily distinguishable from their context, being an integrated approach of enquiry that uses unique examples of social situations as the basis of deep description and analysis, to gain insight into questions of how and why a social process or phenomenon works (Yin 2010). Multiple sources of data have been used to increase the richness of contextual understanding.
Chapter Six: Improving Conservation

(Gladstein 1984; Reason and Bradbury 2001; Yin 2003). In this study, the specific case study is of the Byron Bay coal seam gas (CSG) community group. At the time research started, the most active social movement in Australia was forming in relation to potential impacts of CSG exploration and production on water resources. The movement began in 2010 in Tara, a small township in southeast Queensland (Australia), when several land owners carried out research following requests by a gas exploration company to carry out works on their land. From this, significant concerns arose regarding the sustainability of the mining techniques used. The Lock the Gate Alliance formed out of this initial group, attracting the support of many existing environmental groups. As awareness of the issue grew, hundreds of groups have since formed across the country. The study focuses on the intra-group dynamics of the Byron Bay community action group, Byron Saving Australia’s Natural Environment (BSANE), following an invitation from a group member playing the gatekeeper role.

Where some case studies may focus on homogenous groups who have a great deal in common in terms of age, gender, economic, socio-political, and cultural background, the BSANE group was a non-homogenous group, representing a wide cross-section of the local population. Of approximately twenty-five group members, just over half were female. The group was comprised of individuals from a wide range of educational and socio-political backgrounds, with ages ranging from sixteen to near seventy. About twelve people were local landowners of land covered by Arrow Energy’s Petroleum Exploration Licence 445, four of whom were farmers. Two individuals were in the final years of high school and three attending university. Other occupations included teaching, hairdressing, information technology, marketing, and hospitality, with several individuals having businesses of their own in catering and real estate. Although all spoke good English and most were born in Australia, including several indigenous Australians, there were also a number of Australian citizens originating from the United Kingdom, South Africa, and the United States. One group member had close family working in the Queensland CSG industry, and at the time of these meetings many in the group had direct or indirect investments in the CSG industry through their superannuation (retirement) funds (however this later changed). Meetings took place in the centre of Byron Shire, although attendees came from at least seven of the surrounding townships.

Seven BSANE meetings, two to four hours long, were observed prior to a mind-mapping workshop. During this phase, a process diary and mind maps were used by the researcher as a data collection technique to answer the question: “What social dynamics are aiding or
preventing success?” Gladstein’s (1984) model of task group effectiveness provided a theoretical framework for the critique of meeting processes and the identification of barriers to group effectiveness (Yin 2003), discussed in the process diary. This data was then used to develop the next phase of the project, where the use of mind-mapping was tested as an intervention for improving group effectiveness. A semi-structured mind-mapping interview technique was used to gauge viewpoints of group members, with a focus on key concerns and aims. This qualitative data was then combined with contributions made during group sessions in order to differentiate between individual and group thought processes in preparation for the mind-mapping workshop.

To measure group effectiveness, Straus and Corbin’s (1990) grounded theory for qualitative research stresses the necessity of the development of a set of rules that the decision making process can follow for the coding of behaviour. Dickenson and McIntyre’s (1997) framework provides a clear scientific pathway by which team performance measures can be derived. The methodological process is: Identify a relevant model of team performance; use the model to identify variables to be measured; identify observable attributes for each variable; identify observable behaviour for each attribute; and develop decision rules and a measurement scale for the coding of each behaviour. The Gladstein model was chosen as a model of group effectiveness, as it takes into account a wide variety of task groups in different contexts (Gladstein 1984). Gladstein applies the findings of laboratory experiments and human relations training to on-going organisational work teams and groups; separating variables that contribute to task group effectiveness into inputs, processes, and outputs. Inputs at the group level include group composition and structure, such as clearly defined roles and goals. Group process includes communication, strategy development, conflict resolution, boundary management, and skills-based role allocation. Outputs are performance and satisfaction (Gladstein 1984). The area of interest for this study comprises the process variables, but also considers the impact of input variables, as in a laboratory setting these variables would be controlled. The characteristics exhibited by successful teams were categorised according to the Gladstein (1984) model. This provides a detailed framework, following the same process utilised by Dwyer and Stave (2008) to develop a matrix to be used by the researcher in the analysis of observations, and from this, the extent to which the group exhibits desired behaviours could be scaled.
6.4 Results

6.4.1 Group dynamics

The observation phase enabled the researcher to gain an understanding of group dynamics and to provide a valid critique of group process. Meetings consisted of a random association of individuals from varied cultural backgrounds, ages and professions, with the group appearing to be in the early formation stages (Hensey 2001). Lengthy discussions covered a diverse range of topics and divergent individual agendas were linked to key group aims; few individuals did most of the talking and no obvious process was followed. Benefits of this approach were that people felt comfortable discussing a wide range of topics. Listening, however, was not always of a high quality. Social norms that developed during this stage were for periods of lengthy monologues, interjections and parallel conversations (Buchholz and Roth 1987). Strong ideas regarding views of the group role were apparent, but there was no clear attempt to integrate these or move them forward. No action points were clarified, and there was no strategy to check or feedback on those points. The meeting often focussed on problems of a global scale; or on perhaps what Keen (2003) may call wild, impractical solutions.

No one felt that it was their role to take charge initially, and the group did not accept one individual who tried, possibly due to an autocratic leadership style. Over several meetings, group size fluctuated from 8 to 25, and different people were writing agendas, with facilitation providing little leadership, and meeting purpose often being unclear (Gladstein 1984; Buchholz and Roth 1987). Some meetings experienced conflict, specifically between strong personalities, with one individual marching out mid-meeting. No clear structure or process was followed; very little was put to a vote, and there was no sum-up or meeting close. Instead, conversation continued for up to four hours until members were literally exhausted and would start to leave one by one (Gladstein 1984; Senge et al. 2000). Group members were clearly experiencing frustration of this high level of unstructured conversation and inability to gain traction as a group. Despite this, some roles were defined prior to the workshop, hence the Chair started to put certain processes in place including meeting agendas. Five individuals from the group were interviewed regarding key concerns, shown in the Wordle graphic in upper Figure 30. Interviewee responses regarding views of the group’s role and aims (shown in lower Figure 30) highlight strong themes relating to community and people coming together. Each time a word has been mentioned by interviewees it is amplified; hence the larger words show common themes that have arisen from the interviews.
6.4.2 Mind-mapping for improving group effectiveness

Given this record of concerns, roles and aims, the researcher was invited to implement a mind-mapping workshop, to assist in group development. This provides an opportunity to test mind-mapping as an intervention for improving the effectiveness of a group such as BSANE, drawing from the information gained through previous phases of the action research process. The principle aim of the workshop was to answer the question, “Can mind-mapping be used to improve community group effectiveness?” Its objectives were to: clarify concerns; establish overarching goals (to create purpose); gather ideas and knowledge; form smaller task groups (Wheelan 2009); prioritise potential goals and actions; carry out a skills audit to help establish roles within the sub-groups; and to develop a specific plan of action.

![Wordle word cloud plots](image)

*Figure 30: Wordle™ word cloud plots, displaying the relative importance of ideas and concepts expressed by participants regarding the development of the BSANE group, based on analysis of interview transcripts; the clouds give greater prominence to words that appear more frequently in the source. These were later used to draw common themes with the mind maps developed by the group. Top: concerns voiced by interviewees. Bottom: views of the group’s role and aims.*

Key behavioural processes used to measure group effectiveness are task behaviours, identified from the observation stage of the BSANE group. The ability of the group to focus on the task
in hand, form clear aims and objectives, and to use time effectively, were the chosen units of analysis. A pre-test gauged individual perception of group effectiveness and previous experience of mind-mapping, and an evaluation sheet provided a post-test for feedback following the workshop. The workshop was voice recorded, and evaluated by the researcher for a comparison to be made to group functioning in previous meetings. Group effectiveness was recorded as scaled values at each meeting, using set definitions of effective group attributes adapted from the Gladstein (1984) framework; this was a similar assessment process to that used by Dwyer and Stave (2008). The scores allocated by the researcher were explained and justified in the process dairy. A top score given for effective communication, for example, indicated that group members exhibited active, effective and open communication, all individuals were practising both listening and talking in discussions that were rich in substance, and diverse views were valued and sought (cf. Dwyer and Stave 2008).

The session commenced with a brief introduction to the use of mind-mapping and completion of the pre-tests. The first mind map was compiled showing diverse concerns. However, issues related to the CSG industry were agreed to be the focus of the workshop, hence a second hierarchy was developed around the word fracking, (Figure 3). The second mind map was used to brainstorm group goals. The mind maps had a skeletal structure that provided guidance, whilst allowing the group to make the majority of contributions. Clarification of the overarching objectives created a focal point, kick-starting their momentum in a single direction (Baninajarian 2009).

The final map (lower Figure 31) had a node for each of the four 'actions' sub-groups – fundraising, communications, research, and administration. To each of these, the whole group made contributions. A talking stick (a group management device by which an object is passed from person to person, allowing only the person holding the object to speak) was passed around the group, used to ensure that each individual made at least one contribution, although it was later discarded when found to disrupt the flow of thought. Certain social dynamics were apparent, as one member in particular kept trying to hurry up the process, then would speak at length. Such behaviours were, however, minimised, as the mind-mapping process was able to gather and share the knowledge of the group in a short space of time.
Figure 31: The mind maps generated at the BSANE workshop depict the group’s communal understanding of concerns, goals, and actions. These maps were able to unite the group with a common purpose, from which point they could develop more in-depth strategies for action.

The group then split into four working groups. Almost all group members appeared engaged, responding enthusiastically to the activity, as they designed their mind maps in their own individual styles (although there was one notable exception of two new arrivals who spoke loudly between themselves). In the allocated time, the working groups had now completed a skills audit, using their own mind maps, and two of the four groups had developed strategy for achieving a chosen goal, one being how to organise a fundraising event. Writing down their skills was powerful for group members. One participant commented, “It felt so empowering to write down my skills in front of the group and share what I can do”.
The group re-joined for the workshop for a summing up, and evaluation sheets were completed. The members appeared to be already working better together and building momentum; group motivation has demonstrably improved (cf. Jones et al. 2012). Three individuals confessed that they had been disillusioned with the progress of the group, but were now feeling much more positive: “This was my last meeting mate, if this carried on like the others, I was out. Now I feel like we have a direction and unity, Thank you!” Just as the meeting finished, the two newcomers who had not participated, started arguing, shouting and swearing. The group pulled together immediately to tell them that this had been their most productive and positive meeting yet, and that they were not to ruin it. They were then encouraged to hold hands with the whole group who chanted a positive affirmation three times, followed by three oms (an incanted sound often used in meditative ceremonies to express respect for the universe; it is often adopted in communal activities in this region as a closing ritual for meetings and gatherings).

6.4.3 Measures of group effectiveness

Gladstein (1984) scores provide numerical assessment of effectiveness of group meetings, before, during and after the mind-mapping workshop (Figure 32). Whilst resource availability and commitment to the cause remained relatively constant throughout the process, there is a marked improvement in all other areas, including communication, conflict resolution, role allocation, project management, collaboration and decision-making processes, indicating a strong improvement in group effectiveness both during and following the workshop, when the group continued to develop process, structure, roles, and meeting protocols. The greatest improvements evident were that of project management and group structure, which were developed and maintained in meetings following the workshop.
Participant evaluation of the mind-mapping activity is important, since it reflects the immediate response of participants to this stage of the action research cycle (Greenwood and Levin 1998). Pre and post-testing of the group’s perceptions of the effectiveness of mind-mapping provided insights into its effectiveness. The pre-test group showed a diversity of views (Figure 33): common themes comprise concerns regarding time management, and neutrality regarding goals and objectives. It is interesting to note that a significant number of participants believed that an adequate process was being followed, in contrast to the researcher’s observation that there was little or no process in place at that time. The prevalent tendency towards neutrality changes in the post-tests, where participants unanimously agree that the mind-mapping workshop had aided formation of clear goals and focus. Participant comments and the Gladstein scores support this. All respondents gave a positive response to the mind-mapping workshop in the post-tests (Table 1).
Figure 33: Results of testing the BSANE member perspectives of the groups’ effectiveness prior to the mind-mapping activity, especially demonstrating the relatively low level of member agreement on goals and objectives.

6.5 Post-study reflection

Much was achieved in the hour-long workshop, despite time limitations and the unsuccessful use of a talking stick. The mind maps created were typed up by a group member, which indicates that some may favour a more linear thought process, but also shows the ease at which the non-linear diagrams can be converted to linear form (cf. Lloyd et al. 2010). The workshop was well timed to aid group formation in this case, and could be applied to many other groups during early formation stages to foster movement towards cohesion. Various issues were discussed at length prior to the workshop, which may well have been an important factor in allowing for individuals to air their diverse views, providing a fertile ground for group cohesion.
Table 1: Participant comments, based on testing of the BSANE group’s perspectives following the mind-mapping workshop.

<table>
<thead>
<tr>
<th>Post-Test Question</th>
<th>Participant Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The mind-mapping strategy helped the group to frame a clearer focus?</td>
<td>• Good foundation</td>
</tr>
<tr>
<td></td>
<td>• The process helped crystallise/create group</td>
</tr>
<tr>
<td>2) The mind-mapping strategy helped the group to frame clearer goals?</td>
<td>• Goals were clearly mapped</td>
</tr>
<tr>
<td></td>
<td>• Great insight</td>
</tr>
<tr>
<td>3) Do you think mind-mapping helped to frame clear objectives/targets?</td>
<td>• Brainstorming helps</td>
</tr>
<tr>
<td>4) What do you like about the mind-mapping approach?</td>
<td>• Social, communal, community conscious process</td>
</tr>
<tr>
<td></td>
<td>• One person focussing all on one piece of paper!</td>
</tr>
<tr>
<td></td>
<td>• It feels active</td>
</tr>
<tr>
<td></td>
<td>• Rapid organisation</td>
</tr>
<tr>
<td></td>
<td>• Flow</td>
</tr>
<tr>
<td></td>
<td>• It put all our words and thoughts on paper, making it all the more realistic. Also, if made easy to access, people can look back and be reminded as to what to do or what has to be done</td>
</tr>
<tr>
<td></td>
<td>• Set out all clear like a map</td>
</tr>
<tr>
<td></td>
<td>• All targets can now be looked (at)</td>
</tr>
<tr>
<td></td>
<td>• Clarity from the process</td>
</tr>
<tr>
<td></td>
<td>• Visual and overall picture</td>
</tr>
<tr>
<td>5) What didn’t you like about the mind-mapping approach?</td>
<td>• New ways of being with each-other naturally brings out issues, these need to be acknowledged and channelled</td>
</tr>
<tr>
<td></td>
<td>• Too much talking, some things over-explained and could have been left to the group</td>
</tr>
<tr>
<td></td>
<td>• It did create more to do with organisation, that took more time</td>
</tr>
<tr>
<td></td>
<td>• Talking stick does not work for brainstorming</td>
</tr>
<tr>
<td>6) What could have been improved?</td>
<td>• To continually acknowledge that, as well as (being) goal orientated, the process needs to be taught and mastered.</td>
</tr>
<tr>
<td></td>
<td>• More time (X3 comments)</td>
</tr>
<tr>
<td></td>
<td>• Mouth-guards for some people</td>
</tr>
</tbody>
</table>
From the analysis and triangulation of the data gathered, it is evident that mind-mapping has contributed to a significant improvement in a variety of indicators of group effectiveness. The group is comprised of widely differing and strong personalities. However, mind-mapping gave them the opportunity to concisely voice differing perspectives, identifying motivators whilst bringing them together on common ground and consolidating collective goals. The benefits of this process cannot be underestimated, as it has facilitated momentum towards a unified purpose (Wheelan 2009). The mind-mapping workshop helped BSANE to move on from the storming stage of group formation, where there was significant potential for the group to break down. Instead it moved forwards to the performing stage, more able to function effectively as a group, and from this, to develop identity and strategy (Moreland and Levine 2001). However, it is important to note that the BSANE group is in an area with a unique socio-political profile. This case study has shown, nevertheless, that despite a wide-ranging variety of participant backgrounds, the mind-mapping worked well. It would, of course, be interesting, to further test this technique with groups of different demographics and socio-political views in other regions of Australia.

The meetings following the mind-mapping workshop continued to be productive. Roles were formalised, processes were agreed upon and an agenda was followed. Photographs of the mind maps were emailed out and used to create a mission statement. The group name was chosen at the following meeting, and several events and strategies have been planned and implemented. Conflict is dealt with more easily, as opposing views are rapidly negotiated and compromises found. Mind-mapping has been adopted as a communication tool by the group, and has since been used for idea synthesis and strategic planning. Communication is open, a platform for creativity has been maintained and new ideas are explored and developed. Differing views are valued, whilst decisions are made collaboratively. One month following the mind-mapping workshop, BSANE carried out a successful information evening with approximately 250 attendees and 6 well-known speakers, with petitions, information sheets, registration sheets and merchandise organised. Many other events were now being planned, and the group linked with other groups across the region to coordinate their efforts. In short, the group was now displaying synergy, and clear, strategically developed goals (Buchholz and Roth 1987; Baninajarian 2009).
6.6 Conclusion

The observation of the BSANE group highlights many patterns of behaviour outlined in the literature, showing a fluid and changeable set of group dynamics. This study has demonstrated the importance of communication, and the susceptibility of individuals to follow certain patterns of behaviour. Importantly, negative emergent norms can quickly lead to excessive behaviours that can hinder communication and group effectiveness. Here we demonstrate the capacity of the use of mind-mapping to counter egocentric behaviours that threatened to disrupt positive group behaviour. Divergent ideals were included in the transparent, larger group process of mind-mapping, which enabled more efficient decision-making whilst discouraging the development of negative behavioural patterns. This case study demonstrates that when groups are effectively communicating and combining individual knowledge, experience, ideas, skills and wisdom, the synergistic potential is enormous, and that mind-mapping can provide an opportunity for interactions of this quality to occur. The momentum that occurs when a group achieves synergy propels individuals and communities towards increased participation, empowerment, action, and social change. The use of mind-mapping has been shown in this study to be a highly effective tool for overcoming communication barriers and increasing cohesion despite varied value systems, educational and cultural backgrounds. While it is only one of many such tools for strengthening community groups and providing cohesion, it can be easily adapted for use in a variety of contexts for improving social dynamics and collaboration in consultative practices. This is essential in particular regard to contentious resource management issues and for improving the ability of community groups to change, adapt and respond to environmental management issues. The power in the use of mind-mapping is in the maintenance of transparency of process, removal of power-structures and ego-centric personal barriers for more effective communal knowledge sharing, clarification, idea crystallisation, and planning for the future.

6.7 Acknowledgements

The researchers would like to thank all members of the BSANE group, especially interviewees and workshop participants.
6.8 Reflecting on Chapter 6

Responding to sub-question 1: *What are drivers of social positioning for contentious land use change, for individuals within a group, and for the group as a unit?*, interviews showed that group members had shared concerns, but also some divergent ideas, some of which were unrelated to CSG development. Divergent concerns frequently sent discussions off-track and wasted time, leading to the disengagement of some individuals. This focus group work demonstrated a number of barriers to the success of community action groups. Later research revealed that not all groups formed over the CSG issue were able to with a common purpose, group cohesion and social identity can be strengthened. The BSANE group was then able to go on and effectively use the group as a vessel for successful action. These findings respond to Sub-question 3: *What is the relationship between social positioning, group dynamics and group purpose?* Overcoming negative social dynamics enabled them to implement social actions, thereby passing on their ideas and group representations of the CSG topic to thousands of Byron Bay residents.

I will also reflect that the group was very effective in their aims to hold an information night, and the Byron Bay event for the national day of action. However, the enormous level of energy required to mobilise thousands of people took its toll on BSANE members, and there was conflict between group leaders that led to a group decision to take a long break towards the end of 2011. A large proportion of the group had burnt out, and their profile dropped considerably after this time, however their work was considered to be pivotal in the mobilisation of the coastal population of the Northern Rivers, and involved many musicians who went on to write anti-CSG songs and play at multiple events. From late 2011, the anti-CSG movement had become popular.
Chapter Seven: Unconventional Gas Development: Why a Regional Community Said No: A Report of Findings from the 2012 Lismore City Council Election Poll and Exit Poll Survey (New South Wales)

Figure 34: Locating Chapter Seven within the thesis structure


The thesis sub-questions addressed by this chapter were:
Sub-question 1: What are drivers of social positioning for contentious land use change? (For those who elected to support, not support or remain undecided on CSG developments)

Sub-question 3: What is the relationship between social positioning, group dynamics and group purpose?

Sub-question 4: How can community-engaged approaches inform decision-making regarding large-scale industrial developments?

7.1 Abstract

Public concern resulting from unconventional coal seam gas (CSG) exploration and production has become a contentious planning issue in regional Australia, with public concern drawing attention to government planning obligations. To assist Lismore City Council (Northern New South Wales) in its deliberations on the topic, a referendum-style poll on the issue of CSG industry development was held in conjunction with the local government elections of September 2012. The poll question, ‘Do you support CSG exploration and production in the Lismore City Council area?’, elicited a poll response rate of 97% of eligible voters, of which 87% voted ‘no’. This paper reports the results of an exit poll survey using the Theory of Planned Behaviour to frame motivations behind the poll result, and examines the role of the poll and exit poll survey in providing a process of deliberative democracy in the context of the CSG debate. Key details highlighted by the results were that non-supporters of CSG exploration were primarily concerned about water quality, while supporters saw the primary benefit being regional employment. Emerging themes of this study are the need for more independent research on potential risks and benefits of CSG developments, increase in institutional transparency, and the development of renewable alternatives. The study concludes that the principles of deliberative democracy involved in the Lismore City Council poll and subsequent exit poll survey have provided an opportunity for a more open discussion and genuine discourse within the CSG debate.

Keywords: unconventional gas; coal seam gas; CSG; deliberative democracy; community; election survey; regional planning

7.2 Introduction

Both planned and existing developments of unconventional gas extractive industries have become a subject of international debate since around 2010 (Control Risks, 2012), with
concerns raised around potential environmental and social impacts (Klassen and Feldpausch-Parker, 2011; de Rijke, 2013; Lloyd et al., 2013). Fuelled by a series of screenings of the documentary Gasland taking place around Australia (Fox, 2010; Klan, 2011; Control Risks, 2012; O’Kane 2013) which focused on negative impacts of shale gas developments in the United States, the topic of unconventional gas extraction slowly gained a wider national interest, with the initial focus being on the rapidly expanding coal seam gas (CSG) industry in Queensland (Kerr, 2011; Klan, 2011; Walker, 2012; Lloyd et al., 2013).

With the commencement of exploratory drilling for CSG taking place in a region of north-eastern New South Wales known as the Northern Rivers, a range of community protests began to take place from 2011, with the key aim of putting pressure on governments to reassess the legislative framework within which the gas industry operates (ABC, 2011; Appelcamp, 2011; McHugh, 2012; Luke et al., 2013; O’Kane, 2013). Despite this, it still remained unknown whether protests were being carried out by a ‘vocal minority’ or whether they in fact represented a larger proportion of residents (Lismore City Council, 2012a). In response to this, Lismore City Council chose to engage directly with its community to enable better-informed decisions on planning issues surrounding the CSG debate (Lismore City Council, 2012a). Southern Cross University (SCU) researchers were engaged to independently develop a referendum-style poll question on the topic of CSG developments that would be posed at the local government elections in 2012 (Lismore City Council, 2012a; Luke et al., 2013) and to implement a subsequent exit poll survey to look deeper into community views. The aim of this paper is to report the results of the exit poll survey and to discuss their role within the context of deliberative democracy while providing an overview of community perspectives of the CSG industry developments in the Lismore local government area (LGA).

7.3 Background

In order to meet the international demand while minimising greenhouse gas output, the pursuit of new energy sources or ‘transition fuels’ has become a topical issue with considerable planning implications. With gas projected to be the fastest growing non-renewable energy source over the next 20 years, Australia is experiencing development on an unprecedented scale by the unconventional gas industry (Clark et al., 2005; Hindmarsh and Matthews, 2008; Irvine, 2011; Moynihan, 2011; Geoscience Australia, 2012; O’Kane, 2013). The process of hydraulic fracturing (fracking) is commonly used for accessing CSG, shale gas, and tight-sands
gas reserves, and while the resources sector typically regards this as a low-risk method, others perceive it to involve unmanageable and unacceptable risks (Walker, 2012; Sky News, 2011).

Within the CSG debate, issues have been high-lighted surrounding the management of water resources and competing land uses (Brown, 2011; Duddy, 2011; RBS Morgans, 2011; Cham and Stone, 2013; O’Kane, 2013), with implications for water and land management leading to criticism from farmers, conservationists, scientists, and celebrity advocates (Appelcamp, 2011; Duddy, 2011; Kerr, 2011; RBS Morgans, 2011; O’Kane, 2013). The question has been raised whether the current legislation and natural resource management decision-making processes are able to sufficiently balance industry and community aspirations within the regulatory context and with the appropriate scientific rigour (Beierle, 1999; Solomon et al., 2008; Hindmarsh, 2010; de Rijke, 2013; Willow, 2014).

Decision makers are often required to balance demands for economic development with associated environmental risks (Suzuki and Dressel, 2003; Reid et al., 2010; Liverpool City Council, 2013), while the community calls for mechanisms that allow science and society to address decision making and the needs of citizens at global to local scales (Reid et al., 2010). Politicians depend upon knowledge provided by public professionals for policy analysis and development, thus shaping priorities of public policy by working within a decision-making framework that has a potential to exclude the citizen (Mullard and Spicker, 1998; Perhac, 1998; Hindmarsh, 2010). There is an argument, however, that citizen input should be better integrated into the development of sustainable and liveable futures appropriate to the local context (Irvin and Stansbury, 2004; Lloyd et al., 2005; Robins, 2008; McIntyre-Mills, 2010).

Specifically, there has been a growing debate surrounding what is becoming known as a social licence to operate, with moves to create legislative instruments for social impact assessment surrounding CSG developments in Queensland (Boutilier and Thomson, 2011). At this point, there is still a considerable debate as to what a ‘social licence’ is and whether CSG companies operating in different regions do, or do not, have one (Williams and Walton, 2013). Despite industry fulfilling the necessary legislative requirements, there has been criticism in many parts of the country that consultative processes used have lost focus on the underlying principles of participation (McHugh, 2012; SHN, 2012; Liverpool City Council, 2013; de Rijke, 2013), and there have been calls to better institutionalise democratic processes with regard to specific topics, such as what Hartz-Karp and Briand (2009) describe as deliberative democracy.
Deliberative democracy is an approach to public politics that attempts to transform politics through ‘improving collective decision-making [and . . . emphasising] the right, opportunity, and capacity of anyone who is subject to a collective decision to participate . . . in consequential deliberation about that decision’ (Dryzek and Niemeyer, 2012, 1). The key element of deliberative democracy is communication, specifically around citizens having the opportunity and ability to effectively have their say about decisions made about them. Requirements for deliberative democracy have been described as integrity including transparency, inclusion of a diverse range of values, deliberation using sufficient and credible information, with the opportunity for community influence on process (Kikken et al., 2009).

The most common form of deliberative democracy has been described as the ‘minipublic’, where a small population sub-sample (up to 2000 people) engages multi-directional conversations to improve understanding, decision making, and problem solving around a specific issue\(^1\) (Dryzek and Niemeyer, 2012). While deliberative minipublics can achieve the ideals of deliberative democracy, the present challenge lies in applying the process more widely, of finding ways to ‘scale up’ the benefits of minipublics, or achieving a ‘deliberative system’ as part of our politics’ (Dryzek and Niemeyer, 2012). To empower individuals and groups in the community to make informed choices, and to foster social learning, ways need to be found for better integration of collaborative decision-making processes across the disciplines of science, policy construction, and planning (Greenwood and Levin, 1998; Irvin and Stansbury, 2004; Reed, 2008).

In the Northern Rivers region of New South Wales, CSG exploration and potential extraction has become a subject of major community concern (Klan, 2011; Lloyd-Smith and Senjen, 2011; Broome, 2013; Luke et al., 2014), particularly since the commencement of exploratory drilling in rural areas towards the north of the Lismore LGA (Northern Star, 2011; Lloyd et al., 2013). Lismore City Council, covering 1267 km\(^2\) with a total population of 45 917 (Lawrence

---

\(^1\) Examples include citizens’ juries, consensus conferences, planning cells, and deliberative polls. Recent examples of the latter in Australia are the 1999 Republican Referendum Deliberative Poll, the 2009 Citizens’ Parliament, which examined parliamentary reform, and the 2013 Citizens’ Assembly on climate change.
Consulting, 2011), was the first in Australia to run a referendum-style poll on CSG industrial developments, providing an interesting example of deliberative democracy (Luke et al., 2013).

7.4 Research methods

7.4.1 The Lismore CSG poll

The Lismore City Council CSG poll was implemented by the New South Wales Electoral Commission at the local council elections on 8 September 2012 (Electoral Commission NSW, 2012) at all polling booths in the Lismore LGA. The Lismore CSG poll question was developed independently by SCU researchers through a process of stakeholder engagement (Luke et al., 2013). The community-engaged action research process detailed in Luke et al. (2013) was used to provide Lismore City Council with advice on the best poll question wording (Blankenship, 1940), resulting in a decision on the final question by the elected members of the Council: ‘Do you support CSG exploration and production in the Lismore City Council area?’ (Lismore City Council, 2012b). Although the poll could provide a useful gauge of community support for the CSG industry, due to Electoral Commission limitations, only a yes or no response could be given (Electoral Commission NSW, 2012). The exit poll survey was therefore developed in order to provide an additional insight into community motivations behind the poll result.

7.4.2 The case for yes or no

Fishkin and Luskin (2005) suggest that discussions leading up to public voting on a particular topic should be well informed and comprehensive, providing well-balanced supporting arguments backed up with appropriate factual claims. Both at the polling booths, and some weeks prior to the election date, the yes/no cases for the Lismore CSG poll were distributed by Lismore City Council (Lismore City Council, 2012f). In order to maintain impartiality of process, the ‘no’ case for the poll was developed by the anti-CSG protest association, Lock the Gate Northern Rivers, and the resources industry group, APPEA, developed the ‘yes’ case. Despite this initial support for the poll, APPEA withdrew its support one week prior to the election date, stating that it found the question ‘leading’ (Broome, 2012); however, at this stage, the case they had provided was already distributed on the council information sheet. The yes case stated that CSG was an established clean energy industry providing jobs, taxes, and royalties while helping to develop sustainable regional communities. The no case outlined negative health impacts, risks to water supplies, reduced quality of life, and the potential for harm to existing industries.
7.4.3 The exit poll survey

The exit poll survey research is embedded within a wider research programme examining social responses to gas industry developments using interviews, focus groups, and surveys to identify perspectives and dynamics occurring at a range of social scales (Flood, 2010; Lloyd et al., 2013; Luke et al., 2013; 2014).

Given the contentious nature of the CSG issue, and due to the fact that such a survey must be an empirical technique with an underlying philosophy of objectivity (Gallup, 1941), the utmost care was taken to maintain impartiality at every stage of design and implementation while allowing different community perspectives to be captured accurately. Given that exit polls ask respondents to indicate how they voted immediately following the act of voting, it can be surmised that election day surveys are able to capture an especially accurate portrait of the electorate, with data less likely to be corrupted by the passing of time or bandwagon effect (The Gallup Organization, 1981; Levy, 1983; Cox and Stockwell, 2005).

7.4.4 The sampling strategy

The exit poll survey was conducted after the Lismore CSG poll and followed standard survey practices (Pannell and Pannell, 1999; Francis et al., 2004; Kleine et al., 2012) using a strategic sampling strategy to achieve the best possible cross-sectional sample of voters (Levy, 1983), with all booths surveyed using the same approach. Since refusal rates are approximately a function of questionnaire length (Levy, 1983), survey sheets were designed to be short and direct, taking less than 5 minutes. They were filled in directly by participants and administered by volunteers at all 19 polling stations in the Lismore LGA, shown in Figure 35.
The 40 volunteers recruited were all students and staff of SCU. In order to ensure a consistency of approach (Pannell and Pannell, 1999; Kleine et al., 2012), all volunteers attended formal training, where a standard approach was explained and roll played; they were given an SCU nametag and instructed to wear plain, smart casual clothing. Volunteers were also trained in Electoral Commission guidelines and instructed on research ethics committee requirements for their conduct, with an emphasis on impartiality. For example, if they were asked for their opinion, they were to respond: ‘We are here today to find out how you feel about this topic’.

Figure 35: Location map showing the area of Lismore City Council and the location of all polling stations; the shading represents urban areas (map by G. Luker).
Should any further questions arise, volunteers were given a copy of the SCU official statement on CSG\textsuperscript{2} for members of the public to read and cards with contact details of the principle researcher to give out if necessary. All volunteers were given a sheet to note the approximate response rate and time spent administering the survey. This varied slightly due to volunteer time commitments but averaged approximately 2.5 hour across the booths.

The polling booths varied in nature, some with a high volume of traffic such as St. Pauls in the city centre, with rural booths having a lower volume of traffic, such as the Woodburn polling station, which was shared by two different voting LGAs. The Electoral Commission of NSW had, however, been contacted prior to the survey, and such differences were discussed and prepared for as much as possible, with volunteers at booths expecting a higher volume of voters given a greater number of survey forms. Consent to engage was verbal and acknowledged through willingness to answer questions. Participants were informed that their identity would remain anonymous unless they chose otherwise and that there was no requirement to answer all questions.

7.4.5 Survey structure

Feedback and analysis from three pilot surveys ensured the development of clear, unambiguous questions that were easy to understand and respond to. The single-page exit poll survey comprised of eight short questions developed through thematic analysis of previous interviews and focus group work (Lloyd \textit{et al.}, 2013; Luke \textit{et al.}, 2014). Due to the fact that many respondents would have had access to the council information sheet, the yes/no cases were used to guide the content and structure of the first question. The Theory of Planned Behaviour was utilised as a tool to guide exit poll survey structure and hence provide a framework upon which to hinge later discussion.

\textsuperscript{2} It should be noted that the university had previously issued a formal statement on its position on CSG, informed directly by its strategic plan (Southern Cross University, 2011), affirming its role in the provision of impartial research in all aspects of the topic.
Chapter Seven: Unconventional Gas Development

7.4.6 The Theory of Planned Behaviour

With the assumption that intentions are the pre-cursors of behaviour, Ajzen’s (1991) Theory of Planned Behaviour proposes a model of how human action is guided, suggesting that the best predictor of a behaviour being performed is intention. Ajzen states that the intention of a person is influenced by their perceived control (in this context, interpreted as to whether they feel they have a choice) alongside attitudinal beliefs (reasons to carry out the action) and normative beliefs (social influences), which can be used as proximal or relative measures leading to a behaviour (Ajzen, 1991; 2005; Ajzen et al., 1996; Francis et al., 2004).

The behaviour in this case was how respondents voted in the Lismore CSG poll, which was the first question asked in the exit poll survey. Respondents were then asked what they saw the CSG industry bringing to the region (attitudinal beliefs), whether they agreed with their family and friends on the topic (normative beliefs) and whether they felt they could impact on government decision-making (perceived control). They were also asked whether they would be prepared to change their minds (strength of attitudinal belief) and what information sources they used on the CSG topic (influence on attitudinal belief). Responses were prioritised in order to gain greater insight into how well informed they were and to provide an opportunity for them to rank their reasons for support or non-support of the industry in their region. A comments section allowed for additional information to be written, enabling a thematic analysis to take place (Owen, 1984) that has been triangulated with the quantitative responses in order to provide a deeper understanding of stakeholder perspectives of the issue (Greenwood and Levin, 1998).

7.5 Results

On 8 September 2012, 25 660 Lismore residents voted in the local government elections. Almost all of this number (97.2%) participated in the Lismore City Council CSG poll (Electoral Commission NSW, 2012), resulting in an 86.9% ‘no’ vote to the development of the CSG industry in their region (21 608) with 13.1% voting ‘yes’ (3270). By utilising the election to achieve the best possible cross-sectional sample of the voting population of the Lismore LGA, the SCU volunteers were able to achieve a sample size of 1036, representing 5.4% of poll participants (on the day) responding to the exit poll survey. Of this sample, 87.2% of exit poll survey respondents stated that they had voted ‘no’ in the poll; 6.3% stated that they were still undecided on this issue, with 5.6% stating that they had voted ‘yes’.
7.5.1 **Comparison of the Lismore CSG poll and exit poll survey (Question 1) result**

Figure 36 shows a comparison of the total Lismore CSG poll result gained, including all pre-polling and absentee voters (left), with the result gained from the booths on the day (centre). Comparing the Lismore CSG poll result with the exit poll survey results for question 1 (which was the same as the poll question), there is a common trend where the ‘yes’ result is much lower in the exit poll survey (Figure 36). It is impossible to definitively know whether this is due to supporters being in general less willing to participate or whether it is due to the fact that a large proportion of the ‘yes’ vote suggested that they were leaning towards undecided. The ‘no’ response, on the other hand, is fairly consistent between the Lismore CSG poll and the exit poll survey.

![Figure 36: Comparison of overall poll response (the left column includes absent voters), with exit poll survey results for Question 1 (which was the same as the poll question).](image)

7.5.2 **Exit poll survey variations by district**

Although there were variations in the sample size gained by the exit poll survey across the different booths (due to practical considerations), relative trends in poll voter numbers at each location were followed in many cases. When cross-checked with Australian Bureau of
Statistics data, the proportions of each gender and age category were found to closely represent the population structure of the LGA across the booths (ABS, 2012).

When exit poll survey results were separated among different booth localities (shown in Figure 35), the highest percentage of undecided residents were found at Lismore South Public, at 18% of 80 respondents, while Trinity had the highest percentage of ‘yes’ answers, at 8% of 26 respondents. The Channon had the highest percentage of ‘no’ responses at 100% of 38 respondents, followed by Richmond River (96%). At Goonellabah Community Centre, 10% of 48 respondents were still undecided, with 4% in support and 84% not supporting CSG developments in the area. St. Pauls in the city centre provided the largest sample (157), 12 of whom supported the CSG industry, the second highest ‘yes’ at just under 8%. The lowest percentage of ‘no’ responses was at Woodburn to the southeast (78%). St. Pauls is compared with the other two largest representative samples, Rosebank and Woodburn, where samples of over 15% of poll respondents (attending those booths) were achieved (Figure 37).

![Figure 37: Results from three booths, responding to Question 1 (the same as the poll question), selected for comparison due to their larger sample size (detailed on x axis).]

7.5.3 Perceptions of the CSG industry

Asking respondents in the exit poll survey to prioritise what they perceived to be key potential positive and negative impacts of the coal seam industry (Table 2) provided insight into matters of attitudinal control and key motivations behind respondents’ Lismore CSG poll response
Almost three quarters of respondents listed at least three priorities, with half of respondents listing more than five.

Table 2: Respondents’ views of potential positive and negative contributions of the coal seam gas industry comparing priorities of supporters and non-supporters of coal seam gas.

<table>
<thead>
<tr>
<th>What will coal seam gas bring to the region?</th>
<th>Supporters</th>
<th>Non-Supporters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranked Priority</td>
<td>%</td>
</tr>
<tr>
<td>Harmful effects on water systems</td>
<td>5</td>
<td>5.0</td>
</tr>
<tr>
<td>Long-term negative impacts</td>
<td>6</td>
<td>3.5</td>
</tr>
<tr>
<td>Impacts on community health</td>
<td>7</td>
<td>2.1</td>
</tr>
<tr>
<td>Reduced quality of life</td>
<td>8=</td>
<td>1.4</td>
</tr>
<tr>
<td>Harm to existing industries</td>
<td>8=</td>
<td>1.4</td>
</tr>
<tr>
<td>Jobs</td>
<td>1</td>
<td>24.9</td>
</tr>
<tr>
<td>Improved regional economy</td>
<td>2=</td>
<td>16.3</td>
</tr>
<tr>
<td>Improved infrastructure</td>
<td>3</td>
<td>15.6</td>
</tr>
<tr>
<td>Clean energy</td>
<td>2=</td>
<td>16.3</td>
</tr>
<tr>
<td>Long-term positive effects</td>
<td>4</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Responses of supporters of CSG in the exit poll survey were focused on potential gains such as job potential, contribution to regional economy, and the provision of clean energy, with a sense of long-term gains. Responses of non-supporters focused on concerns around environmental, social, and economic impacts of the industry and the long-term nature of potential impacts. Non-supporters expressed key concerns in the exit poll survey about
potential negative impacts on water systems, on quality of life, on community health, and on existing industries.

### 7.5.4 Information sources

A key question of the exit poll survey was where respondents sourced their information on the CSG topic from 20 listed sources. A wide variety of sources were indicated, with a number of respondents selecting all 20 sources (Table 3). When asked to prioritise up to ten sources, word of mouth was overwhelmingly the favoured source, with local daily papers coming second, followed by TV current affairs programmes, and Internet sites. Documentaries were also highlighted as important sources in the top three priorities. About 6% of respondents viewed scientific literature as an important source. For those that did not support CSG, information from public meetings was as deemed as important as information from daily papers. One quarter of supporters listed only one source.

### 7.5.5 Strength of views

Respondents were asked whether, if credible evidence arose that the impacts of CSG were lesser or greater than they now thought, they would be prepared to change their minds. Responses to this suggestion showed marked differences between supporters and non-supporters. Of those who supported CSG developments, 12% indicated that their minds were made up on the topic. A significant majority (88%) said that they would be prepared to change their minds (of which 56% were a definite ‘yes’; 22% ‘maybe’). Of those who, on the other hand, did not support CSG, 44% of respondents indicated their minds were made up, with 56% prepared to change their minds (including 31% ‘maybe’ and 22% ‘yes’). Over three quarters of non-supporters considered themselves to hold similar views to that of family and friends, whereas less than a quarter of CSG supporters reported to hold the same view, showing potential for social disharmony with the polarisation of views.
Table 3: Respondents’ sources of information about coal seam gas comparing supporters and non-supporters.

<table>
<thead>
<tr>
<th>Preferred information source?</th>
<th>Supporters</th>
<th></th>
<th>Non-Supporters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranked Priority</td>
<td>%</td>
<td>Ranked Priority</td>
<td>%</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>1</td>
<td>11.9</td>
<td>1</td>
<td>13.2</td>
</tr>
<tr>
<td>Local daily papers</td>
<td>2=</td>
<td>11.1</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>documentaries</td>
<td>4</td>
<td>6.3</td>
<td>3</td>
<td>8.7</td>
</tr>
<tr>
<td>TV news</td>
<td>2=</td>
<td>11.1</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>Public meetings</td>
<td>8=</td>
<td>3.2</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Local weekly papers</td>
<td>5=</td>
<td>5.6</td>
<td>6</td>
<td>7.4</td>
</tr>
<tr>
<td>Local radio</td>
<td>7=</td>
<td>4.0</td>
<td>7</td>
<td>7.1</td>
</tr>
<tr>
<td>Current affairs TV</td>
<td>5=</td>
<td>5.6</td>
<td>8</td>
<td>4.7</td>
</tr>
<tr>
<td>National radio</td>
<td>9=</td>
<td>2.4</td>
<td>9</td>
<td>4.4</td>
</tr>
<tr>
<td>Brochures</td>
<td>6</td>
<td>4.8</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>Scientific papers</td>
<td>5=</td>
<td>5.6</td>
<td>11</td>
<td>4.1</td>
</tr>
<tr>
<td>Email lists</td>
<td>10=</td>
<td>1.6</td>
<td>12</td>
<td>3.7</td>
</tr>
<tr>
<td>Facebook</td>
<td>9=</td>
<td>2.4</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>National daily papers</td>
<td>7=</td>
<td>4.0</td>
<td>14</td>
<td>3.4</td>
</tr>
<tr>
<td>Other Internet sites</td>
<td>7=</td>
<td>4.0</td>
<td>15</td>
<td>3.1</td>
</tr>
<tr>
<td>Film</td>
<td>11</td>
<td>0.0</td>
<td>16</td>
<td>1.9</td>
</tr>
<tr>
<td>National weekly papers</td>
<td>10=</td>
<td>1.6</td>
<td>17</td>
<td>1.6</td>
</tr>
<tr>
<td>CSG industry websites</td>
<td>3</td>
<td>7.9</td>
<td>18</td>
<td>1.5</td>
</tr>
<tr>
<td>Government websites</td>
<td>7=</td>
<td>4.0</td>
<td>19=</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>8=</td>
<td>2.9</td>
<td>19=</td>
<td>1.2</td>
</tr>
</tbody>
</table>
7.5.6 Perceived influence on government

Seeking to discern how the community views the scope of their influence on government (perceived control in relation to this topic), respondents were asked whether they felt they could influence government decision making on the CSG issue. Table 4 shows that half of the CSG supporters felt that they could influence government, mostly as a community (43%) but a few as individuals (7%). Nearly two-thirds of non-supporters felt they could influence government, with 7% believing they could do so individually, showing an overall higher perceived control (Ajzen, 1991) regarding the CSG topic than industry supporters. A third of supporters and one-fifth of non-supporters considered themselves to have no influence. Of those undecided, fewer than either supporters or non-supporters (43%) believed they could have an influence, with 29% saying that they could not. This is of course unsurprising given that at this point, they had no clear view on the topic.

7.6 Elicitation responses

In seeking further comments to better understand voter motivations behind the Lismore CSG poll result, the final question in the exit poll survey allowed for an optional elicitation response where 298 respondents (29% of respondents) provided 398 individual comments.

<table>
<thead>
<tr>
<th>Do respondents feel they can influence government decision-making?</th>
<th>Supporters %</th>
<th>Non-Supporters %</th>
<th>Undecided &amp;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, personally</td>
<td>7</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Yes, as a community</td>
<td>43</td>
<td>56</td>
<td>38</td>
</tr>
<tr>
<td>Maybe</td>
<td>18</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td>No comment</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Many respondents of the exit poll survey made clear statements to show their opposition to the industry. Anxieties were expressed in statements such as ‘I’m really worried about it. I hope
they ban it all round the world’, and ‘It’s done enough damage already’. However, in addition to this, 32 themes were raised, giving clues as to reasons for the strong poll response. The frequency of which each theme was expressed has been illustrated in Figure 38. The most frequent themes raised were concerns regarding the following: governance/ regulation; a need for improved research; impacts on water and the natural environment; and the need for renewables as an alternative energy source.

Figure 38: Frequency of themes raised in the comments section of the survey (Question 8).

7.6.1 Governance and regulation

The most commonly mentioned theme, with a total of 45 comments, related directly to decision-making, government, regulation, and legislative processes from supporters and non-supporters alike. Several comments reflected a lack of faith in governance held by some respondents: ‘Government always do what Government want no matter what people say’, and ‘I am amazed with local Member Thomas George’s blanket stand on this subject’. Several supporters made statements that they were happy to support the industry as long as they felt it was regulated adequately. Many of these comments hint at an expectation that regulation was
Chapter Seven: Unconventional Gas Development

in the process of being improved: ‘Support CSG provided well-managed strategies’, ‘This poll (and today’s vote) doesn’t allow me to say that I support CSG but only under strict conditions (and only if they can be agreed and met)’, and ‘More regulation on exploration licenses is needed, and more scientific research into CSG production is required’.

In terms of governance, there is a high level of mistrust apparent, particularly regarding motives behind decisions made on this issue, with 20 comments relating directly to short-term financial gain. Examples include ‘Don’t ruin our water for a short-term cash grab’, and ‘Look to the kids future not short-term dollar. Don’t give our gas away to China’.

7.6.2 Science and research

Thirty-six comments in the exit poll survey, from supporters, non-supporters, and those still undecided, urged that there be a greater scientific understanding gained. These respondents requested that more research be carried out on the potential impacts and benefits of CSG prior to a decision being made on whether or not to accept the industry in the area: ‘This is a grab for foreign benefits railroading their production without clear scientific or procedural investigation/tests’. Seven respondents specifically expressed a lack of trust in the role of science within the debate, for example, ‘A tonne of noise but science is taking the back seat. Worth the risk. Too much anecdotal evidence, not enough actual evidence’.

7.6.3 Potential impacts

The major concerns outlined in the quantitative responses of the exit poll survey were supported by the ‘further comments’ (Appendix 1), with 31 comments relating specifically to water. An example of a typical response was ‘I feel strongly that the risk to water, particularly underground water is far too great to take. Drainage/seepage tanks on the surface cannot be made safe against our storms and flooding rain. Underground mining can never be made safe from mistakes’. A further 27 comments reflected concerns around the impact the industry could have on the health and beauty of the natural environment, and there were 23 comments relating to farm viability and land rights issues. One respondent commented: ‘Cannot run my grazing property with gas. And (CSG) will devastate our assets’.

7.6.4 Sustainable energy

There were 30 comments made in the exit poll survey relating directly to sustainable or renewable energy. While the provision of clean energy was seen by some to be an important benefit
of the CSG industry, doubts were raised with its classification as a ‘clean energy’ source, including, for example, ‘I’m for cleaner energy and if there were a way to extract without environment and health impacts I would be for CSG. -Until that time I am against’, and ‘Government fund supporting CSG and coal mining should be redeployed to sustainable energy development’.

7.6.5 Other emergent themes

Thirteen comments in the exit poll survey urged that the industry slow down its pace and take a more precautionary approach: ‘A lot more work needs to be done to assess its safety. Even then the “roll out” of the industry should be slow and cautious so that unforeseen problems that arise will only affect a smaller amount of land’. There were seven comments regarding the benefits for foreign interests and nine comments regarding concerns about damage that had already been done in the United States and in Queensland: ‘Northern Rivers is not the place for this dirty, harmful industry. One only has to look at the mess it has made of USA and Western Downs [Queensland] to realise that we need to act now!’

One supporter highlighted how the polarisation of views on this topic had the potential for social disharmony to develop within the community: ‘It is very difficult to have a moderate or pro-CSG view and express it publicly because of the threat of abuse or other violence’. Another complained about the high volume of media focus on the CSG debate: ‘Anti-CSG movement clutters up newspapers’. The majority of comments from undecided respondents stated that they required further evidence in order to be able to make up their minds with brief statements such as ‘Need further discussion’, specifically those undecided needed to see more research carried out in order to be able to make a well-informed analysis of the industries’ potential risks and benefits: ‘When it can be proved that it is safe I will vote yes’; ‘More information from independent source on whether CSG is good or bad’; and ‘I am all for the economic benefits ONLY if we are 100% sure of the safety to our natural resources’.

7.7 Synthesis

The Theory of Planned Behaviour (Ajzen, 1991; 2001; 2005; Ajzen et al., 1996) has been utilised as a framework for synthesising the exit poll survey findings, providing insight into respondents’ motivations behind the poll result.
7.7.1 Perceived control

Two important themes emerging from the exit poll survey were community concerns relating to government decision-making and (a lack of) adequate research. Despite a significant proportion of exit poll survey respondents saying they felt that they could have an impact on government policy (high perceived control), a large degree of discussion around processes of government decision making has been apparent within individual responses.

The issue of credibility, including trust in regulatory institutions; the motives of scientists; or in information provided regarding risks and benefits of particular applications of science and technology, can play an important role in the acceptance or rejection of such an industry (Perhac, 1998; Gray et al., 2012). Cham and Stone (2013) argue that it does not matter how detailed or persuasive information may be if there is a lack of trust in a source. Either way, there were a high number of comments from respondents on each side of the debate suggesting a need to align the decision-making process with improved scientific knowledge and transparency.

7.7.2 Attitudinal and normative belief

While voters cast only a yes/no vote in the poll, the exit poll survey has identified that a significant proportion of voters – notably many more supporters of CSG than opponents – were prepared to change their minds, with a comparison with the poll result suggesting that approximately half of ‘yes’ voters may still be largely undecided. This has important implications in terms of showing strength of the attitudinal belief. While many appeared open to changing their perspective on this issue, those opposing CSG seemed to be more galvanised in their views with almost four times more non-supporters than supporters having their minds made up. The levels and forms of such perceptions may relate to a range of social characteristics, including education, familiarity with locale, network relationships, and income (e.g. McCallum et al., 1991; Blake et al., 1997; Wirtz and Chew, 2002; Togridou et al., 2006). It is, therefore, unsurprising that groups holding notably differing views on an issue will also respond differently in terms of their willingness to change their views (Lloyd et al., 2005; Lloyd and Boyd, 2011). The question was raised as to what could be considered to be credible evidence, reinforcing a need for a better understanding of respondents’ perception of source credibility (e.g. Ostman and Parkes, 1987; McCallum et al., 1991; Owen and Virderas, 2008).
Key contributors to attitudinal belief were highlighted by what community members believed the CSG industry would bring. Unsurprisingly, there were clear divides, with supporters focused on what they were set to gain, with job provision, an improved rural economy, and improved infrastructure as paramount determinants of their views. This was despite up to three quarters of supporter’s family and friends holding opposing views to them on this issue, suggesting that they could be under significant social pressure due to normative beliefs. Although opponents acknowledged that the industry would bring employment opportunities, essentially, what they felt they were set to lose prevailed as most important in forming their views, with potential environmental and social impacts being more important. The greatest concerns held by non-supporters related to water, health, and quality of life, with many comments suggesting a fear that changes brought on by the industry could have a significant negative effect on environmental and cultural values of the region, including their sense of place (Jorgensen and Stedman, 2001).

Once a high proportion of the community holds a particular view, it could be argued that social (or normative belief) pressures can create a knock-on effect (cf., Lang and Engel, 1984; Watts and Dodds, 2007); this possibility is heightened by the word of mouth being a key information source, which is often found to be a prevailing information source (Pero and Smith, 2006; Lloyd and Boyd, 2011), followed by local media, with a diverse range of information sources used by the majority of respondents. An important difference was that public meetings were regarded to be more important for non-supporters, further reflecting the importance of social contact in information sharing, a factor that has been long recognised in a variety of social settings (e.g. Wirtz and Chew, 2002; Togridou et al., 2006) and which demonstrates the importance of local media in provision of information (Ostman and Parkes, 1987; McCallum et al., 1991; Cox and Stockwell, 2005). Such dependence on social and local sharing of information has the likelihood of increasing the credibility of the information that can lead to attitudinal beliefs.

For supporters, the priority information sources following word of mouth were local daily papers, TV news, and CSG industry websites. A surprising proportion of the community claimed to access scientific reports directly, a finding that perhaps reaffirms McCallum et al.’s (1991) observation that ‘credibility appears to be the most valuable attribute of an environmental information source’. However, while values have been ascribed to scientific literature, this study was not able to ascertain what the respondents considered to be scientific
literature (i.e. whether it be Wikipedia, Internet sites, government reports, or refereed papers). Follow-up research here would prove enlightening.

To summarise the results in terms of Ajzen’s (1991; 2005) Theory of Planned Behaviour, those who voted to not support the CSG industry demonstrated stronger attitudinal and normative beliefs, and a higher perceived control in terms of governance, especially on a community level, with personal communications having an important impact on views. The Theory of Planned Behaviour has provided a useful framework for illustrating the strong combination of social and psychological elements leading to the 87% poll result, and it shall be a matter of interest to see whether and how this perception of the CSG industry may change over time.

In order to broaden the context in which this survey has taken place, common themes arising in other socio-environmental studies have also been identified, outlined below.

### 7.7.3 Reflecting broader patterns of concern

While patterns of response (especially in terms of what respondents believed the industry would bring) may reflect the information sheets circulated by the council, a numerous selection of concerns were present, with a wide range of information sources utilised by respondents. Importantly, the exit poll survey results reflect broader patterns, with community concerns around water quality, for example, mirroring results of many other investigations. In the 2013 New South Wales Chief Scientist’s preliminary report on CSG, 75% of submissions related to concerns around water, with social and environmental health and a lack of scientific data being other key issues raised (O’Kane, 2013). Concerns around water with a focus on the interconnectivity and resilience of underground water systems were also a key feature of the 2012 New South Wales Government Inquiry into the CSG industry, with many Inquiry participants (including scientists and representatives of farming groups) holding ‘grave fears about the fracking process and whether it exacerbates the risks to water supplies’ (New South Wales Parliament, 2012).

The findings of both the 2012 New South Wales Government Inquiry and the 2013 New South Wales Chief Scientists’ Report reinforce the complexity of community concerns around the CSG debate, with O’Kane reporting that contributors included as many as 18 separate issues, with an average of six subjects per submission across a range of subjects (O’Kane, 2013). Research and governance were also key themes highlighted in both NSW Government reports, with 43% of submissions to the O’Kane Report expressing concerns over the pace of
development approvals alongside an apparent lack of available scientific data. Themes of trust and transparency brought up by this survey were also highlighted, with one in ten submissions expressing a lack of trust in industry or government process (O’Kane, 2013). Many of the issues raised by the exit poll survey echoed findings from the 2012 New South Wales Government Inquiry, with a key theme being the uncertainty surrounding potential cumulative impacts of multiple developments on a regional scale, which was the second highest ranked concern in the exit poll.

In a wider context, a survey of Australian environmental managers carried out by Boyd et al. (2013) found that water was the highest concern regionally (of over 20), coming third after climate and environmental change nationally and globally. The 2007 Australian Survey of Social Attitudes (ADA, 2007) placed drought as the highest national concern, with water raised as the number one environmental concern for Australians in the 2008 and 2009 IPSOS Eureka surveys (IPSOS, 2009). Concerns, therefore, around water usage and potential pollution by extractive gas industries have touched on what is already a sensitive issue for Australians.

A step towards deliberative democracy Together, the Lismore CSG poll and exit poll survey are a step towards meeting the challenges of applying the process of deliberative democracy more effectively. In deliberative democracy, the nature of communication is important, distinguishing this type of community engagement from other forms of political debate (Dryzek and Niemeyer, 2012). Importantly for the community, deliberative approaches to democracy need to have transparency and integrity while providing enough information for deliberation and allowing for influence on broader policy and decision-making (Kikken et al., 2009).

The context of the Lismore CSG poll provided a non-coercive environment, an environment that departed significantly from the previously often combative social campaign. The process provided citizens with balanced information in addition to a voluntary and anonymous forum for expressing their views. This gave the community the chance to express views without linking that expression to the election of individuals to Council. The Lismore CSG poll engaged a significantly large population sample; of the 25 660 eligible voters, 24 942 cast a vote in the poll.

The poll itself, in its neutrality of language (resulting in a simple yes/no vote), clearly limited the opportunity for negative communication, while the post-poll survey provided a safe
opportunity for people to express their views and concerns outside the combative environment that had previously grown up around the issue. Contrary to previous public expressions of opinions, the exit poll survey indicated that a significant proportion of the respondents were still reflecting upon the issues and were open to possible change of view, with the personal context of these views often clearly expressed. While a poll itself does not provide this opportunity, the open language recorded in the exit poll survey acknowledged the personalised language of respondents. This is a key characteristic of deliberative democracy and represents a significant departure from the largely polarised public positions prior to the poll. The lead-up to the Lismore CSG poll also drew on all of these non-formal modes of communication among the community from all sides of the debate.

The process of Lismore CSG poll question development through to the exit poll survey provided transparency of process and the community with an opportunity for their diverse range of views to be heard. Sufficient and credible information was widely disseminated so to enable voters to make an informed deliberative choice in the Lismore CSG poll and subsequent exit poll survey.

Through a process of deliberative democracy, the outcomes of the poll and survey have enabled Lismore City Council to stimulate increased research in the area of water and health impacts of CSG extraction. Lismore City Council also voted to lobby state and federal government to consider the poll result regarding future planning policy, including calls for moratoria, at least in the Lismore LGA (Lismore City Council, 2012d; Luke et al., 2013).

7.8 Conclusions

The process of developing the Lismore CSG poll question; the Lismore CSG poll itself; through to the exit poll survey represents an effective form of ‘scaled-up’ deliberative democracy by providing the means by which an entire community was able to effectively communicate with its local government over an issue with the potential to significantly affect their lives. The exit poll survey provides further insight into community perspectives on CSG in the Lismore region. The Lismore CSG poll and the exit poll survey have provided a useful gauge for Lismore City Council regarding community perspectives and concerns, and as a result have increased regional research in the area of water and health impacts of CSG extraction. The Lismore CSG poll and exit poll survey provide an evidence base for Lismore City Council to lobby the state and federal government to consider a deeper integration of
community views within the decision-making process regarding future planning policy surrounding CSG developments (Lismore City Council, 2012d; Luke et al., 2013). Finally, key themes of concern raised by the exit poll survey were in regards to government accountability, and despite a high level of support for the Lismore CSG poll and exit poll survey on a local government level, it remains to be seen how the outcomes of such a process of deliberative democracy may be integrated into decision making and future planning strategies at a state and federal level.

7.9 Reflecting on Chapter 7

Sub-question 1 was a principle focus of this chapter: *What are drivers of social positioning for contentious land use change (for those who elected to support, not support or remain undecided on CSG developments)?* The survey was able to provide insight into drivers of individual-level and community-level social positioning on the CSG topic. Industry supporters viewed job provision and economic benefits as paramount, however, they were in the minority. The granting of development approvals, prior to the establishment of a sufficient knowledge base, was increasing distrust in government process. A prominent theme related directly to a seminal definition of sustainability (Burton 1987), that the short-term benefits of proposed developments were not viewed to out-weigh long-term costs. While the CSG industry could provide jobs for current generations, this could be at a cost to future generations.

Further insight was provided into sub-question 3: *What is the relationship between social positioning, group dynamics and group purpose?* With the literature indicating that prevailing views can have a knock-on effect, normative views expressed in this chapter suggest that social influences likely played an important role in how individuals took up a position on this topic, relating to their inclusion in social groups. Further research could clarify this relationship.

Sub-question 4 was also addressed in this chapter: “*How can community-engaged approaches inform decision-making regarding large-scale industrial developments?*” The poll and survey demonstrated how processes of deliberative democracy can be used effectively to quantify a community-level social license. By the time the Lismore CSG poll took place, community discourse had proliferated, and many social action events had been held in the local area (prompting the poll). But to what extent did the outcome of the CSG poll result in policy change? Decision-makers were informed about resident views in Lismore, but what did they do with this knowledge? This theme will be explored further in the following chapters.
Of the Lismore community, 87 percent had withdrawn their social license, however, had Metgasco ever had a social license in Lismore? This highlights an important flaw in current models of social license. Perhaps a stronger term is needed here - social license denial is more fitting for the Lismore case study. This returns to the inherent complexities of social license, and the apparent assumption that a social license is regarded to exist, unless sufficient social resistance indicates that it does not. This suggests an important relationship between social license and social resistance, which will be explored in Chapter 9.
Chapter Eight: Developing the Lismore CSG Poll – A University/Local Government Collaboration


The following thesis sub-question will be addressed in this chapter:

Sub-question 4: How can community-engaged approaches inform decision-making regarding large-scale industrial developments?

8.1 Abstract

Regional universities can contribute to the capacity of regional governance by providing an important source of specialist knowledge that can be used to aid problem-solving and engage
communities more actively in decision-making. This paper reports a case of a partnership between a regional university and a local government authority (LGA), in a situation where the local government authority chose to run a referendum-style poll on a regionally important environmental and industrial issue; the development of the coal seam gas industry in a rural area. The partnership was adopted to produce an independently developed question for the poll. The poll question was developed by university academics who having consulted with stakeholders, provided advice to the LGA, which took responsibility for the final wording of the poll question. An evaluation of the processes involved in developing the poll question included reflection on the collaborative relationship between the university and the LGA. While the independence implicit in the university staff role was acknowledged as important, the importance of a university-LGA collaboration was also highlighted. The value of a more formally structured process was noted, as were the importance of emphasising the university’s role as an advisory body only, and the LGAs ownership of the final decision. Implications for policy include (1) the important role that regional Australian universities can play in enhancing governance and decision-making processes, (2) the potential for independent input to policy development processes for local and regional governance, and (3) the poll process which provides a robust method for ascertaining social acceptance of a controversial land use issue.

8.2 Introduction

This paper reports a case of a partnership between a regional university and a local government authority (LGA) in developing the question for an LGA poll on a matter of regional planning. The context is one in which a local government authority had elected to run a referendum-style poll on a regionally important environmental and industrial land use issue. The purpose of this decision was for the LGA to seek views from its electorate on the issue, as part of its efforts to inform its planning and decision-making processes. In short, the LGA sought to discern the strength of community views on the issue. The planning issue is the development of a coal seam gas industry in a rural area. The LGA elected to develop a relationship with its local university, in order to draw on local expertise in social research techniques: this partnership was adopted to produce an independently developed question for the poll. The LGA contracted university academics to develop draft poll questions and provide advice around their suitability and applicability.

The role of the university included consultation with regional stakeholders, drawing on the university’s existing network through prior research into the coal seam gas issue (Boyd, 2013;
Social license for industrial developments in rural areas

Lloyd, Luke and Boyd, 2013; Luke, Lloyd and Boyd, 2013; Luke, Lloyd, and den Exter, In Press). On advice from university academics, the Lismore City Council took responsibility for the final wording of the poll question. The poll was put to the electorate in association with the New South Wales local government elections in September 2012, resulting in an overwhelming vote against the development of the industry in the LGA. While there are policy and practise implications for this voting outcome for the LGA specifically, the success of the university-LGA partnership is also of interest from the broader perspective of regional governance and decision-making practices. This paper, therefore, reports not only on the process, but also on an evaluation of the university-LGA partnership and related processes.

8.2.1 Regional universities and regional government

By their nature, universities are sources of specialised knowledge, with a unique skill-base that can be used to contribute to decision-making and problem-solving. For those universities that are located in regional communities the nature and importance of this contribution is heightened. Regional universities can play an important role by participating in the governance of a region’s development via a range of pathways, including senior staff sitting on advisory boards but also the contribution made by faculty and staff contributing expertise (Goldstein and Glaser, 2012; RUN, 2013). In these ways universities can improve the steering capacity and effectiveness of governance whilst improving the competitiveness of the region (Porter, 2003). Five factors that create an environment conducive to university-regional engagement in Australia have been identified by Garlick (2000):

1. That knowledge-creation and transfer has become the most important ingredient for regions being competitive in the modern global economy.
2. Regions, more than nation states, are being considered as the appropriate platform for economic development in the global economy giving rise to tension between central institution policy development and community aspirations for regional development.
3. Universities, as publicly funded institutions, are increasingly being called upon to adopt efficiency and effectiveness returns, and, as a result, university campuses are being more tightly managed within an institutional framework.
4. The number (approximately 152) of publicly-funded university campuses throughout Australia, with around 30 percent of these being located in non-metropolitan regions.
5. A growing expectation by communities for the publicly-funded university in their local areas to be more than just a ‘good corporate citizen’ and to contribute leadership and targeted knowledge to strengthen the ‘sense of place’ that they are part of.

Key findings from a recent study undertaken by the Regional Universities Network (RUN) demonstrates that universities are able to play a critical role in regional governance from a knowledge and expertise perspective, with the alignment of mutual priorities around research and education, and interdependencies with other regional agencies (RUN, 2013). Where universities are considered to be ‘knowledge hubs’ for many regions often outside political constraints, such universities have made strategic decisions to invest in those areas of education and research that resonate with the needs of their regions. Such activities are able to benefit regions by providing access to the universities’ physical and intellectual resources, including the academic, technical and management expertise of their staff and students, which better equips them to make strong contributions to regional development (Goldstein and Glaser, 2012; RUN, 2013). The RUN study identified the distinctive positioning of regional universities.

*It is critically dependent upon their immersion in regional communities on a day-to-day basis, a deep understanding of their specific regional contexts and issues, and the mutually beneficial relationships and levels of trust, credibility and goodwill they have built through continuous and multiple interactions with regional organisations and communities over substantial periods of time (RUN, 2013, p.1).*

Whilst not only developing trust and relationships at different levels between organisations, Goldstein and Glaser (2012) argue that active partnerships between councils and universities can have a symbolic importance for the image of a city or region.

Southern Cross University (SCU) as a member of the RUN has a commitment to playing a transformative role in communities that comprise its regional footprint, including the Northern Rivers region (RUN, 2013). Further, the founding act of the University describes a principal function as being “the provision of courses of study or instruction across a range of fields, and the carrying out of research, to meet the needs of the community” (NSW Government, 1993, p.3). Part of the SCU mission states that, “We create and apply knowledge in partnership with our communities in fields that are regionally relevant and globally significant” (Southern Cross University, 2011, p.2) Collaborative partnerships are positioned as central to this strategic emphasis on mutual benefit. This paper describes a university/local government partnership
between Southern Cross University and the Lismore City Council that sought to achieve an independently-developed question for a community poll involving a controversial land use conflict around the rapid development of the coal seam gas (CSG) industry in the Northern Rivers of New South Wales.

8.2.2 Background to CSG and the Poll

The conflict between meeting growing domestic and international energy demands, whilst minimising greenhouse gas output, has led to the development of new energy resources in regions with little or no experience of mining exploration. With gas projected to be the fastest-growing, non-renewable energy source over the next 20 years (Geoscience Australia, 2012), Australia faces development of a non-conventional gas industry on an unprecedented scale (Clark, Crutzen, and Schellnhuber, 2005; Hindmarsh and Matthews, 2008; Irvine, 2011; O’Kane, 2013). Non-conventional gas extraction commonly uses a process of hydraulic fracturing (known as ‘fracking’) to access shale gas and CSG reserves from porous rock strata. Whilst the resources sector typically regards this as a low-risk method of extraction with a small surface footprint, others perceive it to involve unmanageable and unacceptable risks to (subsurface and surface) water and land resources (Brown, 2011; Duddy, 2011; RBS Morgans, 2011; Cham and Stone, 2013; O’Kane, 2013).

Following widespread reportage of potential impacts of gas industry development, community attention has become focused on the CSG industry, and on increasingly competing reports of potential negative and positive impacts of CSG projects (RBS Morgans, 2011). Criticism of the CSG industry has also been growing from a number of farmers, activists, scientists and celebrity advocates (Appelcamp, 2011; Kerr, 2011; Klan, 2011). As a result, strong views and a network of community action groups began to form across the country from around early 2011 (Lloyd et al., 2013; Luke et al., In Press). In August 2011, an online poll indicated that 83 percent of the Australian public was opposed to CSG (Sky News, 2011). In February 2012, The Australian published poll results stating that only 33 percent of respondents were in support of the CSG industry, with 27 percent still undecided, and 40 percent claiming to oppose the booming industry (Walker, 2012). Matters of contention that surround the CSG debate have not only been fuelled by unanswered concerns around issues of competing land-uses and landholder rights, but also due to a specific focus on potential water impacts and concerns relating to human and environmental health. Key concerns raised have also involved a lack of
sufficient research, operational processes, industry regulation and compliance (Luke et al., 2013; O’Kane, 2013).

Stretton (2006) emphasises the need for a more integrated approach to policy that recognises the interconnectivity of sectors of business, education and environment. He also acknowledges the challenge for politicians involved in arriving at policies that compliment and do not restrict each other. Many environmental problems call for judgments on risk-against-risk, lesser-versus-greater evil, choices of cheaper, poor quality goods over goods of higher quality and price. Trends towards sustainability promote movement towards increased community empowerment and participation in decision-making on local and national scales (Ostrom, Norberg, Wilson and Walker, 2008; Robinson, Styles, Evernden and Kirkham, 2013; Tallon, 2011). Natural resource management decision-makers often struggle to balance demands for economic development with associated environmental risks (Reid et al., 2010; Suzuki and Dressel, 2003). Whilst society faces a number of ‘grand challenges’, there are urgent calls for research and development towards mechanisms that allow science and society to address decision-making and the needs of citizens at global, regional, national, and local scales (Reid et al., 2010).

Participatory processes have been shown to provide citizens with a better understanding of key issues and potential outcomes, with a two-way process that values the experiential knowledge held by communities (Smith and Lazaro, 2006). Such approaches emphasise partnership with affected communities and interests to build capacity and resilience in planning and decision-making processes (Head, 2007). However, in the case of the CSG industry, members of affected communities have often reported feeling that they had not been adequately informed of the full implications of CSG development in their region (Kerr, 2011; Klan, 2011; Leser, 2011). This is hardly surprising given that it has been recognised that “Government in Australia, like government elsewhere, does not have a good track record of involving citizens in the development and implementation of public policy” (Hartz-Karp and Briand, 2009, p.135). For government and industry, there is a need to strike a balance between economic growth, ecological needs and social progress, as resource-extraction projects can have a significant impact on the local population (McGee, 2009; Labonne, 2009). Social expectations of industry are also changing, and thus there is increased pressure on the mining industry to improve the integration of environmental and social policy into its operations (Labonne, 2009).
The benefits of developing communication, transparency and trust between natural resource management agencies and natural resource users have been highlighted in previous research (Gray et al., 2012; Robinson, et al., 2013; Williams and Walton, 2013). As individuals gain insight into the motives, objectives and behaviours of others, cooperation and the level of trust between individuals and groups improves, and coordination across a diverse range of stakeholder groups increases. (Beratan, 2007; Beierle, 1999; Owen and Virderas, 2008). Such communication also decreases public perception of risk (Eiser et al., 2007), whilst increasing the likelihood of cooperative behaviours (Dickson et al., 2009). There is also evidence that suggests this may increase the overall resilience of social-ecological systems (Ostrom et al., 2008). It is for these reasons that community-engagement, embodying principles of participation, deliberation, trust, respect and empowerment has become increasingly adopted as good practice in regional governance in recent times. However, community-engaged approaches have not replaced old methods of hierarchical control and regulation, nor have dialogue and consensus-politics replaced interest group conflicts (Head, 2007).

The term ‘social licence’ has been gaining prominence in regards to the resources sector, in recognition of communities affected by extractive activities (Williams and Walton, 2013). Boutilier and Thompson (2011) explain the concept of social licence as reflecting the idea that a society or a section of its members can grant or withhold support for a company and its operations. Williams and Walton (2013, p.1) describe social licence as “tacit, intangible and context-specific”; also as ‘dynamic and shifting’ as people’s experiences and perceptions of an operation or industry may change. A divide has been highlighted in recent times in regards to community and industry expectations of consultation processes, with a public dialogue taking place around what, in practise, a ‘social licence’ may look like, and ways in which it may be achieved (Klan, 2011; O’Kane, 2013; Williams and Walton, 2013). An understanding of how various levels of stakeholder support are proportionally distributed throughout community networks can provide an important basis for informing an overall social licence (Boutilier and Thompson, 2011).

The community referendum, as a democratic method for ascertaining community sentiment and guiding policy, is one of the most promising processes to promote informed participation by citizens (McGee, 2009). Used in this context, such referenda represent a new and accurate measurement of whether a community has provided the free, prior and informed consent to proposed development as required under international law (McGee, 2009). Furthermore, when
people share their reasons in a dialogue about public problems, this may also cause greater sensitivity to broader public concerns (Fishkin, 2009). In the context of this paper, the application of community referendum marks a shift from ‘local government to local governance’ (Aulich, 2009) and provides one pathway towards “institutionalising” collaborative, deliberative participation known as deliberative democracy (Hartz-Karp and Briand, 2009).

8.3 Developing the Poll

On 10th April 2012 (Figure 40), the Lismore City Council voted to conduct a referendum-style community poll on the issue of CSG mining to determine community response to the issue across the Lismore LGA (Figure 40). The argument for the poll to be conducted was articulated in the mayoral minutes as follows.

> Despite the apparent community opposition, the actual level of that opposition can only be estimated. Indeed one communication to Council has stated that the apparent opposition to CSG comes from ‘reckless emotive “terrorist type” attacks by the largely unemployed and “rent a crowds” who are easily led by misinformation’ thereby implying that the real level of opposition is much less than might appear ... The results of the poll, albeit with non-compulsory voting and a non-binding outcome, would provide Council with the most accurate measure of our Local Government Area’s (LGA) attitudes on CSG (Lismore City Council, 2012a, p.5).

![Figure 40: Timeline showing an overview of the CSG poll question development for the Lismore City Council election poll, 2012.](image)

At the meeting on Tuesday April 10th it was resolved “that Council:
1. Conducts a poll in conjunction with local government elections to determine community support for a ban on Coal Seam Gas exploration and mining in our Local Government Area.

2. Informs the Division of Local Government, the Local Government and Shires Associations and NOROC Councils of this intention.

3. Suggests to NOROC Councils that each member Council might like to consider a similar poll.

4. Request staff prepare a report on the preferred wording for a poll question and the information for both Yes and No cases” (Lismore City Council, 2012a, p.6).

Six councillors voted for the motion (Councillors Houston, Dowell, Yarnall, Ekins, Clough and Smith, whilst five voted against (Councillors Graham, Battista, Meineke, Marks and Chant) (Lismore City Council, 2012a). As an outcome of the 10th April 2012 resolution, council staff were required to prepare a report on the preferred wording and the information for the ‘yes’ and ‘no’ cases. Southern Cross University (SCU) was invited by council staff “to assist in developing the question and to ensure an independent approach to the issue” (Lismore City Council 2012b, p.1). SCU agreed to the invitation from the Lismore City Council on a no-fee basis.

The referendum-style poll would be implemented by the Electoral Commission of New South Wales; hence the development of the question was guided by the Electoral Commission requirement that the poll could gain only a simple ‘yes’ or ‘no’ response. As the poll outcome would not be deemed legally-binding, it could not be termed as a referendum question, although the literature relating to referenda is highly transferable (Levy, 1983; McGee, 2009; Greenhill, 2013).

To maintain transparency of process and ensure best-practise community engagement (Cuthill, 2002; McGee, 2009; Kleine, 2012; Kumasi et al., 2010; Robinson et al., 2013), SCU researchers involved stakeholders from the outset. Stakeholder input was sought in the development and selection of the referendum-style poll question aimed at determining the community sentiment on the CSG issue in the Northern Rivers, NSW. A list of key stakeholders was developed, including the CSG energy companies, Metgasco and Arrow Energy, regional natural resource and agricultural bodies, Norco (an agricultural cooperative), NSW Farmers Association, Rous Water, the Environmental Defenders Office (EDO), and the
social protest group, Lock the Gate Northern Rivers. Individuals identified from each group were invited by email to suggest possible poll questions.

Due to time limitations set by the Electoral Commission (Lismore City Council, 2013c), there was less than a week available for feedback from stakeholders to be provided to SCU researchers. The majority of discussion in the stakeholder consultation took place via email, with an iterative process of refining the draft question. This involved individuals suggesting questions, which were further commented on, and subsequently revised, until three common question variations emerged. A number of stakeholder groups did not respond to this initial email, and one formally declined to participate. The Lock the Gate Northern Rivers group responded enthusiastically, with support from the EDO. This particular group represented a network of approximately fifteen local campaign groups active on the CSG topic. The email request that had originally been sent to one point-of-contact, was then circulated using a Google-group email to one or two individuals from each local campaign group, representing an estimated six hundred residents active on the CSG topic in the Lismore LGA.

To conclude the stakeholder consultation process, the three variations of the poll question, with relatively minor wording differences, were sent out to the original list of stakeholders. At this point the CEO of Metgasco, commented that since there was “very little exploration acreage in the Lismore shire” (Henderson, 2012, p.1), it would be more appropriate for other CSG companies to participate. He also stated that the poll would have little significance due to it being non-compulsory and non-binding, pointing out that “resource management is a state government, not a council issue” (Henderson, 2012, p.1).

The final preferred question developed by the community group network was, “Do you support the banning of CSG exploration and production in the Lismore City Council area?” This question was presented to Council on the 6th June 2012.

8.3.1 The final question

Drawing on best practice survey design with the intention to identify the clearest and least ambiguous question as possible (Blankenship, 1940; Gallup, 1941; Levy, 1983), the discussion at that meeting between SCU researchers and councillors focused on the two key topic variables in the question – exploration and production. It was acknowledged at the meeting that the inclusion of both should occur, given that CSG companies in the area were still in the
exploratory phase, and that the Electoral Commission had limited the poll to only one question. In their presentation to council the research team advised the councillors that:

1. Metgasco’s key concern was regarding the role that council will play in ensuring the provision of unbiased information to the local community.
2. This reinforces the need for information material developed by council to be clear and present both sides.
3. The researchers suggest a “for and against” sheet be produced with input from the opposing sides in the debate.

There then followed a discussion over whether the question should be posed in a positive or negative sense, in order to avoid a potential accusation of “push-polling” (Levy, 1983). It was acknowledged that putting it in a negative context may lead to industry fears of bias. Since there was no legal apparatus for the council to ban the industry, the word ‘banning’ was removed from the question. The final wording, approved by council vote was, “Do you support coal seam gas exploration and production in the Lismore City Council area?” Further discussions with Lismore councillors on the efficacy of the process led to a decision to qualify the responses with the use of exit polling. The survey process and results of the exit poll are detailed in Luke et al. (2013).

The Lismore City Council distributed information about the ‘yes’ and ‘no’ cases for the poll through the local media and at the polling booths, for four weeks prior to the election date. To maintain impartiality of process, the “no” case for the poll was developed by the core anti-CSG protest association, Lock the Gate Northern Rivers, and the “yes” case was developed by the resources industry group, the Australian Petroleum Production and Exploration Association (APPEA). Despite initial support for the poll, APPEA withdrew its support one week prior to the election date, stating that it found the question ‘leading’. Instead APPEA provided an alternative wording “Regardless of your personal feeling about Coal Seam Gas, do you support CSG for Australia’s economic and energy future?” (Broome, 2012). By this time the electoral material had already been printed and was awaiting distribution.

### 8.4 Poll Outcomes

The poll took place as planned on September 8th 2012, with 97 percent of all voters participating (a total of 25,595 votes cast), with a strong result of 87 percent of respondents voting “no” to the poll question (Electoral Commission NSW, 2012). Following this result, the
poll was used as a key piece of evidence for the Lismore City Council’s stance on the issue of gas developments, with a specific reference that a ‘social licence’ for the CSG industry had been ‘denied’ in the Lismore City Council LGA (Lismore City Council 2012d). In October 2012, following a 9:2 vote, the council resolved to write to all key ministers and MPs, urging them to call on federal and state ministers and MPs to acknowledge the poll result in parliament by opposing CSG activity in the Lismore LGA (Lismore City Council, 2012e). It was anticipated that the NSW Strategic Regional Land Use Plan would be developed for consultation within a twelve-month period. The council viewed the 87 percent “no” poll result as key in providing informed input into the plan, requesting that all licences for exploration and production in the Lismore LGA be revoked (Lismore City Council, 2012e).

In December 2012, the Lismore City Council voted (8:1) to approach the Northern NSW Local Health District to request that it carry out a health impact assessment on the possible impacts of coal seam gas (CSG) production on local residents. At the same meeting, the university-LGA partnership was further developed in regards to the CSG topic in particular, with the council resolving to request that the Northern Rivers Regional Organisation of Councils (NOROC) investigate the joint funding for SCU research into baseline groundwater data in areas of proposed CSG developments, proposing $30,000 per year for three years to match Australian Research Council Funding (Lismore City Council, 2012e). This proposal was also resolved by a vote by Council of 8:1.

Finally, the council voted (7:2) to erect five official signs quoting the poll result, to be placed at the gateways to Lismore including the airport, shown in Figure 41).
Figure 41: One of five signs erected by Lismore City Council to advertise the CSG poll result; this sign was still standing at the entrance to the City a year after the poll (Photograph: Hanabeth Luke).

8.4.1 Evaluation of the CSG Poll Development Process

To seek feedback from the Lismore city councillors regarding their views on the effectiveness of the engagement process of the council and the university co-development of the poll question, the Mayor of Lismore City Council, Councillor Jenny Dowell, was approached to seek comment from all councillors in August 2013. To elicit the personal perspectives of individual councillors, the issue was introduced thus:

SCU is reviewing the process of working with Lismore City Council last year to develop a poll question about CSG in the Lismore area as part of the September 2012 local government elections. SCU is seeking the views of Lismore City Councillors and General Manager as the primary stakeholders in that poll, on the process of the Council and the University working together to develop the poll question.

The Mayor distributed four questions to the councillors, encouraging them to respond directly to the research team.

1. What aspects of working with Southern Cross University to develop the CSG poll question worked well?
2. What aspects of working with Southern Cross University to develop the CSG poll question could have been improved?
3. Do you feel that you played a part in the development of the CSG poll-question?
4. Do you think that the CSG poll results had impact on policy at the local, state or federal level?

Three councillors responded.

8.4.1.1 What aspects of working with Southern Cross University to develop the CSG poll question worked well?

One councillor spoke in detail about this question, offering an opinion that the fact that the question was initially prepared independently of council worked well. This allowed the council to demonstrate to the public that there was no “political interference in the question”. In this context, this respondent also noted that eventually the councillors opted for a simpler question on the recommendation of council staff. A second respondent was of the view that the council
achieved a good question from the process, commenting positively on the documentation and explanation to councillors.

It was also noted that the council prefers to use the university for this type of work, since it provides both an opportunity for the council to support local activity and a meaningful learning opportunity for students.

8.4.1.2 What aspects of working with Southern Cross University to develop the CSG poll question could have been improved?

Two respondents commented, in different ways, on the challenges facing the university team in arriving at recommended versions of the questions. This was in part, according to one respondent, due to the problematic nature of the yes/no form of the question. Some councillors, suggested a second respondent, expressed suspicion about the framing of the question. This respondent suggested that further explanation of how to structure questions and about the skills and experience of university staff might have allayed these suspicions.

8.4.1.3 Do you feel that you played a part in the development of the CSG poll-question?

One respondent stated “yes and no”, drawing attention to the role of the council initially resolving to have a poll question at the election, and ultimately selecting the question to be put at the poll. On the other hand the respondent noted that the initial task was, “rightly, given to SCU as an independent party”. A second respondent felt that s/he had not played a part in the development of the question, but had been “kept in loop with the process”.

8.4.1.4 Do you think that the CSG poll results had impact on policy at the local, state or federal level?

While one respondent suggested that the poll result probably had an impact on local, state and federal policy, two indicated that this was undoubtedly so. One respondent was clear that the poll result had definitely had an impact at a local and a state level. This respondent noted that it was “very worthwhile [and that] it all depended on the phrasing of the question, and it was a good one”, commenting that “it might have been a less useful result if a different question was asked”. Another respondent commented that the poll result has led to changes in the council and its representations to state and federal governments, explaining that:

The 87% opposition has, together with community action, helped lead to state government legislative changes and possibly to the Federal Government water 'trigger' legislation. In LCC [Lismore City Council], it has strengthened resolve to reject CSG because we are able to demonstrate a robust process, high voter turn out and a very strong level of opposition.
That 87% poll result is irrefutable evidence of community rejection – it has allowed Council to reject the claims of CSG companies that the 'No' movement is just a loud, 'hippie' minority.

8.5 Discussion

Several themes emerged from the councillors’ reflections on the engagement processes of the university-LGA partnership. Councillors valued the independence of the research team and highlighted the importance of the process being collaborative, rather than consultative. In this regard, the embedded local nature of the university and researchers appears to have been important for the council, with the research team being valued as part of the council’s community.

The feedback from councillors has reinforced that the question wording was paramount in providing a sound result that could be fed into decision-making processes, and possibly into policy (Gallup, 1941; Levy, 1983; McGee, 2009). While none of the councillors who gave feedback commented on the contentious nature of CSG, it is likely that, given the prominence of the debate in the Lismore region, all parties came to this discussion with pre-determined understandings of the issue. These may not have been made as explicit as they could have been. However councillors clearly understood the importance of clarity of documentation and explanation, as well as the clarity of communication of roles and stages of the process as a partnership activity, in this instance between the university and the LGA. A future such exercise, from each party’s perspective, could be more formally structured. It is notable that councillors in their feedback played down the final decision process, in which the council effectively took ownership of the question. From the researchers’ point of view, this was highly significant, reflecting a successful outcome of the engagement.

Whilst the SCU and LCC relationship is a primary focus of this paper, it should also be noted that there have been further benefits from the university-LGA partnership. An important one has been the relationship between the university and the community, whereby members of different community groups became involved in the development of what they saw to be their own question. This provided a novel opportunity for community input into the decision-making process, which can also create a deeper relationship with the result (Kumasi et al., 2010; Robinson et al., 2013). The process of asking the poll question itself can also have an important transformative effect; Fishkin (2013) argues that the very act of being asked to form an opinion
on a topic can be likely to draw a person into a greater level of curiosity on a topic, hence increasing public engagement on an issue.

Although the council as a body (through its democratic process) had a majority support for the poll, consensus, as with many such initiatives, was not gained in the voting that took place in regards to the poll and poll development process (Lismore City Council, 2012b). This is unsurprising given the controversial nature of the topic in question, however may account for a lack of feedback from some of the councillors who were less supportive of the poll. Were it possible, it would be good to ascertain their reflections on the process, and whether its perceived success may have altered their views in any way. Despite a lack of initial consensus, the support for policy decisions relating directly to the outcome of the poll was much more broadly supported by councillors.

Data from the council minutes combined with the councillor feedback provided leads us to the conclusion that they were satisfied with three aspects of this work: 1. That the process was undertaken by independent SCU researchers. 2. That the process was communicated by SCU researchers; and 3. The involvement of the council following the provision of the SCU researchers advice. Given the sensitivity of the issue and the need for independent expert advice on the development of the question, this university-council process has demonstrated how university researchers can contribute to regional governance using their knowledge and expertise.

In terms of policy outcomes, the poll is considered to have been worthwhile. Locally, it supported council’s resolution on the matter, providing what council considered to be sufficient evidence to deny the CSG industry a social licence to operate in its LGA. The council also utilised the poll result as evidence to justify the commission of research into potential health and water impacts, whilst seeking support for its stance on CSG developments at a state and federal level (Lismore City Council, 2012e). Following the poll (and of course the election), resolutions passed on these council policy decisions gained support of up to 9:2 within the council, from an initial 6:5 when the first resolution for the poll was passed, suggesting less marked polarisation on this topic within the Lismore City Council following the poll.

At a state government level, the Liberal National Party (LNP) acted to increase the regulation of the CSG industry in NSW, including key changes to its Strategic Regional Land Use Policy regarding valuable agricultural land and residential areas. This included a two-kilometre buffer
for new CSG activities across existing residential zones, as well as lands identified for future residential growth in order to protect rural communities from perceived threats (NSW Government, 2013). Whether such changes will be sufficient for the 87 percent of Lismore residents, who voted against the industry, remains to be seen.

8.6 Conclusion

This evaluation of the processes involved in developing the poll question included reflection on the collaborative relationship between the Southern Cross University and the Lismore City Council. While the independence implicit in the university staff role was acknowledged as important, the importance of a university-LGA collaboration was also stressed. The value of a more formally structured process was noted, as was the importance of emphasising the university’s role as an advisory body only, and the LGAs ownership of the final decision. Feeding into decision-making processes such as these, the quality of the poll question was important, while, given the contentious nature of the issue and the highly volatile situation surrounding the social protest against CSG in the region, a rigorous and independent process around the development of the question was paramount.

Apart from the policy decisions made by the Lismore City Council as a direct outcome of the poll (and its input into state policy), additional policy implications include the critical role that regional Australian universities can play in regional decision-making and governance processes, and the potential for independent input to policy development processes for LGAs. This paper highlights the critical role that universities headquartered in regional Australia can, and should, play in regional governance. Further the poll process provides a robust method for ascertaining social acceptance of a controversial land use issue.

The collaborative processes described have helped to strengthen community input into regional governance and decision-making, effectively contributing to a more active citizenship for the university whilst aiding an important democratic process. Through an emphasis on community engagement, regional universities such as Southern Cross University position the health and vibrancy of the regions in which they are based as a key outcome for their teaching and research practices. This positions universities as catalysts for community and civic capacity, whilst reinforcing the importance of place particularly for those universities located outside metropolitan areas.
8.7 Reflecting on Chapter 8

Sub-question 4: How can community-engaged approaches inform decision-making regarding large-scale industrial developments?

In this chapter it is clearly demonstrated how a university can play a transformative role in its regional context, through the contribution of targeted knowledge to local leaders, towards the improved involvement of citizens in land-use policy and decision-making. The poll (and survey) outcome provided sufficient evidence that apparent opposition to CSG did not come from a “reckless emotive terrorist type”, or “hippie minority”, but from engaged and informed citizens, enabling the Lismore Council to take an official stance to oppose CSG development. This process and result directly influenced Council’s representations to the State and Federal government, with a Councillor suggesting that it influenced State-level policy changes in NSW, and possibly even Federal changes to natural resource-policy.
Chapter Nine: Social License for Industrial Operations: Drivers for a Spectrum of Social Positioning


The following sub-questions are responded to in this chapter:

Sub-question 1: What are drivers of social positioning for contentious land use change (for those who elected to support, not support or remain undecided on CSG developments)?
Sub-question 5: In which ways does the social, environmental and economic context of a project impact upon community level social license?

Sub-question 6: In what ways can the research findings be used to clarify or extend the social license concept?

Abstract

Coal seam gas (CSG) and other unconventional gas industries present significant planning challenges in regional Australia at a biophysical and social level. In particular, important questions common to contentious land-use debates have arisen around factors leading to the granting, or withdrawal of social license for a company, or industry, to operate in different contexts. This paper reports empirical data arising from an election-survey in the Richmond Valley Council local government area in the Northern Rivers Region (of New South Wales, Australia), a region where a social movement has been growing in opposition to gas industry developments. The study replicated the methodology of an election survey that took place in the neighbouring local government area of Lismore, enabling a comparison of motivators for a spectrum of social positioning to take place. The study found that positive and negative influences on rural livelihoods and the natural environment were the most important drivers of perceived legitimacy of projects. Social relationships, credibility of knowledge, identity and values relating to the case study context played a dynamic role in social positioning that ultimately led to community level social license withdrawal for CSG developments. In light of findings from this case study, the Thomson and Boutilier (2011) social license pyramid is extended to a diamond social license model that includes broader community positioning and processes of social license withdrawal.

Keywords: social license, survey, CSG, unconventional gas, extractive industry, trust.

9.1 Introduction

Large-scale industrial projects can create dramatic impacts on the nature of rural environments and the communities that live there. Non-alignment of land-use planning decisions with local community values can lead to conflict and potentially, social resistance (Stephan and Chenoweth 2008, Turner and Caouette 2009). Individuals within a community are likely to hold a range of different opinions regarding the values and/or impacts that developments may have in relation to their region (Prenzel and Vanclay 2014), and these in turn will affect their
‘social positioning’ on a project (Clémence 2001). Social licence is a term used to describe differing levels of community acceptance for an industrial project to operate in a given area (Boutilier, Black and Thomson 2012, Prenzel and Vanclay 2014). Whilst in some cases a company may gain and maintain an unwritten social license with a community, in other cases communities withdraw their social license and may take individual or collective social action to resist developments (Martinez-Alier 2001, Prno 2013).

To meet international energy demands, global expansion of the unconventional gas industry has occurred at a rapid pace (Control-Risks 2012, Uliasz-Misiak, Przybycin and Winid 2014, Bocora 2012). Unconventional gas drilling, which includes coal seam gas, shale and tight sands gas resources commonly uses a hydraulic fracturing process for extraction. This process extends the footprint of the activity from the above-ground network of wells to sub-surface regions and artesian water resources (Holditch 2013). Unconventional gas exploration and extraction has taken place in Australia for two decades, with a focus on coal seam gas (CSG) drilling that has been expanding rapidly since 2009 (Geoscience-Australia 2012). Perceived impacts became a source of community concern, leading CSG development to become a prominent topic for land-use planning and government decision-making (Bocora 2012, Sutherland et al. 2011, Luke et al. 2014b, O’Kane 2013).

Australian land use planning, where significant assets are not impacted, is decentralised and under the jurisdiction of State rather than the National government, therefore a variability in controls and community tolerance of extractive industries is reflected across the states. For example the Australian State of Queensland has been facilitating rapid CSG industry expansion that includes extensive drilling, pipelines and export facilities resulting in a range of opportunities and challenges in regional areas (Measham and Fleming 2014, Freij-Ayoub 2012, Luke et al. 2014b). At the same time, the neighbouring state of New South Wales (NSW) has been criticised for taking a more cautious policy approach (APPEA 2015, Tasker 2015). The New South Wales (NSW) government responded to community protests, particularly from their traditional support base, by removing a five-year royalty holiday and commissioning inquiries into the social, environmental and economic costs and benefits of the CSG industry. New regulatory frameworks slowed down the industry roll-out across rural landscapes (O’Kane 2013, Brown 2012, Hazzard, Hodgkinson and Hartcher 2013, NSW-Government 2013).

Reflections on issues faced across the Queensland border and in the United States stimulated discussions on aspirational outcomes for some rural areas, with speculation on what may

9.2 Social License

A social license is an unwritten social contract between a company and community that is fundamentally intangible, based upon the premise that a community or society is able to grant or withhold support for an industry to operate in a given area (Joyce and Thomson 2000). With social impacts potentially occurring from the first rumour of a project (Prenzel and Vanclay 2014), social license can be viewed as a continuous process that occurs over the life of the project (Parsons and Moffat 2014). As raised community voices become more influential in resource decision-making on a global scale (Prno and Slocombe 2012, Martinez-Alier 2001, Muradian, Martinez-Alier and Correa 2003, Rasch and Köhne 2015), social license theory is being developed in the context of extractive industries where there may be competing land uses.

Boutilier et al. (2012) view improved frameworks for social license as a means to “reduce the undesirable kind of political instability”, described not only as politics at the electoral booth, but also socio-political activity that could affect social norms, policy or legislation. With stakeholders defined as individuals or groups that are at risk of being affected by a project, or are a risk to the project (Boutilier, 2014), community resistance is viewed as a risk to be minimised (e.g. Control-Risks 2012). Whilst community power may be limited by the actions of police or military force, resistance can lead to unforeseen costs and uncertainty for industry as governments address concerns by altering regulatory frameworks (Prno and Slocombe 2012, Boutilier 2014). A primary focus of the social license literature centres upon the ways that constructive relationships between industry and community can be fostered, with unifying drivers being engagement, relationship building and trust (Prno and Slocombe 2012, Nelsen and Scoble 2005, Lynch-Wood and Williamson 2007). Community support for an industry can come in the form of explicit support; (reluctant) acceptance or lessening opposition (Owen and Kemp 2013).
9.2.1 Components of social license

Legitimacy, credibility and trust are important factors that will determine how a community will move up through three distinct boundaries of the social license model (Figure 43) (Boutilier et al. 2012). The ‘legitimacy’ boundary is the minimum level of acceptance, achieved when perceived personal losses will outweigh gains, and people perceive that their concerns will be addressed. Williams and Walton (2013) extend the social license model by placing ‘economic legitimacy’ at the first level, meaning that people see the project contributing to the economic ‘wellbeing’ of the region. If there is no perceived legitimacy for an industry or company, then their social license is effectively withheld or withdrawn.

If, on the other hand the company or industry convinces the community of their credibility by addressing concerns and keeping promises, then they may be able to move up beyond mere acceptance into ‘approval’. Williams and Walton (2013) split the ‘approval’ level into two, first with socio-political legitimacy where the company appears to contribute to the wellbeing of the region and acts fairly in the eyes of stakeholders, followed by interactional trust, with industry credibility strengthened by the perception that the company listens and keeps promises. If they are then able to move beyond the highest boundary of ‘trust’, or ‘institutionalised trust’, then ‘psychological identification’ is able to take place. Once a stakeholder moves to this point, then they are likely to have full faith in the company in question, and, seeing their own identity and future intertwined with it, are prepared to fight for the future of the project (Boutilier et al. 2012). At his point, an ‘enduring regard for each-
others’ interests’ is felt between industry and stakeholder institutions (Williams and Walton 2013, 4).

9.2.2 Using the social license pyramid to explore dynamics of social positioning

The social license pyramid can be used as a tool for considering different levels of community engagement with an industry, from acceptance to identification, and social license withdrawal. A CSIRO survey was carried out in the Western Downs region of Queensland in early 2014 when CSG industry developments were in full swing. Community perspectives identified by the survey fit very neatly into the social license pyramid, with 8% ‘embracing’; 14% ‘approving’; 37% ‘accepting’; and 33% ‘tolerating’ the CSG industry. Conversely, 9% reported to ‘reject’ the industry (Walton, McCrea and Leonard 2014). This data translates to 91% of survey respondents supporting the CSG industry in the Western Downs, hence validating its social license to operate. Despite this strong and clear response, other data reveals underlying tensions.

A question on community attitudes revealed that while only 9% had elected to reject the industry; 15% of respondents declared themselves either resisting or not coping, meaning that 6% of survey respondents still chose to accept the industry despite a major dislike for it, and a third of respondents who reported to be ‘only just coping’ elected that they were indeed ‘tolerating’ it, which is still a measure of acceptance (Walton et al. 2014). Why this is so remains unclear, as motivators specifically for the different levels of social positioning were not a focus of this study (i.e. results were not categorised by group). What the survey did identify was high levels of community connectivity, along with strong place attachment and local identity (‘community spirit’) that are may influence normative views (Tajfel 1974). Environmental and road impacts; decision-making and citizen voice received the lowest scores on average for all respondents, which suggests low levels of empowerment regarding planning decisions.

An analysis of two United States counties experiencing shale gas developments focused upon how perceived economic benefits and environmental threats influenced perspectives of the industry (Kriesky et al. 2013). A general acceptance of the industry was apparent in both counties. In the county where 30% of family livelihoods were linked directly to the industry there was a significantly greater likelihood that they would view drilling as a positive opportunity, moving up through the higher tiers of the social license model. This occurred despite the majority from both counties also considering the industry to present a threat to
human and/or environmental health, hence economic values played a more important role in
community positioning in this case (Kriesky et al. 2013). Kriesky et al. (2013) suggest that a
more in-depth investigation of drivers contributing to opinion formation would provide further
insight.

9.2.3 Drivers of social license acceptance or withdrawal

Factors associated with the establishment or rejection of a social license to operate were
analysed in the cases of four international mining developments (Prno 2013). In two cases the
company maintained a social license, while in the other two cases the projects were rejected
by the local community. Whilst Prno (2013) acknowledged that these outcomes were the result
of dynamic interactions between multiple variables, it was concluded that regional context
including social, environmental and economic influences played a pivotal role in achieving or
not achieving a social license to operate. They deemed social license to be principally built on
relationships, with adaptability, local engagement and benefit provision playing a crucial role,
however they also identified concerns around sustainability as a dominant theme.

Whilst other research does not place such a great emphasis on context; trust, gained through
relationship building and community engagement, has been identified as the only consistent
predictor for improving community acceptance at all levels of social license (Parsons, Lacey
argue that trust plays an especially important role in the context of high uncertainty, with
distrust high where insufficient knowledge is available to make lay judgements. Residents are
then forced to weigh up potential risks and benefits based on their own assessment, or level of
trust towards industry representatives (Siegrist and Cvetkovich 2000). In this context,
relationships between industry and community play a larger role, hence community
engagement and relationship building can have an important influence on positive associations
and therefore support of industry (Parsons and Moffat 2014, Robinson et al. 2013, Uslaner and
Brown 2005, Prenzel and Vanclay 2014). Relationship building and social dynamics can lead
to shared ideas and increased connectivity, or potentially, exclusion where identity, values
and/or views are not perceived as compatible (Luke et al. 2014a, Lloyd, Luke and Boyd 2013,
Colvin, Witt and Lacey 2015).
9.2.4 Drivers for social positioning on industrial developments

Drivers for social positioning regarding industrial developments can involve factors relating to socio-demographics, environmental values, economics, planning process and proximity to developments. Women and minority groups are the only socio-demographic categories that are consistently more likely to oppose energy industry developments (Boudet et al. 2014).

A common claim of industry proponents is that community resistance towards projects can be attributed to ‘NIMBY’ (‘not in my back yard’) opinions (Boutilier 2014). Research on public perceptions relating to proximity for other industries have found the NIMBY analogy to oversimplify the rationale for negative responses to developments, with other drivers often found to be more important (Stewart, Pullin and Coles 2007, Jacquet 2012, Boudet et al. 2014). Higher education levels and income have been found to be associated with opposition to natural gas drilling (Jacquet 2012, Colvin et al. 2015) and support for wind power (Firestone and Kempton 2007), however these findings have not been consistent across the literature (Boudet et al. 2014).

Legitimisation is a precondition for social stability, hence when a decision is made via a process that is viewed as legitimate, people are able to accept it even if they don’t necessarily agree with it (Muradian et al. 2003). Therefore, legitimisation of planning decisions is dependent upon people agreeing with rules relating to the process, known as procedural fairness. If the process is deemed to be unjust, then there is greater potential for community resistance (Martinez-Alier 2001). Perceived procedural injustice is a powerful driver for all types of community resistance, and environmental values, place identity and attachment have been found to be consistent predictors of the emergence of land-use conflicts (Boholm and Löfstedt 2004, Boudet et al. 2014, Muradian et al. 2003, Kyle et al. 2004a, McManus and Connor 2013). Muradian et al. (2003) argue that environmental issues can be just one influencing factor within a land-use conflict that is essentially a civil rights movement. Previous rural land-use conflicts have been referent to as a “value-system contest” over not only land-use, but also what a legitimate decision-making process consists of (Muradian et al. 2003, 788). Whilst some legal dimensions have been explored (Turton 2015b, Turton 2015a), less is known regarding the role of how value-systems at a community level can influence social license for Australia’s unconventional gas industry.

Surveys that took place in the United States found that the basis of a right-wing ideology was one of the most important drivers for support of industrial developments such as oil and gas,
as was an ‘egalitarian’ world-view a primary driver of non-support (PRCPP 2012, Boudet et al. 2014). Worldview and ideology, whilst providing interesting insights, may over simplify the issue. Whilst left-wing and right-wing ideologies can sometimes provide a neat ideological contrast, other studies have found that different aspects of the value-systems embedded in both ideologies can be triggered by industrialising processes (Colvin et al. 2015, Boudet et al. 2014). To provide an example, those with right wing ideologies strongly value the sanctity of private property and property rights and tend not to favour change, whilst those who favour left-wing ideologies typically view the world from a justice and conservation perspective (Boudet et al. 2014). Industrial developments can directly affect both, and shared values from those who may come from different ideological perspectives have been found to be a greater unifying force for those who choose to participate in social action (Colvin et al. 2015). For this reason, this paper will take a greater interest in more specific drivers of social positioning over categories of value-systems. Whilst some community concerns may be addressed by improved research and technical solutions (such as those outlined by Jenner and Lamadrid (2013)), this may not possible due to the presence of conflicting value systems (Muradian et al. 2003).

Social positioning on industrial developments is often informed by values that relate to existing material conditions and livelihood opportunities, but is also driven by how people view the environment, concepts of sustainability and perceived risks (Rasch and Köhne 2015, Muradian et al. 2003, Percival 1992). Reducing emissions to combat climate change is a prominent media topic that has received broad public support (e.g. Aird 2015), and rural residents in areas experiencing gas industry development are able to engage with the broader energy debate. A personal assessment of how proposed developments fulfil the objectives of a low-carbon energy supply can have an influence upon rationale for accepting or rejecting energy developments (Shackley, Mander and Reiche 2006, Kriesky et al. 2013, Jacquet 2012). Values that residents place on the natural environment have been found to be the most important driver of negative attitudes towards extractive industry developments, a far more consistent predictor than proximity (Jacquet 2012, Michaud, Carlisle and Smith 2008). Existing values can shape the way new information is interpreted and processed, and drive the self-selection of new knowledge (Stern et al. 1999, Stretton 2006). Existing value-systems can affect the information that we seek out, how we interpret it, and what information we avoid (Hansla et al. 2008).

The type or nature of an information source can influence view-formation. Local press is more likely to be responsive to community opinion, hence reinforce existing views (Shackley et al.
In America, regular television viewers were found to be more likely to support shale gas developments, with newspaper readers more likely to oppose (Boudet et al. 2014). Media narratives can play an important role in shaping community positioning (Jaspal and Nerlich 2014, McManus and Connor 2013, Evensen, Clarke and Stedman 2013). When both ‘sides’ focus heavily upon the various risks and threats involved, this has the potential to drive increased polarisation of views. Positive media constructions portray unconventional gas as providing a long-term source of clean, green energy, normalising the industry and processes involved. Other publications portray the gas industry as ‘choking’ green energy, highlighting unease and fears surrounding industry processes and developments (Jaspal and Nerlich 2014). Challenges have been felt by scientists wishing to inform the public debate (Molinatti and Simonneau 2015, Evensen et al. 2014). Similar trends of polarisation have also been portrayed in conflicting scientific reviews, (e.g. Howarth, Ingraffea and Engelder 2011), with both extreme caution and technological solutions presented in regards to the hydraulic fracturing, or fracking process.

A consistent driver of positive attitudes towards industrial developments is whether individuals or family members had worked for, or financially benefitted from the industry in question (Shackley et al. 2006, Jacquet 2012). In addition to the financial benefits involved, such transactions are likely to increase personal experiences and discussions with industry representatives, with exposure to industry representations and perspectives (Jacquet 2012, Kriesky et al. 2013). Unequal distribution of costs and benefits from developments can, however, have a fracturing effect upon communities (Langton and Palmer 2003, Martinez-Alier 2001). Previous experience with industrial land use has been found to aid industry acceptance in some cases (Everingham et al. 2013), whilst stories of industrial issues and failures from other times and places have been used to support rationale for rejecting new projects in other cases (Shackley et al. 2006, Luke et al. 2014b).

### 9.2.5 Who grants social license?

Exploring the role that governance and institutional relationships play in terms of shaping social license processes and outcomes, Prno and Slocombe (2012, 347) describe the granting of social license by “society as a whole” that assumes “governments, communities, the general public and media” to be supportive. They then go on to define local communities by their “proximity…and ability to affect project outcomes”, highlighting an issue over definitions of what ‘community’ consists of, and which groups are important for determining social license
Social license for industrial developments in rural areas

Claims are often made by politicians, industry and NGOs that they represent ‘the community’, whereas the community is in fact a complex umbrella name for multiple stakeholders (usually living within certain geographical confines) who may have divergent and contrasting views (Berkman et al. 2000).

Williams and Walton (2013) make a distinction between local geographical communities and other groups such as investors, international activists and governments; however there may be a blurred line when such actors may exist within a community. Boutilier (2014) explores this complexity, and whether communities should have a ‘veto’ on industrial developments when social license is withdrawn. They question whether social actions are likely to be representative of the wider community, with the use of referenda or valid opinion polling seen to lend greater legitimacy to ‘social obstructions’.

Prno (2013:586) argues that it is “only when a community feels their vision of social, economic, and environmental sustainability is being supported, or at the very least isn't being threatened, will they begin to contemplate issuance of a social license to operate”. With the exception of Owen and Kemp (2013) and Prno (2013), little work has yet been done to place social license in the broader context of sustainable development, or to understand drivers of social license issuance or withdrawal. Boutilier (2014) himself calls for research that can bridge the divide between understandings of social license for industry, community and governance. This paper will fill this gap by focusing upon the Northern Rivers case studies to better understand processes of social license withdrawal.

9.2.6 Community opposition to the industry

Whilst some regions either remain passive or embrace the boost to job prospects and regional economies, other communities have become hotspots for social action. Resistance movements that form in response to land-use planning decisions frequently challenge top-down or unfair government approval processes to reclaim the community as a legitimate scale for decision-making (Urkidi 2011, Muradian et al. 2003, Martinez-Alier 2001). For rural communities, this makes sense for this where the majority of impacts are likely to be felt (Martinez-Alier 2001).

The Northern Rivers region of far north NSW is one such place experiencing organised community actions, extending from petitions to marches, protests and landholder visits to Parliament (Lloyd et al. 2013). In the context of this region, this was most important for Metgasco, one of the main exploration companies that held petroleum exploration licenses in
the Northern Rivers. Metgasco also held land access agreements for seismic surveys with about 400 landholders and four agreements for exploratory drilling. Extensive activism throughout 2011 and 2012 including marches of up to 7,000 people culminated in a request from elected local government officials to quantify community attitudes to CSG developments as a land planning issue (ABC 2012, Luke et al. 2013).

Lismore City Council engaged researchers at Southern Cross University to facilitate community development of a referendum-style poll question to guide the Council’s response to the issue of coal seam gas (Luke et al. 2013). The yes/no question put to voters by the NSW Electoral Commission at the 2012 local council election was: “Do you support coal seam gas exploration and production in the Lismore City Council area?” With a 97% voter participation rate, 86.9% voted ‘no’, while 13.1% voted ‘yes’ (Luke et al. 2013). An exit survey followed the poll with the aim being to examine motivations for social positioning on the topic (Luke et al. 2014b). The ‘no’ result of the survey question (identical to that of the poll) was 87.2%, indicating a representative survey result. The full results of this survey can be found in Luke et al. (2014b).

It was, however, around the neighbouring town of Casino in the Richmond Valley local government area (LGA) that the majority of gas exploration was taking place in 2013, and, according to industry sources, had strong community support (pers. Comm. Peter Henderson, CEO, Metgasco). These differences between the two areas led us to replicate the survey, during the following Federal election, to test for regional variations in responses. The Richmond Valley has a profile that is perhaps more typical of the Australian broadacre farming regions that represent 95% of all agricultural land-use, taking up 55% of the Australian land mass (Nelson et al. 2007). The comparison of the Lismore area to this more mainstream oriented area of Casino is therefore especially relevant for discussions around the social license to operate for the CSG industry in rural Australia. Prno (2013) argues that the regional context of projects play a crucial role in social license development, hence a detailed background to the case study region of the Northern Rivers, focusing on the local government areas of Lismore and Richmond Valley, is provided below:

### 9.3 Background of the Northern Rivers region

The underlying geology of the Northern Rivers comprises sandstones and other sedimentary layers, which are source rocks for gas deposits. A geological and climatic line cuts between
Lismore and Casino, with eroded volcanic topography creating rich chocolate and kraznozem soils (McKee et al. 2001) with almost 50% more rain on the Lismore side of this line (BOM 2015). World Heritage rainforests in the hills to the north of Lismore contribute to the high biodiversity values of the region (Lismore City Council, 2015a), and multiple national parks cover both LGAs. Although the topography to the south of the Richmond Valley LGA is more varied and densely forested, the land surrounding Casino is predominantly flat, providing ideal conditions for broadacre farming (McKee et al. 2001).

In addition to a rich Indigenous culture, settlers began to establish themselves in the Lismore and Richmond Valley area from the 1840s seeking cedar, and with the granting of pastoral leases. From the mid-1800s, Casino and Lismore competed to be the regional centre, however with rivers being the main transport routes, Lismore took the role by the 1890s (Lismore City Council, 2015a). In addition to growing arable crops, it became the richest Australian dairy district, with primary industries supporting shipbuilding, transportation, saw milling and tallow manufacturing. Free settlers and subsistence farmers took up areas of dense forest unsuitable for running cattle. Following World War Two, Lismore continued to grow whilst many rural areas were losing their youth population (Lismore-City-Council 2011).

Casino became a regional rail and freight hub, as well as an agricultural service centre. In the last decade of the 19thC the town hall was built, and about a century later the first annual Beef Week was celebrated. Casino today is known primarily for its beef production, calling itself 'The Beef Capital'. With a population of 22,749 living in an area of 3047km², half of the Richmond Valley population currently lives in Casino (11,082). The remainder of the population is distributed throughout the areas and in the smaller town of Evans Head, dependent upon tourism, fishing and sugar cane (Stubbs 2007). The Richmond Valley LGA is heavily dependent upon the cattle industry, with the biggest employment industries related to meat products, followed by schools and farming (ABS 2015). With a high average age, low economic diversity and low socio-economic ranking (ABS 2006), the Richmond Valley also has a dependency ratio of 66% (compared to 50% in Lismore and NSW) (Lawrence-Consulting 2013). The Richmond Valley Council website declares that it is ‘open for business, determined to revitalise its economy and aging population (Richmond Valley Council, 2015b).

The Northern Rivers is often referred to as the ‘Rainbow Region’, an identity that can be dated back to the Aquarius festival of love and peace that took place in 1973. A new generation converged to the north of Lismore to discuss new ideas that embraced sustainability and
communal ways of living. Many who established themselves in the region transformed the existing population (Lismore City Council, 2015a). Several issues prompted environmental activism and protest, some with significant success. The Terania Creek protests of the 1970s led to the historical decision to end rainforest logging in almost 1m hectares of NSW forest (Bible 2007). Photographs of the Aquarius festival have prominence on the ‘visit Lismore’ website, calling itself the ‘heart of the Northern Rivers, describing Lismore as a place “renowned for its extraordinary natural beauty, amazing cultural diversity, relaxed lifestyles and quirky charms; a place where old school blends with new age and nature sets the pace.”

Lismore City Council is more densely populated and urban focused than the Richmond Valley, with 44637 residents living in an LGA of 1288km² (ABS 2015). Two thirds of the population live in the main town with the rest scattered across rural areas. Now a regional centre for health, education, sporting events and the arts, Lismore has a wide range of education, health, service and horticultural industries. With a gross regional product 34% higher than the Richmond Valley and double the number of bachelors degrees per capita, residents enjoy higher wages and diversity of employment (ABS 2015, Lawrence-Consulting 2011, Lawrence-Consulting 2013). The voting history of the Richmond Valley and Lismore differs depending upon the level of government, with the State-level seat held by the National party for many years. (The-Tally-Room 2015).

An understanding of these geographical attributes of these rural case studies provides a context for understanding how communities position themselves regarding social license for new industrial developments. This synthesis adds to the social license literature by exploring how the context of local attributes and values influences the social license of industrial developments.

9.4 Methods

A comparative case study approach was taken to answer the research question “What are the dynamics of social license for industrial developments in rural landscapes?” The rigorous methodology of the 2012 Lismore election-survey was replicated, including the poll question, one year later in the Richmond Valley LGA (Luke et al. 2014b, Yin 2003). A follow-up survey at central Lismore booths allowed us to determine if community sentiment had significantly changed over time, enabling a reasonable comparison to be made between the two LGAs (Kleine et al., 2012).
The option of a “yes”, “no” or “undecided” response was required for the survey question: “Do you support CSG exploration and production in (your) local government area?” The rest of the questions from the 2012 survey were replicated using the structure of the theory of planned behaviour (Ajzen 2001, Luke et al. 2014b). Due to four additional questions in the 2013 survey, two pilot surveys were run to ensure clarity of response, with the project approved by Southern Cross University Human Research Ethics Committee (ECN-13–088). New additions included questions regarding any personal actions taken to support or oppose the CSG industry. In order to build upon the quantitative responses, and to gain greater insight into the motivations behind their different perspectives, respondents were also asked to write down the reasons for their views in an open question. A key aim of the survey design was to capture as much information as possible in a short space of time without leading respondents to answer in any particular way.

Survey volunteers were posted across all main voting locations in the Richmond Valley LGA, with the largest samples gained from Casino Civic Hall and Evans Head, and the smallest proportions coming from the rural southern booths. Such proportions were expected and prepared for, as voter numbers at the different booths can vary from 100 to over 3,000 voters. Quantitative data was analysed using SPSS Statistics, with Nvivo and Wordle used for the analysis and display of the qualitative responses. Results are often grouped into positioning on the topic to enable separate analysis for discerning motivations for support or non-support.

Whilst previous research has relied upon purely quantitative or qualitative techniques to examine community positioning on gas developments in different communities (e.g. Kriesky et al. 2013, Mercer, de Rijke and Dressler 2014), this study uses mixed-methods to explore contextual and conceptual differences in addition to equivalence measures (Neuman 2011). Survey results and ABS data have been used to deal with equivalence measures. Conceptual comparisons include the discussion of emergent themes influencing levels of social license according to Thompson & Boutilier’s (2011) model, whilst qualitative historical information has been used to explore social-cultural norms and identity. Culture is a dynamic mix of shared symbols, beliefs, languages and practices, defined as: ‘the way of life, especially the general customs and beliefs of a particular group of people at a particular time’ (Cambridge-Dictionary 2014). By utilising elements of both the natural sciences and humanities, these foundations of equivalence reconcile perceptions that science and culture are distinctly separate entities (Head, Trigger and Mulcock 2005). Using mixed-methods allows for a holistic analysis of the
dynamics of social processes influencing social license in the context of these case study regions.

9.4.1 Research limitations

Whilst the Lismore survey was a part of a larger democratic process involving the CSG poll (e.g. Luke et al. 2013), the situation was different for the Richmond Valley election-survey. Whilst there was no official poll, the Richmond Valley and Lismore share important regional media such as the Northern Star and ABC North Coast, therefore cannot be considered to be in a knowledge vacuum. Richmond Valley had also been targeted for an information campaign by the regional arm of Lock the Gate, subject to forums, meetings and leaflet campaigns. Strong community views can make it difficult for those with different opinions to have a safe space to express them (Luke et al. 2014b) Despite some differences in the circumstances of data collection, both surveys provided a safe space for people to anonymously share their views of the proposed developments, which closely aligns with processes of deliberative democracy (Luke et al., 2014).

9.5 Results and Discussion

By linking the survey to the election the researchers were able to gain a sample size of just over 5% of all those voting (11,917) in the Richmond Valley LGA at the federal government elections. Given the sample size, the confidence interval was calculated to be 4% in both LGAs. A demographic profile of survey respondents was found to be representative of the broader demographics of each LGA when cross-checked with ABS population data. Voting intention on the day was also cross-checked with data from the NSW electoral commission and found to be representative.

9.5.1 Community positioning on CSG developments

In both the Richmond Valley and Lismore City Council areas, the majority of respondents were against gas industry developments, which was found to be the case whether comparing across booths or party affiliations. Figure 44 shows respondent positioning in regards to gas industry developments, with 18% of residents in support, 65% against, and 17% undecided. This was a much higher “yes” vote than the 5.6% in the Lismore LGA (Luke et al. 2014). The “no” result in Lismore was 84.9% in 2013, as those “undecided” increased from a proportion of 7.3% to 10.1% of respondents. Of those who gave their occupation, the most common response in the Richmond Valley survey was that they were retired, and following this, the most common
occupations were farmers, teachers and students. The most common occupations listed by respondents in the Lismore survey were students, teachers and mothers, in that order, followed by retirees.

In locations across the Richmond Valley LGA, the ‘yes’ response for CSG development varied between 6-30%, while the ‘no’ response varied between 48-80%. The largest ‘undecided’ response (38%) came from a small rural booth. The strongest support was found in Casino town booths, with rural booths having generally lower support. When results were divided between Casino and the rest of the Richmond Valley booths, 22% of respondents in Casino supported the industry compared to 14% of rural respondents. A greater proportion of rural voters were undecided (19% compared to 15% of Casino voters) or against, with 67% compared to 63% of Casino respondents. In Lismore, however, the same differences were not apparent, with negligible differences between rural and city booths. Whilst younger people were slightly more likely to support the industry, women were much more likely to oppose the industry, with a ten percent difference between male and female opposition, consistent with the findings of other surveys regarding social positioning on industrial developments (Boudet et al. 2014).
question: “Would you be prepared to change your mind, if credible evidence arose that the impacts of CSG were lesser or greater than you now think?”

In both LGAs, over 70% of non-supporters had ‘very strong’ feelings against the gas industry while just over 40% of supporters were ‘very strong in favour’. Of those undecided, there was a slight lean towards being against the industry in Lismore, which was not apparent in the Richmond Valley. When asked whether they would be willing to change their minds in the light of new evidence, industry supporters in the Lismore LGA were the most likely to, whilst non-supporters in the Richmond Valley survey were the least likely to alter their position. Despite these variations, trends of strength of feeling according to viewpoint were comparable across the LGAs (Figure 44). These results show that many of these individuals who have withdrawn their social license are unlikely to alter their position, with just under half of those who were strongly opposed having taken direct personal actions to resist CSG development. Once people are at this point it becomes less likely that the industry could convince them to change their stance, and at this stage of developments (and of the social movement) it is evident that strength of feeling in favour of the industry is less calcified. Strength of feeling was cross-tabulated with voting intention, showing that whilst there was a clear majority of Green Party and Labour voters strongly opposed to the CSG industry, Liberal-National Party (LNP) voters were divided. Whilst the largest proportion opposed the industry (41%), industry supporters accounted for 33% of LNP voters surveyed, with 26% still undecided.

9.5.2 Motivations for social positioning

Perceptions of what the gas industry would bring to the region were important motivating factors in how people positioned themselves on this topic, with perceived impacts and benefits prioritised in Table 1. At first glance, a stark contrast between the priorities of supporters and non-supporters is evident, indicating a polarisation of perspectives and values that is consistent with other studies (Mackie 1986, Cheshire and Lawrence 2005). Environmental concerns are a strong motivator for non-support, as has been found in previous studies on environmental resistance movements (Martinez-Alier 2001).
In both LGAs, non-supporters listed the same priorities, although there were differences between the LGAs for industry supporters. The provision of jobs was a proportionately higher priority for Richmond Valley supporters, whereas in Lismore perceived benefits were more evenly spread. For those undecided, the mix of their priority selection suggests that in a black and white polling situation, many would be more likely to vote ‘yes’ to the industry, especially if a technological solution were provided for potential water impacts.

The word frequency diagrams in Figure 45 reinforce the priorities in Table 5 by summarising qualitative responses from those with different positions on social license for CSG developments in the Richmond Valley. A comparison of emergent themes between the Lismore and the Richmond Valley is shown in the lower chart. These responses demonstrate a full range of motivators for different positioning on social license, which relate closely to background attributes of the LGAs, and to cultural values of the region, which will be explored in the following pages.
Figure 45: Emergent themes from the qualitative data: the Wordle™ graphic highlights key motivations for perspective of the CSG industry in the Richmond Valley (upper), and then compared against Lismore results (lower).
9.5.3 Legitimacy and rural livelihoods

9.5.3.1 Perceived benefits

Deeper community values became apparent through the qualitative responses, which appeared to be important motivating factors for accepting or rejecting the industry: Thomson & Boutiliers’ (2011) ‘Legitimacy’ boundary. The most prominent motivation to support the gas industry was the desire for jobs: “Jobs - area needs work”; (clean) energy “Better than coal or atomic energy”; and industry taking priority: “We need clean energy to meet future needs and this industry needs opportunity”. Socio-economic factors indicate that the prospect of increased employment was important for the higher proportion of ‘yes’ voters in the Richmond Valley survey.

The environmental and historical profile of the Richmond Valley LGA has led to it being heavily dependent upon the cattle industry, hence is relatively homogenous in its present-day economic context (McKee et al. 2001, Lawrence-Consulting 2013). With per-capita regional product being one third less than in the Lismore LGA, most employment industries generate a lower wage in the Richmond Valley (Lawrence-Consulting 2013). Studies in Queensland show that the CSG industry can provide much higher wage opportunities for tradesmen and for a lower-skilled workforce, especially during the development phase (McCarron and King 2014). This, and the knock-on effect of improved employment and other investments in the region could be tempting for a town seeking to attract new investment. Rejuvenated business opportunities and improved services in the town centre could also attract younger people to the area. This provides credence to the rationale for Williams and Walton (2013) placing economic legitimacy at the first level of social license.

With over half of the Richmond Valley population living outside of the main town, an important connection to the land was evident in the survey responses. Protected natural areas and forested areas cover more than a third of the Richmond Valley, hence it could be suggested that this may be important for the sense of place of rural respondents, leading to their higher ‘no’ response. Alternatively, in a place that strongly identifies itself with the cattle industry, a different relationship with the land is inherent, where an intensive agricultural use of the land has been a way of life since the first European settlers took residence (Council 2015b). This is apparent in the types of concerns expressed, with water being the single most important issue. As mentioned previously, concerns around water use and pollution are something that could, potentially be met with technological solutions.
9.5.3.2 Perceived challenges

Environmental values played an important role in social license denial, a stronger influence for many than economic concerns. Prioritised concerns in the Richmond Valley were potential impacts on water, followed by the long-term nature of impacts, and impacts on community health (Table 1). Qualitative responses reinforced a fear of impacts on water and revealed that potential impacts on rural livelihoods were a primary reason for taking an opposing stance: “The effect that messing with the water table has on the rural areas”; “Destruction of water, environment and way of life” and: “This is a prime agricultural area and should not be risked”. In Lismore, however, slightly different environmental concerns were apparent, which, consistent with other studies has aesthetic, as well as functional, natural landscape values strongly integrated in its place identity (Boholm and Löfstedt 2004, Kyle, Mowen and Tarrant 2004b). Important contextual factors influencing higher opposition in Lismore could be the high diversity of industries, and relatively affluent standard of living arising from a flow-on effect of high natural capital that includes rich soils and ample rainfall (McKee et al. 2001).

While intrinsically based around environmental issues, concerns in the Lismore LGA related to a deep mistrust in governance and the unconventional gas industry (Luke et al. 2014). With an apparent mistrust in the safety of industry processes, these fears were echoed in the qualitative responses.

With a large number of respondents referring to short-term economic gain leading to long-term environmental damage, intergenerational equity emerged as an important motivator for their positioning on the topic. For example: “I guess it is the long-term negative impacts for my children and grandchildren.” Some of the wider regional values were also evident in the qualitative responses: “It is not appropriate for our region. We need food and water security - we are an area that is leading in other, cleaner sources of energy”.

Perhaps unsurprisingly the responses for those still undecided were mixed, e.g.: “Partner works in industry plus we are farmers” and: “being a gas consumer, it must come from somewhere”. The environment was still the most commonly raised theme, with a lack of knowledge or information being an important factor prompting their choice to remain neutral in the survey: “People should be more open-minded about it if there is credible evidence that it won't harm our environment”. This places those undecided in the lower section of the social license pyramid, however this group are the most likely to be mobile, as they are more open to new ideas than those who have already decided upon their position.
9.5.4 Knowledge and Credibility

Other than those undecided, most respondents considered themselves to have an above-average level of knowledge on the CSG topic (Figure 46). Most of those who had taken direct actions to oppose or support CSG development perceived themselves to have particularly high knowledge levels.

Credibility of information was an important theme. An irritation for some respondents, more commonly industry supporters, was a feeling that the available information was becoming polarised. Personal contact was key to the transfer of knowledge within the community, with word of mouth ranked the most important information source in both LGAs, followed by TV news and local daily papers. The correlation of personal views with close social connections (normative views) is particularly strong with industry opponents. This is especially so in Lismore, where 77% were in complete agreement with those close to them, compared to more mixed normative views in the Richmond Valley (45% of non-supporters and 33% of supporters.
completely agree with their close social connections). Normative support almost doubled for those involved in the movement. With word of mouth and being such an important information source, and with most non-supporters agreeing with most people they know, this is perhaps unsurprising as perceived credibility of information may rest more on interpersonal trust than the ultimate source of information (Slovic 1999, Owen and Kemp 2013, Uslaner and Brown 2005). This effect is emphasised for those who have been directly involved with the resistance movement. For those who had taken direct action to oppose the industry, following word of mouth, public meetings were the second priority, with the third most important information source being scientific papers.

Whilst documentaries were the fourth highest priority for non-supporters (in both LGAs), they were much less important to industry supporters, ranking an equal 11th with national weekly papers. This could suggest the strong influence of documentaries such as Gasland for non-supporters, consistent with other studies on perceptions of unconventional gas (Control-Risks 2012). Community meetings (also increasing social connectivity) were also deemed important for non-supporters. Supporters ranked scientific papers as a fourth and fifth priority in the Richmond Valley and Lismore, respectively, which may indicate a more pragmatic approach from industry supporters, however the survey did not seek to clarify what respondents considered scientific papers to be.

The role of science in the CSG debate was raised by a number of respondents, with polarised views evident. Whilst a supporter says: “It’s a good industry, scientific evidence supports it”, and an undecided responded reported an apparent: “Lack of accurate information on the science”. A perceived lack of scientific evidence was a common motivation to oppose the industry, e.g.: “There is not-enough scientific data in Australia regarding the impacts”. Less individuals in the Richmond Valley questioned CSG as being a clean energy source, and many expressed frustration over the polarity, or lack of what they perceived to be credible, or easy to understand information on the potential costs and benefits of the proposed industry.

9.5.5 Trust, identity and empowerment

Issues of trust and mistrust for industry, government and industry processes were an underlying theme for many of the responses, perceived credibility being a huge driver of community positioning: “Unsafe chemicals used in fracking with seriously deficient research data”, with other non-supporters being more direct: “THEY LIE!” Others expressed their reason for industry support being: “Trust in the regulatory framework. My assessment of advocate's
assertions (on both sides). My worldview.” These perspectives reinforce the findings of Parsons et al. (2014) that trust is an important predictor of social license, highlighting an undercurrent of the land-use conflict that relates to clashing perceptions of procedural justice (Paragreen and Woodley 2013, Martinez-Alier 2001).

Those who had experienced personal or family employment with the CSG industry mostly showed stronger support, for example: “Worked on it, provides for family”; “Family in QLD, CSG has brought a lot to region”; “Grandson working in industry”; and: “I was a senior member of the management team at Metgasco and through there gained understanding of industry and practice. I believe there is a major ignorant scare campaign”. These responses show that once individuals share a personal relationship with the industry, they are likely to increase their trust levels and move up through the social license pyramid, identify more closely with the industry, and hence support further developments as has been found in previous studies (e.g. Kriesky et al. 2013). There were also notable exceptions with others choosing to take an opposite stance: “I have worked in the gas industry and can see both sides of reasoning”; and “I work in oil and gas, I know how bad it will be for this region”, consistent with research in the United Kingdom (Shackley et al. 2006).

In the Richmond Valley, interaction with the social movement was apparent, with a quarter of all survey respondents and a third of non-supporters reporting to have taken personal protest actions. Attendance at rallies and meetings were the most common actions reported, with evidence that local residents had attended rallies in many parts of the Northern Rivers. Most commonly attended were events in Lismore, indicating a close connectivity between the two communities, at least for those participating in resistance activities. A high level of social identification with the social movement was evident, with many residents putting up “Lock the Gate signage on our property gate and two cars”. Such responses (and the quantity of them) indicate a deepened regional identity in terms of identifying with environmental activism. Others take on more specific and/or organisational roles: “(I) started Lock-the-Gate meetings in Evans Head”; and a new identity for some: “I'm a Knitting-Nanna against gas” (‘the Knitting Nanas’ are a sub-group of the social movement who attend protests, and often knit ‘Lock the Gate’ triangles outside the office of their local MP).

Of industry supporters in the Richmond Valley, 11% felt they could have a personal influence on government decision-making regarding CSG, which corresponded closely with the 12% who reported to have already taken action to support the industry. In the Richmond Valley
LGA, about half of respondents felt that they could influence government decision-making, compared to around 60% in Lismore (Figure 46). The slightly higher proportion of those in Lismore who believed they could influence change, could have resulted from the greater volume of community-based anti-CSG events in Lismore, demonstrated by the 53% participation rate in protest actions, with such events leading to increased social connectivity, hence increased shared positive views towards the social movement (Tajfel 1974). High participation rates in protest actions lend credence to the environmental cultural values of the region, with those opposing the industry feeling the most empowered of all respondents (71% believed they could influence government decision-making, with 15% saying ‘maybe’ they could).

To summarise drivers of social positioning in these cases studies, while some themes were common to both areas, trust in governance and industry was stronger in the Richmond Valley, where a larger proportion of supporters (18%) considered CSG to be a legitimate, clean energy source that could boost regional employment. Mistrust in Lismore was much more apparent, with a strong focus on potential impacts on environmental values of the region. Potential impacts on water and rural livelihoods were the most important influences for social opposition to gas industry development in the Richmond Valley. While many called for a better scientific understanding of potential risks and impacts, a large proportion had already made up their minds regarding their opposition to the industry. These drivers echo many of those in other studies and recent government inquiries (O’Kane 2013, Luke et al. 2014b, Boudet et al. 2014, Muradian et al. 2003, Prno 2013). These results also demonstrate that processes of gaining or withdrawing social license are incredibly complex, and linked not only to the regional context of cultural and environmental values, identity and economics, but also how these relate to social positioning, social connectivity, empowerment, credibility of information and trust (Lloyd et al. 2013, Prno 2013).

9.6 A diamond model of social license

Given the proportion of social opposition demonstrated in the poll and surveys in the Lismore and Richmond Valley LGAs, a social license to operate for Metgasco or any other gas drilling company is unlikely to be granted at even the most basic level described by Boutilier, Thomson and Consultants (2011). Despite a clear majority in a democratic context, community positioning on CSG development was far from black and white, with individual views spanning the social license pyramid. Whilst non-supporters remained firmly at the base, having
withdrawn their social license, industry supporters viewed CSG extraction as a legitimate and credible way to boost regional employment, demonstrating acceptance and approval of the industry. There was evidence of psychological identification with the industry where people had experienced personal employment or formal agreements with CSG companies. However, the pyramid model was only useful for explaining half of the story.

Introduced below, the diamond social licence model extends the Thomson and Boutilier pyramid beyond the ‘withdrawal’ boundary. The diamond social license model seeks to broaden the social license pyramid concept to include community relationships with the social movement as well as industry. The range of responses for those still undecided would place them in the central levels of the diamond, neither identifying specifically with the social movement, nor clear on their support for further developments. A lack of engagement with the topic would perhaps lead to a proportion of those undecided defaulting to at least ‘reluctant acceptance’ should the industry develop further, whilst others simply wait for more information. With technological solutions to concerns around water possible (e.g. Howarth et al. 2011), there is greater potential for altered positioning towards industry. If, however, these solutions were to not become apparent, or reports of negative impacts were to arise from elsewhere, this could influence their perceptions of legitimacy, instead leading these individuals to support of the aims of the social movement.

When individuals and/or the broader community perceive the messages of the social movement to be legitimate, credible and trustworthy, they move downwards through the diamond, mirroring the levels of the pyramid (Figure 47). The research shows that as individuals increasingly identify with the social movement (psychological identification), their positioning is likely to become more calcified. The greatest risk to an industry could be presented where a new or deepened regional identity can impact upon social license for the industry in other regions, as has been warned by Boutilier (2014). The diamond social license model is presented in Figure 47.
Figure 47: The diamond social licence model mirrors and extends the Thomson and Boutilier (2011) model below the ‘withdrawal’ boundary as individuals increasingly identify instead with the social movement.

As a linking theme, increasing levels of trust have been included as a key for all boundaries, with the highest level now requiring the ‘identity’ boundary be passed. Survey results demonstrate a high level of identification with the social movement, particular for those who take on organisational roles, and/or specific identities such as the ‘Knitting Nanas’ or the ‘Girls against Gas’ (Lock-the-Gate 2015). Once people find their identity strongly linked with the industry or movement, investing time, energy and/or money, this becomes a new or deepened identity (as has occurred on a regional scale), and individuals will defend the institution (or social group) that they are involved with (Tajfel 1974).

In Lismore, a forty-year history of environmentalism and alternative living directly influences cultural values, and while the LGA enjoys a comparatively high quality of life, there is no imminent need for change. A history of social action and (successful) environmental activism is likely to underpin what appears to be an empowered community (Bible 2007). A third of Richmond Valley respondents, and over half of Lismore respondents reported to have taken actions to directly oppose the industry, with attendance at protest events likely to further increase connectivity and social identification with this group (Tajfel 1974). With personal
connections being such an important source of information, there is also the danger that information becomes increasingly polarised between those with opposing views as people become less likely to alter their positioning (Mackie 1986, Jaspal and Nerlich 2014).

These findings have implications for governance, for as people move lower in the diamond model they will identify more strongly with the social movement, increasing social risk for industry to continue with developments. The social movement has already had an influence on policy and legislative change at a local level in Lismore (e.g. Luke et al. 2013), State-wide (e.g. NSW-Government 2013), and nationally (e.g. Australian-Government 2013), with a permanent ban on CSG development recently announced in the southern State of Victoria (Hepburn, 2016). Subtle differences between local government areas emerge as a challenge to planning decisions principally conducted at a state level, reinforcing the importance of understanding regional variations in context (Evensen and Stedman, 2016). In mid-2014, the Richmond Valley Council reversed its initial pro-industry stance to become one of the last Northern Rivers councils to have internally voted against the gas drilling industry (Feliu 2014). With state-wide polling indicating that social positioning against the gas industry goes beyond the local level (Aird 2015), the diamond social license model could be useful for examining processes of social positioning occurring at a range of geographical and social scales.

9.7 Conclusion

Drivers of social positioning on industrial developments in rural areas are a complex set of relationships between knowledge transfer, social connectivity and values that reflect a region’s cultural, economic and geographical context. These drivers in turn will determine whether the community-level social license of a development will be granted or rejected. For all survey respondents in the Northern Rivers region of NSW, perception of potential (positive and/or negative) impacts of the coal seam gas industry depended upon what people valued most deeply: the maintenance of their rural livelihoods and the health of the natural environment. While these values were primary motivators in their reaction to gas industry developments, trust and social connectivity also played an intrinsic role in the perceived legitimacy and credibility of developments.

The pyramid model of social license was useful in understanding processes of increasing levels of approval for industry, but failed in some critical areas. This paper attempts to deal with this by proposing its extension to a new diamond social license model that reflects processes of
community positioning beyond the withdrawal stage. The Northern Rivers case study demonstrates that a process of identification with the social movement takes place that mirrors the social license pyramid. The alignment of values and trust will influence perceived legitimacy, credibility and identification with the individuals involved, and will determine the level of support for industry, or for the social movement. Social positions are likely to become increasingly static as psychological identification grows, leading to an increasing likelihood of social license withdrawal and policy reform.

9.8 Reflecting on Chapter 9

Sub-question 1 was addressed again in this chapter, but this time comparing two places: What are drivers of social positioning for contentious land use change (for those who elected to support, not support or remain undecided on CSG developments)? Notably, social license withdrawal (or denial) was not as strong in the Richmond Valley LGA. There were also differences in drivers for non-support, with regional context highlighted as an important contributing factor for social positioning on an individual and community level.

Responding to sub-question 5: In which ways does the social, environmental and economic context of a project impact upon community-level social license? A thorough understanding of local context plays a crucial role in how the social license of a development will be enacted in a ‘community of place’. The available natural resources are likely to influence the economic and social profile of an area. Economic context is important, as people with lower incomes may be more likely to seek industrial opportunities for improving their lifestyle. Where socio-economics are stronger, there is less need for developments. Ultimately, natural values have influenced cultural values. Community empowerment and previous experience in environmental activism has proved an important factor contributing towards the success of the social movement. An important consideration, if social license withdrawal is judged solely on the emergence of social resistance. This responds directly to sub-question 6: In what ways can the research findings be used to clarify or extend the social license concept? The research findings indicate that there is an inverse relationship between support for an industrial development, and support for a social movement. This evidence has been utilised to extend existing models of social license to include social resistance.
Chapter Ten: Thesis Summary and Conclusions

Figure 48: Locating Chapter Ten within the thesis structure
Chapter Ten: Thesis summary and conclusions

10.1 Thesis Summary

Three main themes have been identified, which, in the case of the Northern Rivers, have led to social license withdrawal for the unconventional gas industry (depicted in Figure 49):

- Social dynamics
- Drivers of social positioning
- Community engagement in land-use planning and decision-making

An exploration of these themes has deepened understandings of how social license can be enacted in a community, with regional context being a strong driver of social positioning, interlinked with community values and culture. It has been demonstrated in previous chapters.

10.2 Main themes of the thesis

Figure 49: A summary outline of the structure of Chapter 10
how transformative engagement approaches, including processes of ‘scaled up’ deliberative democracy, can be used to legitimise community views and formalise what is, in this case study, a lack of social license for the development of the coal seam gas industry. The research has shown how different patterns of behaviour have influenced interactions between individuals, groups, institutions, communities and networks relating to the CSG industry, community, and the anti-CSG social movement.

10.2.1 Social dynamics

An investigation into social responses to the coal seam gas industry in the Northern Rivers provided an interesting case study of how a social license has been enacted in a community. How individuals came to form groups, how groups connected and how views were shared between groups, has been integrated into the story of the community response to CSG developments. Events and processes have been described that demonstrates some of the connectivity between social scales, including at protest events, meetings and through the media. Moyer’s (2001) Movement Action Plan (MAP) model of social movements provided a useful frame for describing the developmental phases of the research, as well as some of the key roles involved (Chapter Four).

The views of different individuals at the start of the social movement were examined, including how social identity affected the formation of groups, specifically the unification of farmers and activists in the anti-CSG cause. Some quite different responses were identified when the Northern Rivers interviews were compared with those in the Western Downs region of Queensland (Lloyd et al., 2013). A deeper exploration of social dynamics, relating to intra-group and inter-group behaviour, found that community action groups can be quite diverse in their membership; that there are many potential barriers to group effectiveness and connectivity between different groups that may have different social identities (Lloyd et al., 2013; Luke et al., 2014a).

There were several points where the social movement could have experienced systemic impacts or failures, for example when the Northern Rivers Alliance began, and divergent views led to group conflict. In this case, issues were overcome quite quickly, however this may not always be the case. Each and every community action group formed must overcome a suite of social dynamics in order to achieve a common purpose and become effective in their aims. A visual mapping technique was used to demonstrate a way for community groups to identify unifying concerns and goals to form a common purpose. Not only was this technique able to demonstrate
concerns, goals and values held by group members, but it also demonstrably helped the BSANE group, and the Northern Rivers Alliance to overcome some of the barriers to group effectiveness (Chapter 4; Luke et al., 2014a).

Ultimately, connectivity between social action groups and the wider community in the Northern Rivers led to broad mobilisation of the populace in various protest activities. The research suggests that mobilisation was made easier by pre-existing experience with effective social-environmental activism, and high values relating to the biodiversity, aesthetics and natural resources existing within the surrounding environment. Increased involvement in protest activities reinforced cultural values relating to the natural environment, and the perceived lack of environmental sustainability of the CSG industry. It could then be argued that the anti-CSG social movement ultimately led to a deepened regional identity relating to environmental values and social activism, with raised levels of empowerment and social connectivity (Luke et al., 2014b; Luke et al., n.d). The basis of the Northern Rivers case study was then used to argue for the extension of the social license pyramid model to a diamond model of social license that includes processes occurring beyond social license withdrawal as residents identify with the social movement (Luke et al., n.d).

10.2.2 Social positioning

Drivers for social positioning on proposed gas industry developments have been an important focus in all phases of the research, at several social scales. Motivations to support or reject the coal seam gas industry were examined relating to individuals and groups in chapters Four, Five and Six. Quantitative and mixed-methods approaches were used to explore social positioning at a community level in chapters Seven, Eight and Nine, specifically for Lismore and the Richmond Valley Council local government areas. The Lismore survey was developed using qualitative information from the previous research phases. This survey, in conjunction with the poll, was able to establish important drivers of community-level social positioning that ultimately legitimised social license withdrawal for Lismore City Council (Luke et al., 2014b). Community-level drivers of industry support, opposition and indecision were explored in Chapter Seven, and contextualised in greater depth in Chapter Nine, in relation to regional characteristics.

Social positioning in two local government areas was compared in order to consider the geographical, cultural and historical context of the case study regions where social license was withdrawn or withheld. The different characteristics of the two local government areas related
directly to a different set of concerns for non-supporters of the CSG industry. In comparison to Lismore, Landscape features led to a slightly different geographic and climatic context for the bordering local government area of Richmond Valley, which was more comparable in demographics and socio-economics to many broadacre farming regions (ABS, 2011). Demographic, geographical, climatic and cultural factors set the Lismore local government area in a slightly different context to many broadacre farming areas of Australia, for example in South-East Queensland, where the coal seam gas industry is highly developed (ABS, 2011; Williams & Walton, 2013).

In the Lismore local government area, high natural values relating to rich soils and high rainfall led to not only high biodiversity, but also a high diversity of horticultural, secondary and creative industries (Luke et al., n.d). A significant proportion of the population were ‘tree changers’, with the first wave moving to the region in the 1970s. The tree changers moved to the Northern Rivers precisely due to these high natural values, transforming the rural culture to one that highly regards environmental sustainability and natural beauty (Luke et al., n.d). Previous successful environmental movements led to a population that was empowered, and skilled, in environmental activism (Luke et al., n.d). In Lismore, opposition to the coal seam gas industry related principally due to concerns around long-term impacts on natural water systems and the environment, while impacts on farmland were a much greater focus for survey respondents in the Richmond Valley local government area.

Key emergent themes were a lack of available information that was perceived to be credible relating to potential impacts. This was important for non-supporters in Lismore, and for those undecided in both local government areas. An apparent mistrust in industry and government was especially high in Lismore. Conversely for industry supporters, particularly in the Richmond Valley, there were notably higher levels of trust in industry and governments apparent in the survey responses. The perceived sustainability of the CSG industry emerged as an important theme in the Northern Rivers. The second most important motivator for industry support was that CSG was perceived as a clean energy source, however ‘clean energy production’ was the second-lowest priority for non-supporters. For non-supporters, one of the most important emergent themes was that CSG was perceived to be at odds with sustainable energy production. Many comments were made that renewable energy production facilities should be installed instead of coal-seam gas (Luke et al., 2014b; Luke et al., n.d).
While those who supported CSG industry developments perceived net gains relating to employment and a boosted rural economy, those who did not support the industry perceived a net loss relating to environmental and cultural values. While industry supporters viewed the CSG industry as a way to improve the opportunities and economy of the rural region, those opposed to the industry viewed it to not fit in with existing rural livelihoods, being at odds with agricultural production, tourism and other local industries. Perceptions of sustainability have also proved important, particularly as many claims in the surveys infer that the emissions and other potential impacts of the CSG industry are at odds with environmental sustainability, perceived likely to contribute to climate change (Luke et al., 2014b). The research suggests that in a rural broadacre region with a relatively homogenous economy, there is a greater likelihood that a community may see a higher level of perceived benefits. In contrast, an area that has a more diverse, heterogeneous economy may be more likely to perceive a higher level of impacts (Luke et al., n.d). Examining how social positioning has been enacted at and across different social scales, and between different groups in society, enables us to begin unravelling the wicked problems surrounding social license for developments, such as the intersecting pressures on rural areas that were discussed in Chapter One.

10.2.3 Community engagement for land-use planning

Mechanisms for transformative engagement in decision making, as described by Bowen et al., (2010) were an important aspect of the research, with the effectiveness of mind-mapping for this use tested during a focus group session described in Chapter Six. It was demonstrated how community engaged processes such as visual-mapping can be used to gather focus-group views for collective strategy building. Such tools can also be useful for overcoming negative group dynamics, focusing group purpose and aiding intergroup communication. This type of qualitative research activity could be extended for the purpose of understanding social license at a community-group level. An effective practical method for determining social positioning and enacting deliberative democracy on a community scale was demonstrated in chapters Seven and Eight, where the community-engaged development and implementation processes of the Lismore poll and surveys were described. The surveys themselves were ultimately an engagement process that enabled a safe space for community members to express their positioning on the CSG industry, whether it was to express their support for, or opposition to, industrial developments. The limitations of the yes/no response were overcome by the addition of the exit-poll survey which was able to colour in the black and white lines of social positioning drawn by the poll, illuminating the drivers behind the strong community position.
How these processes led to policy reform was explained in Chapter Eight, and how relationships between regional institutions can inform policy that is in-touch with the needs and aspirations of regional communities.

Taking a wider perspective of the research detailed in the previous chapters, it becomes increasingly clear that community views will influence social dynamics, as social dynamics will influence community views. At the same time, engagement facilitates connectivity between social positioning and policy, and through clarification of social positioning, can overcome negative social dynamics. Directly and indirectly, all of these factors with impact upon how a company’s social license to operate is enacted in a region.

10.3 Formalising social license to operate

From interviews with industry representatives and activists alike, the research clearly shows that a more formalised approach to gaining and maintaining a social license to operate, could save money for companies wishing to develop, as well as time and stress for communities who may find developments at odds with existing values and livelihoods. Metgasco CEO Peter Henderson was able to see that there was a diversity of groups across the communities where they held petroleum licenses, however he was not able to successfully engage these different groups. Consultation meetings were held following many years of exploration, and, being invite-only, did little to increase trust levels. Unlike Arrow, Henderson did agree to present at broader community information sessions in 2011, but aside from this, much of the consultation focussed on one-on-one consultations with landholders, as required by the legislation (Henderson, 2013). Even at the time of interview in 2013, when reflecting on engagement processes, Henderson said he would like to be able to turn back the clock three years. According to the literature, social impacts can commence from the very first rumour of a project (Prenzel & Vanclay, 2014), hence three years may, or may not, have been sufficient.

It could be postulated, that if Metgasco were able to provide sufficient evidence from early on that coal seam gas developments were indeed aligned with environmental sustainability, then they may have not have come up so hard against a wall of broader community values. It could, however, be argued that regardless of engagement procedures, the release of the documentary Gasland may still have been enough to tip the tide of opinion against Metgasco (Luke et al., 2014b). The influence of actions taken by other companies such as Arrow Energy would have been out of Metgasco’s control. Through negative community interactions such as the
consultation meeting described in Chapters Four and Five (Lloyd et al., 2013a), Arrow contributed to painting a negative image of the unconventional gas industry for Northern Rivers residents. Community complaints relating to American companies in Gasland, (Fox, 2010) and negative reports of the conduct of Queensland companies, did little to restore faith in Metgasco or the unconventional gas industry as a whole (Pratzky, 2011). Such observations return the focus to the complexity of the social license concept, and how social license at different scales, across time, and in different places, has the ability to influence social positioning elsewhere.

Exploring the role that governance and institutional relationships play in terms of shaping social license processes and outcomes, Prno and Slocombe (2012) have described the granting of social license by “society as a whole” that assumes “governments, communities, the general public and media” to be supportive. They then define local communities by their “proximity… and ability to affect project outcomes” (Prno & Slocombe, 2012:347). This potential contradiction highlights an issue over definitions of what ‘community’ consists of, and which groups are important for determining social license. The research demonstrates that the appropriate social scale for a social license needs to be clarified and understood using transparent and transformative engagement approaches relevant to working individuals, groups and, potentially whole electorates in a polling/survey situation. Claims are often made by politicians, industry and NGOs that they represent ‘the community’. The community, however, is often a complex umbrella name for multiple stakeholders (usually living within certain geographical confines) who may have divergent and contrasting views (Berkman, Glass, Brissette, & Seeman, 2000). Community positioning is better formally qualified for proposed and future projects, for if it is not, there is a danger that groups in one area may be a part of a broader network that has the potential to impact the social license for an entire industry, demonstrated by the spread of the Knitting Nanas and Lock the Gate (Luke et al., n.d).

As international energy companies seek to operate in regional areas across the globe, the social license concept provides a pivotal point around which sustainable development, governance and community aspirations revolve and evolve. It provides a frame upon which community member levels of approval can be pinned. The social license literature describes a multitude of ways that industry can alter its policy and actions to improve its social license with a given community (e.g. Boutilier, Black, & Thomson, 2012; Dare et al., 2014). What is apparent from this research, and from other cases such as the Tambogrande project and the Western Downs experience, is how measuring and qualifying social license can be powerful for determining
levels of social acceptance across the community (e.g. Prno, 2013; Walton et al., 2014), as well as over time (Dare et al., 2014). Such work, commencing early in a development process, can be easily used for stakeholders to express (and the company to address) any concerns prior to, and following project commencement.

This research used a mixed-methods approach to understand how social license has been enacted, from relatively isolated individuals through to the development of small interest groups across the Northern Rivers community. While broader social mobilisation did not take place until late 2011, these groups were already well engaged with the topic and becoming outspoken in the community. The surveys that took place in 2012 and 2013 were able to take snapshots of broader community views at two points in time, showing public opposition to CSG developments to be strong. Despite this result, earlier interviews up until mid-2011 indicated that the social movement was still composed of relatively isolated groups, and it could be suggested that a survey taken at that point in time may have resulted in a much greater number of those ‘undecided’ or ‘no comment’. By the time the surveys took place, the ‘horse had bolted’ relating to community opposition to the CSG industry in the Northern Rivers. The public was engaged, and many were passionate about stopping any further development of the CSG industry (Luke, 2014b). Therein lies a complexity relating to engagement, and when there may be sufficient public engagement to run a poll or survey.

Proponents of deliberative democracy would argue that prior to holding such a poll or survey, there needs to be a well-informed public, with arguments supported by accurate and credible information (Fishkin, 2009). This has proved a challenge relating to the Lismore poll, with research relating to potential environmental and health impacts still catching up, leaving a knowledge gap that did little to quell the fears of the public in the Northern Rivers. Another requirement of deliberative democracy is that proponents and opponents need to listen and converse between each other with civility and respect, which did not always occur in the media and at public meetings (e.g. Turnbull & Frazier, 2012).

In order to present a balanced argument, Lismore City Council looked to two opposing groups, APPEA and Lock the Gate, to present an argument for the yes/no case that was distributed weeks before the poll. Lock the Gate provided a list of community concerns. Examples and references were provided but these were removed from the final print. An apparent lack of data left the CSG industry unable to convince the public of the minimal risks involved, and instead of addressing concerns with credible information, fell to using a familiar rhetoric of ‘jobs and
growth’ (Luke et al., 2014b). Science itself has played an interesting role in this debate, with both sides using scientific evidence to support their claims. During meeting observations, it was apparent that an enormous level of social learning was taking place for activists, who, to appear credible, needed to have a relatively in-depth knowledge of the unconventional gas industry and the processes involved. As an environmental scientist and coordinator of the Northern Rivers Alliance, Boudicca Cerese was one example of an activist who took a great deal of care to make sure that she, and others in the movement, were in touch with correct and up-to-date scientific information (Chapter Four).

10.4 What does this case study tell us about social license for industrial developments in rural areas?

The Northern Rivers case study informs us that of Prno’s (2013) guiding principles for the establishment of a social license to operate, there are certain aspects that an industry can influence and/or improve upon, while there are others that will remain far more static (Figure 50). One of the first things industries are able to influence, is the quality of relationships, via improved engagement approaches. Engagement approaches used by Arrow and Metgasco, observed by the researcher, have been at best transactional (principally informative but attempting to respond to questions), selective and opaque to the wider populace.

While improved research and cost-benefit analysis may be able to convince community members that water impacts will be negligible; visual amenity will not be impacted and local industries will not be compromised, there is little that an industry can do to influence the regional context within which it seeks to operate. In the Northern Rivers, high levels of empowerment proved extremely important (residents believing they could stop the industry via protest activities). It took sustained protest activities over five years before the unconventional gas industry was paid to leave the Northern Rivers by the New South Wales State Government (Hawke, 2015).
How can this case study inform Prno’s five guiding principles?

- Sustainability: community values
  - Invest in renewables
  - Visual impact on natural environment

- Context: high levels of empowerment
  - Culture, identity, way of life
  - High natural, social and economic capital

- More perceived impacts than benefits
  - Risks to water systems
  - Impacts on farmlands & natural environment
  - Changing the landscape

- Poor community-industry relationships
  - Lack of trust in industry and government
  - Credibility of information
  - Research gaps

- Transactional engagement approaches

**Figure 50:** How the case study of CSG developments in the Northern Rivers can inform the guiding principles defined by Prno (2013), demonstrating that some of the principles are much easier for an industry to influence, however there can be a ‘glass ceiling’ when it comes to regional context, including norms, values and existing industries.

With all this in mind, the regional context, cultural norms and values of the Northern Rivers community have proved extremely important for the withholding or withdrawal of a social license for the coal seam gas industry. It presents a strong argument for putting ‘the cart before the horse’ when it comes to regional development strategies, by first engaging with local communities prior to any major development decisions being made. While interests are negotiable, values are not. For example, establishing a good understanding of the context of a region and/or community, including its natural, cultural and economic capital, as well as its cultural values and norms, is essential prior to the granting of any approvals for developments (Luke et al., n.d). If such things are better understood, then the role of a proposed industry can then be considered within the regional context. Higher-level consultation procedures that commence prior to the granting of any initial approvals, would be a step towards more
transformational approaches of engaging communities in land-use planning. Such approaches are able to build trust while identifying community values and priorities from the outset.

Claims of having a social license support industry activity in some areas, while claims of no social license have become an important thread of the anti-CSG narrative in the Northern Rivers. Having been developed from an industry perspective, there is a danger that the social license concept could be used as a neoliberal tool with the purpose of shedding light on those individuals and communities who tolerate and accept developments (e.g. Walton, McCrea, & Leonard, 2014). At the same time, the alternative story frequently remains in the domain of the resistance literature. Throughout this case study, and in similar studies, the term has been wielded like a weapon by both industry proponents and opponents.

The fuller model of social license that has been provided in Chapter Nine can be used to extend our understanding of broader and significant social processes occurring for communities responding to industrial developments. Beyond a description of very broad macro-factors influencing social license, this thesis has provided an in-depth discussion of how multiple social licenses within and across a community (Dare, Schirmer, & Vanclay, 2014), interact with social values, positioning and dynamics on and between a number of social and geographical scales. Ultimately, this enables a deeper and more complex understanding of processes influencing social license granting and withdrawal, but also contextualises the role of social license in broader planning processes.

10.5 Communities, land use planning and sustainability

Intrinsically, this study demonstrates a necessity for improved community engagement processes relating to land-use planning and strategic planning. At a deeper level, an emergent theme is the apparent disconnect between the social license development literature and the sustainable development literature. The ‘decide-announce-defend’ approach to land-use planning is still the prevalent process in place for energy developments. In this case it led to considerable costs for the State Government and its taxpayers, as well as a loss for Metgasco and the other companies that had invested in gas exploration in the Northern Rivers. What this case study has demonstrated, is that while the outcome of organised and effective community opposition can be expensive for governance, several mechanisms exist, and have been trialled in this study, that could be put in place to prevent such an occurrence in the future. Whilst this
thesis has focused mostly on community process and not on policy, there are some important policy implications from this research that will be outlined in the following paragraph.

While social license can be fundamentally changeable and intangible, there is vast room for improvement in its application. Within existing Australian governance structures, mechanisms could be put in place that allow community opposition to be an adequate reason to halt projects. Such a bill was put to the New South Wales government in mid-2015, where a public interest test would have been made a provision of the 1991 Petroleum (Onshore) Act. The bill would have provided the minister with the ability to cancel licenses without compensation where it is in the public interest to do so (Dobney, 2015). It was not passed, but could have potentially saved the State government millions of dollars. The Lismore poll, including the distribution of the yes/no case, cost the local government under AUD $20,000, a small price to pay for the clarification of community views on a key issue.

Following this example, if state governments were to use a similar process to gauge public positioning on important issues from early in the process, this could help to genuinely involve the wider public in decision-making and avoid unpopular planning decisions and inform strategic land-use planning. A clear and transparent community engagement platform, set up via a participatory process of deliberative democracy, could be used for establishing, maintaining, and measuring social license prior to land-use decisions and the granting of initial approvals. The research has shown that understanding a social license requires a responsive, mixed-methods approach that is able to understand drivers, and measures, of social positioning at appropriate social scales, over time.

The greatest change in planning process would involve industrial planning responsibilities decentralised from state to local government, or a regional level, where planning took place at a grass-roots level, by providing communities with engaging and well-thought out opportunities for input into strategic planning initiatives. This would, however, require a paradigm shift in decision-making process and responsibilities to a transformational approach such as that described by Bowen, Newenham-Kahindi, and Herremans (2010). While this may appear a tall order, previous research on successful social license demonstrates that transformational approaches to community engagement in decision-making and strategic planning can ensure a robust and on-going social license for a company to operate (e.g. Prno, 2013). Success stories such as those described in Chapter Two do, however, involve a lengthy process of identifying the multiple social licenses held across a community, the different social groups involved
including indigenous and other existing community groups. They then must be engaged and informed adequately. Past success stories have also involved genuine and widely supported formal agreements and ongoing co-management strategies (e.g. Prno, 2013; Ruckstuhl, Thompson-Fawcett, & Rae, 2014).

### 10.6 Conclusions

The Northern Rivers provides a unique example of how people respond to the intersecting pressures placed on rural areas. While this thesis has focused on responses to the unconventional gas industry, these responses have been placed, where possible, in the context of wider community concerns, influences and aspirations. The case study of how the Northern Rivers community responded to the development plans of the coal seam gas industry and government provides several layers of information and understanding about social license withdrawal. It has provided valuable insights into the drivers of individual positioning that contribute to the ‘multiple social licenses’ occurring across communities. Elements of the research have reinforced findings from previous studies, including the influence of value-systems on forming views (Boudet et al., 2014; Colvin, Witt, & Lacey, 2015), and the influence of perceived procedural justice on the emergence of social resistance (Lacey & Lamont, 2013; Paragreen & Woodley, 2013; Rasch & Köhne, 2015).

The study has been able to follow some of the social processes that took place from when some of the first individuals became ‘activated’ on this issue, and how they formed social action groups to engage and mobilise many individuals in the wider Northern Rivers community. The social dynamics occurring along an intergroup, intragroup, and interpersonal continuum have shown how individual perceptions of a topic can be merged and unified for a common purpose, which in this case became to mobilise the wider population against the CSG industry. Many challenging social dynamics have occurred, which, if not overcome may have had the potential to impact upon the effectiveness of the social movement. Simple and easily transferable strategies for overcoming social challenges, particularly in rural areas, have been implemented and tested in a novel context. For example, visual mapping was demonstrated to be a useful tool for unifying group aims and collecting data regarding community aspirations. The processes involved in the Lismore poll and survey, along with some aspects of the Richmond Valley survey, have demonstrated how processes of up-scaled deliberative democracy can be used to determine broader community-level social license for industrial developments.
The research has then been able to examine how this set of social processes influenced a local council and ultimately, the NSW State Government, into making tangible change that stopped gas industry developments in the Northern Rivers for the foreseeable future. It will be interesting to see whether future research identifies that the growth of Lock the Gate, principally via anti-CSG sentiment, will go on to impact the social license for coal developments in Australia. Now that a broader section of the populace has mobilised, will a greater focus now rest on coal as an unsustainable industry?

While engagement strategies can play an important role in establishing and maintaining a social license to operate, this is only one part of a much larger picture relating to industrial developments in rural areas. If the social license concept is to reconcile with the aims of sustainable development, the regional context within which an industry seeks to develop must first be well understood prior to the commencement of approvals and major investment. Research questions need to come from a community perspective, moving from: “How does this community fit into the aims of our company/industry?” to a different paradigm, of: “how does this industry fit into the situation, needs and aspirations of our community?”

Finally, a new social license diamond model has been developed in order to improve understandings of social processes influencing increased identification with the social movement and with industry. Together, these findings facilitate an integrated understanding of the role of social dynamics, values and context in determining social positioning and ultimately social license, not only for the CSG industry, but also for many proposed and existing developments around the world. Qualifying social license at the appropriate social scales, hence improving the tangibility of the social license concept, can not only lead to more effective community input into land-use and natural resource management decision-making, it also has the potential to reduce ‘social risks’ to industry that could possibly be felt during the lifecycle of new and future industrial developments. It may be more beneficial in some contexts for an industry to not pursue developments. What the Northern Rivers case study has provided us with, is a unique example of failed social license that has resulted in a resistance movement that has created shock waves that may be felt by the unconventional gas industry far beyond the local and regional context. The strategies, narratives, symbol and identities associated with the social movement, along with the empowerment that comes with its success in the Northern Rivers, could present an increased challenge for the social license of present and future developments elsewhere in Australia, and across the world.
10.7 Future research directions

Whilst answering some questions and providing insight into various phenomena relating to social license for industrial developments, the research inevitably raises further questions for potential future research directions. While far from exhaustive, several areas for further exploration are outlined below.

**Cross-state and international comparisons:** a more complete view of processes occurring for different case studies would be an obvious direction for expanding our understanding of social and political process regarding social license for industrial developments.

**Legislative requirements at the nexus of water and energy resources,** could more holistic legislative systems be developed, for an improved ability to balance different resource uses.

**A more in-depth analysis of the consultation processes,** exploring connections and disconnects between legislated requirements of consultation and community expectations prior to the granting of exploration licenses, through project life cycle.

**Examining how system resilience** is impacted upon by social-ecological interactions and responses to industrial developments would provide insight into whether and how social and/or environmental resilience is improved, or impacted negatively by different types of development and/or development process.

**The role narratives play in processes of opinion formation.** The social license frame is a useful and increasingly applied tool for understanding processes of community acceptance regarding industrial developments, however social representations theory could be one further frame for discussing the role of narratives in processes of opinion formation, and examining interactions between information sources.

**What is credible knowledge?** Further studies on the role of science, public risk perception and what information needs to have and/or be in order to be perceived as credible, would prove enlightening.
References


Blankenship, A. B. (1940). The influence of the question form upon the response in a public opinion poll. The Psychological Record, 3(1940), 349-422.


Duddy, T. (2011, August 17) Our food bowls should not be sacrificed to mining, *Sydney Morning Herald.*


Lismore City Council (2012b). Agenda of an Ordinary Meeting of Lismore City Council Tuesday, 12 June 2012. Lismore: Lismore City Council.

Lismore City Council (2012c). Minutes of an Ordinary Meeting of Lismore City Council Tuesday, 12 June 2012. Lismore: Lismore City Council.


Sevenant, M., & Antrop, M. (2010). Transdisciplinary landscape planning: Does the public have aspirations? Experiences from a case study in Ghent (Flanders, Belgium). *Land Use Policy, 27*(2), 373-386. doi:http://dx.doi.org/10.1016/j.landusepol.2009.05.005


Appendix A: Exit Poll Survey Form
Appendix C: Ethics Approvals
Appendix D: Signed statements from co-authors
Appendix E–H: PDFs of published journal articles comprising Chapters 6–9