

INTEGRATING NATURAL CAPITAL ACCOUNTING INTO AGRICULTURAL DECISION-MAKING

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CERTIFICATION OF ORIGINAL AUTHORSHIP

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ABSTRACT

There is growing interest in the critical role that natural capital plays in the supply of food, fibre, and energy, and its importance to societal well-being. This is in response to the alarming rate of decline in natural capital, and agriculture has made a significant contribution to this process. However, agriculture is also in a unique position to play a significant role in arresting this decline. To address this issue, attention has been directed towards sustainable land management practices through the measurement and monitoring of natural capital in agricultural landscapes. In recent years, the development and use of accounting frameworks for natural capital in these landscapes has been considered as a tool to deliver better natural capital outcomes and create value for farmers. Presently, there is limited evidence of their wide use.

The aims of this research, and its trans-disciplinary approach, were to investigate how natural capital is perceived by a cross-section of agricultural enterprises and stakeholders; and to identify the value attributed to natural capital and how the obstacles to designing and integrating effective accounting frameworks may result in its wider utilization.

A mixed-methods approach was taken in this study, dominated by qualitative data. The initial stage involved the use of case studies and interviews with case study members. This provided examples of farming and government programmes that are undertaking or implementing natural capital accounting. They have been chosen to understand the value propositions and barriers that exist when there is only limited uptake of natural capital accounting. The second phase, and independent of the case studies, two focus groups collected qualitative from agricultural stakeholders to understand the perception of natural capital and its value proposition to the stakeholder and their industry or sector. Quantitative data was also gathered at this stage through a short survey conducted with focus group participants. The survey was used to overcome time constraints and as a scaffold during the sessions. Final quantitative data was also gathered through a survey of a diverse range of farmers to gain a wider perspective on the importance of natural capital across the general farming population.

The case studies showed that at this stage, value propositions are more aspirational than real. The financial or economic benefits identified in cases of more-advanced natural capital accounting appeared to be based more on farming practices or methods than on the results of natural capital accounting. The wider use of natural capital accounting may be linked to a failure to develop clear links between farm productivity, financial outcomes, and environmental outcomes.

The findings from the focus groups indicated that natural capital accounting may not be the best tool with which to address the degradation of natural capital and the contribution to climate change. The focus groups highlighted the need to build strategic alliances and greater collaboration across agricultural stakeholders to develop more effective tools. A consistent message from all areas in which data were collected was that there is a general lack of knowledge and education around natural capital accounting amongst farmers and stakeholders. This was deemed to limit its wider adoption, together with an apparent lack of skill and general confusion around the language and jargon pertaining to natural capital accounting.

Given the voluntary nature of natural capital accounting without a clear value proposition and no commitment to permanency there is a risk of how effective natural capital accounting will be over the long term.

The finding from this research indicate there is a need for increased education around the role and importance of natural capital. This should occur beyond the farm gate, not only to include agriculture stakeholders, but to increase societies knowledge through the inclusion of natural capital in school curriculum and higher education.

Greater collaboration across farmers and stakeholders is required to build an improved understanding of shared values and identify opportunities to create equitable value opportunities. Equitable opportunities that will encourage wider adoption and build a longer-term focus to delivering improved natural capital outcomes. Importantly there is more work required to clearly link the economic benefits to the environmental benefits of improved natural capital and the need for long term measurement and monitoring.

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I came to this thesis to unscramble balancing economic essentials of agriculture with the imperative of protecting Natural Capital. The idea was seeded from an unsuccessful attempt to create an investment product that delivered investors both economic and environmental dividends. I thank my business partners that inspired me on my journey, Tony Long, Tony Thompson and Ian Crowley.

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Table of Contents

CERTIFICATION OF ORIGINAL AUTHORSHIP	2
ACKNOWLEDGEMENTS.....	5
LIST OF FIGURES	11
LIST OF TABLES	13
LIST OF ABBREVIATIONS	14
CHAPTER 1: INTRODUCTION	15
1.1 MAIN PROBLEM STATEMENT	15
1.1.1 <i>Background</i>	16
1.2 RESEARCH CONTEXT	18
1.2.1 <i>Agriculture is Part of the Problem</i>	18
1.2.2 <i>Agriculture is Part of the Solution</i>	20
1.3 RISK OF GREENWASHING	21
1.4 GENUINE OPPORTUNITIES	22
1.5 RESEARCH OBJECTIVES	23
1.6 RESEARCH AIMS AND HYPOTHESES	24
1.6.1 <i>Gaps in the Research</i>	24
1.7 STRUCTURE OF THE THESIS	25
CHAPTER 2: FRAMING NATURAL CAPITAL TO ADVANCE ITS INTEGRATION INTO AGRICULTURAL DECISION- MAKING	27
2.1 INTRODUCTION	27
2.2 THE CONTRIBUTION OF ECONOMIC THEORY AND THE EMERGENCE OF NATURAL CAPITAL	28
2.2.1 <i>Contribution of Classical Economic Theory to the Concept of Natural Capital</i>	28
2.2.2 <i>The Contribution of Neo-classical Economic Theory to the Concept of Natural Capital</i>	29
2.3 BIRTH OF ECOLOGICAL ECONOMICS	32
2.3.1 <i>Early Stages in the Development of Natural Capital Theory</i>	32
2.3.2 <i>Expansion of Capital to Include Natural Capital</i>	33
2.4 FOUNDATIONS OF ECOLOGICAL ECONOMICS.....	35
2.4.1 <i>Significant Contributions to the Development of Ecological Economics</i>	36
2.4.2 <i>Planetary Boundaries</i>	38
2.4.3 <i>Critics of the Sustainable Use of Natural Capital</i>	38
2.5 SIGNIFICANT MILESTONES FROM 2000 TO 2022	40
2.5.1 <i>Influence of The Millennium Assessment</i>	41
2.5.2 <i>Beyond the Millennium Ecosystem Assessment: 2012 to 2021</i>	42
2.5.3 <i>The Role of Human Motivation</i>	43
2.6 NATURAL CAPITAL AND AGRICULTURE	48
2.6.1 <i>Agriculture and Natural Capital—A Literature Overview</i>	48
2.6.2 <i>Transitioning to a Focus on Natural Capital in Agriculture</i>	50
2.6.3 <i>Externalities of Food Production</i>	51
2.7 NATURAL CAPITAL FRAMEWORKS	54
2.7.1 <i>Review of Frameworks</i>	55
2.7.2 <i>Challenges in Adopting Accounting Frameworks</i>	58
2.8 CONCLUSION	59
2.9 THE CASE FOR THIS RESEARCH	60
2.10 RESEARCH QUESTIONS	61
2.10.1 <i>Contribution to New Knowledge</i>	61
CHAPTER 3: RESEARCH DESIGN—THEORETICAL FRAMEWORK.....	62
3.1 INTRODUCTION	62
3.2 CHARACTERISTICS OF THE PROBLEM	63

3.3 INITIAL STEPS IN RESEARCH DESIGN USING A CONCEPTUAL MODEL	65
3.4 INTERPLAY BETWEEN HUMAN AND NATURAL COMPONENTS	67
3.5 WORLD VIEW	68
3.6 A PRAGMATIC APPROACH	70
3.7 METHOD—FROM PRAGMATISM TO A TRANSDISCIPLINARY APPROACH	71
3.8 TRANSDISCIPLINARITY IN A COVID WORLD	76
3.9 CONCLUSION	76
CHAPTER 4: RESEARCH APPROACH	78
4.1 RESEARCH METHODS	78
4.2 DATA COLLECTION AND ANALYSIS—CONVERGENT MIXED METHODS	81
4.2.1 <i>The Influence of Agricultural Stakeholders on the Adoption of Natural Capital Accounting</i>	82
4.3 MULTIPLE CASE STUDIES	85
4.3.1 <i>Case Study Parameters</i>	86
4.3.2 <i>Case Study Background</i>	88
4.3.3 <i>Case Study Attributes</i>	92
4.4 FOCUS GROUPS	93
4.4.1 <i>Pre-Focus-Group Survey</i>	94
4.4.2 <i>Focus Group Background</i>	94
4.5 SURVEY DATA.....	96
4.5.1 <i>Survey—Composition</i>	98
4.5.2 <i>Survey Group Distribution</i>	99
4.6 ETHICAL CONSIDERATIONS	100
4.7 CONCLUSION	101
CHAPTER 5: TOOLS AND METHODS USED IN DATA COLLECTION AND CODING PROCESSES	102
5.1 CHAPTER OVERVIEW	102
5.1.1 <i>Challenges in Conducting the Research</i>	102
5.2 ORGANIZING AND MANAGING THE DATA	103
5.2.1 <i>Manual versus QDAS Tools</i>	104
5.3 CODING INTERVIEWS WITH CASE STUDY MEMBERS.....	107
5.3.1 <i>Stage-One Coding: Interviews</i>	107
5.3.2 <i>Stage-Two Coding: Interviews</i>	108
5.3.3 <i>Final-Stage Coding: Interviews</i>	110
5.5 FOCUS GROUPS	113
5.5.1 <i>Focus Group Coding</i>	114
5.5.2 <i>Pre-Focus Group Survey</i>	115
5.6 WIDER SURVEY OF A DIVERSE RANGE OF FARMERS	116
5.7 CONCLUSION	117
CHAPTER 6: RESULTS OF INTERVIEWS WITH CASE STUDY PARTICIPANTS	118
6.1 BACKGROUND	118
6.2 FINDINGS OF THE INTERVIEWS: AN OVERVIEW	120
6.3 TRIGGERS—THE LIGHT BULB MOMENT!	122
6.4 WHAT ARE THE VALUE PROPOSITIONS IN UNDERTAKING NATURAL CAPITAL ACCOUNTING?.....	124
6.4.1 <i>Economic Opportunities</i>	127
6.4.2 <i>Productivity Benefits</i>	129
6.4.3 <i>Benefits from Collaboration</i>	130
6.4.4 <i>Importance of Leadership</i>	131
6.4.5 <i>Improved Environmental Outcomes</i>	132
6.4.6 <i>Key Elements of Natural Capital</i>	133
6.4.7 <i>A Pre-requisites for Investment</i>	134
6.4.8 <i>Climate Change</i>	135
6.4.9 <i>Contribution to Public Good</i>	137
6.4.10 <i>Summary of the Value Proposition</i>	138
6.5 BARRIERS TO ADOPTING NATURAL CAPITAL ACCOUNTING	140
6.5.1 <i>What Have Been the Obstacles to Undertaking a Natural Capital Accounting Approach?</i>	140

6.5.2 Cost of Implementation and on-going management of Natural Capital Accounting.....	142
6.5.3 Lack of Existing Markets—Realising Financial Opportunities is Challenging in Reality.....	143
6.5.4 Lack of understanding of concepts and language.....	145
6.5.5 Inability to Link ecological outcomes to financial outcomes.....	146
6.5.6 Land valuation and behavioural change as barriers.....	146
6.5.7 Behavioural change as a barrier.....	147
6.5.8 Government as a barrier.....	149
6.6 CONCLUSION.....	149
CHAPTER 7: FOCUS GROUPS.....	152
7.1 INTRODUCTION.....	152
7.2 PARTICIPANTS’ UNDERSTANDING OF NATURAL CAPITAL.....	153
7.3 VALUE OF NATURAL CAPITAL AND NATURAL CAPITAL ACCOUNTING TO THE PARTICIPANTS.....	155
7.4 INTEGRATION OF NATURAL CAPITAL INTO DECISION-MAKING.....	159
7.5 IS NATURAL CAPITAL ACCOUNTING UNDERSTOOD?.....	161
7.6 BARRIERS TO IMPLEMENTING NATURAL CAPITAL ACCOUNTING.....	162
7.7 IS NATURAL CAPITAL ACCOUNTING THE BEST WAY FORWARD TO ADDRESS AND REWARD ENVIRONMENTAL STEWARDSHIP?	165
7.7.1 POTENTIAL WAYS TO IMPROVE THE ADOPTION OF NATURAL CAPITAL ACCOUNTING.....	166
CHAPTER 8: SURVEY RESULTS.....	172
8.1 SURVEY.....	174
8.1.1 Who Influences Your Decisions in Relation to Your Agricultural Enterprise?.....	174
8.1.2 How Do Long-term Environmental Issues Rank in the Context of Other Pressures/Issues Facing Day- to-Day Farming?.....	175
8.1.3 How Important is Climate Change?.....	176
8.1.4 Terminology.....	177
8.1.5 Importance of Natural Capital and Natural Capital Accounting to Your Business.....	178
8.1.6 Are Natural Capital and Natural Capital Accounting Understood in your Industry?.....	178
8.1.7 Do You Think Carbon Farming a Priority in Agriculture?.....	179
8.1.8 Environmental Stewardship Programmes.....	180
8.1.9 Of Which Environmental Programmes Have You Heard?.....	182
8.1.10 Is Natural Capital Accounting the Best Method to Stimulate Better Environmental Management?	183
8.1.11 Where are the Most Important Opportunities for Promoting the Management of Natural Capital and what are the Obstacles to Implementing Natural Capital Accounting?.....	184
8.1.12 Farmers willingness to commit to environmental programmes.....	186
8.2 CONCLUSION.....	189
CHAPTER 9: DISCUSSION.....	192
9.1 INTRODUCTION.....	192
9.1.1 Importance of the Research.....	193
9.2 SUMMARY OF THE KEY FINDINGS OF THE RESEARCH.....	194
9.2.1 Common Barriers Identified by Data Sources.....	194
9.2.2 Common Value Propositions Identified by Data Sources.....	196
9.3 WHAT DO THE RESULTS MEAN.....	197
9.3.1 Natural Capital and Natural Capital Accounting are not well Understood.....	197
9.3.2 Including Consumers in the Discussion of Natural Capital.....	198
9.3.3 Environmental Outcomes.....	199
9.3.4 Lack of Tangible Value Proposition in Natural Capital Accounting in Agriculture.....	201
9.3.5 Emerging Value Propositions.....	203
9.3.6 Collaboration is Key to Delivering Value Propositions.....	204
9.3.7 Cost currently outweigh the financial benefits.....	207
9.3.8 Farmer Awareness and Willingness to Engage Despite the Cost.....	208
9.3.9 Permanency and Continuity of Data Collection through Succession.....	209
9.4 THE ROLE OF GOVERNMENT IN SUPPORTING THE ADOPTION OF NATURAL CAPITAL ACCOUNTING.....	212
9.4.1 Challenges of Government Intervention.....	213

9.5 WHAT THESE RESULTS TELL US AND FINAL OBSERVATIONS.	216
9.7 LIMITATIONS	220
9.8 RECOMMENDATIONS AND FURTHER RESEARCH	223
CHAPTER 10: CONCLUSIONS—ADDRESSING THE RESEARCH QUESTIONS	225
10.1 CONCLUSIONS—SUB-QUESTION RQ1	228
10.2 CONCLUSIONS—SUB-QUESTION RQ2	230
10.3 CONCLUSIONS—MAIN RESEARCH QUESTION	232
REFERENCES	234
APPENDICIES	254
APPENDIX A: CASE STUDY INTERVIEWS	255
<i>A-1 Introduction letter and consent form.....</i>	<i>256</i>
<i>A2- Semi-Structured Interview Questions Guide</i>	<i>261</i>
APPENDIX B: FOCUS GROUPS	264
<i>B-1 Introductory Letter and Consent Form.....</i>	<i>265</i>
<i>B-2 Focus Group Agenda Provided to Participant’s.....</i>	<i>269</i>
<i>B-3 Sample of Case Study Interview Statements Provided to Participants pre-Focus Group</i>	<i>270</i>
<i>B-4 Pre-Focus Group Survey</i>	<i>272</i>
APPENDIX C	277
<i>C-1 Farmer Survey and Consent</i>	<i>278</i>
APPENDIX D.....	289
<i>D-1 Case Study Secondary Data</i>	<i>290</i>

List of Figures

FIGURE 1 CLASSICAL AND NEOCLASSICAL VIEW OF CAPITAL	28
FIGURE 2 ECONOMIC CAPITAL—EARLY CONCEPTS, ADAPTED FROM (BARBIER, 2019)	31
FIGURE 3 CATALYSTS THAT LINK ECONOMICS AND NATURAL CAPITAL 1970s TO 1990s	32
FIGURE 4 SCOPUS SEARCH FOR PUBLICATIONS CITING “NATURAL CAPITAL” IN 1990–2022 (SCOPUS, 2020)	36
FIGURE 5 NESTED NATURAL CAPITAL, ADAPTED FROM (PORRITT, 2007).....	37
FIGURE 6 SIGNIFICANT MILESTONES IN THE LITERATURE AND FRAMEWORK DEVELOPMENT FROM 2005-2022	40
FIGURE 7 SCOPUS SEARCH RESULTS FOR "NATURAL CAPITAL" DOCUMENTS BY SUBJECT AREA (SCOPUS, 2020)	42
FIGURE 8 NATURAL CAPITAL ACCOUNTING FRAMEWORK DEVELOPMENT FROM 2000 UNTIL 2021	54
FIGURE 9: CONCEPTUAL DIAGRAM OF AN AGRICULTURAL SYSTEM AND STAKEHOLDER RELATIONSHIPS	64
FIGURE 10: MILLENNIUM ECOSYSTEM ASSESSMENT FRAMEWORK, ADAPTED FROM (MILLENNIUM ECOSYSTEM ASSESSMENT, 2003)	65
FIGURE 11: DRIVING FORCES—PRESSURE—STATE—IMPACT—RESPONSE (DPSIR) INTERVENTION FOR IMPLEMENTING A NATURAL CAPITAL ACCOUNTING FRAMEWORKS IN AGRICULTURE. ADAPTED FROM (SMEETS & WETERINGS, 1999).....	66
FIGURE 12: RESEARCH DESIGN. ADAPTED FROM (CRESWELL & CRESWELL, 2018)	68
FIGURE 13: KNOWLEDGE CO-PRODUCTION. ADAPTED FROM (NORSTRÖM ET AL., 2020)	72
FIGURE 14 LEADERSHIP PRACTICES FOR SOLVING WICKED PROBLEMS. ADAPTED FROM (HULL ET AL., 2020)	73
FIGURE 15 MIXED METHODS APPROACH—DATA SOURCES	80
FIGURE 16 INTERPRETATION OF STAKEHOLDER POWER AND INFLUENCE AROUND AGRICULTURAL	83
FIGURE 17 ILLUSTRATION OF THE FORMATION OF CONCEPTS THROUGH THE CODING PROCESS. ADAPTED FROM (ERLINGSSON & BRYSEWICZ, 2017).....	103
FIGURE 18 AN EXAMPLE OF NVIVO CODING.....	105
FIGURE 19 EXAMPLE OF MANUALLY CODED INTERVIEW USING COLOURED MARKERS.....	106
FIGURE 20 OUTLINE OF STAGE-ONE CODING	108
FIGURE 21 OUTLINE OF STAGE-TWO CODING	109
FIGURE 22 FINAL CODING STRUCTURE FROM INTERVIEWS WITH CASE STUDY MEMBERS.....	112
FIGURE 23: MIND MAP DERIVED FROM FOCUS GROUP CODING	115
FIGURE 24 SCREEN SHOTS OF SURVEY QUESTIONS AS SEEN ON A SMART PHONE	116
FIGURE 26 RELATIVE IMPORTANCE OF THE VALUE PROPOSITION CATEGORIES	126
FIGURE 27 RELATIVE IMPORTANCE OF THE OBSTACLES FACED BY ENTERPRISES IN ADOPTING NATURAL CAPITAL ACCOUNTING	141
FIGURE 28. WHY IS NATURAL CAPITAL IMPORTANT TO YOUR BUSINESS?	156
FIGURE 29. DO YOU KNOW OF OTHERS IN YOUR INDUSTRY REPORTING ON THE RISKS POSED BY THE DEGRADATION OF NATURAL CAPITAL?	160
FIGURE 30 HOW WELL IS NATURAL CAPITAL ACCOUNTING UNDERSTOOD?	161
FIGURE 31 LOCATIONS OF PARTICIPANTS IN THE SURVEY	172
FIGURE 32 RESPONDENT BY FARM TYPE	173
FIGURE 33 RESPONDENT BY FARM AREA.....	173
FIGURE 34 AGE RANGE OF SURVEY RESPONDENTS	174
FIGURE 35 WHO INFLUENCES YOUR DECISIONS IN RELATION TO YOUR AGRICULTURAL ENTERPRISE?	175
FIGURE 36 HOW DO LONG-TERM ENVIRONMENTAL ISSUES RANK IN THE CONTEXT OF OTHER PRESSURES AND ISSUES FACING YOU IN DAY-TO-DAY FARMING?.....	175
FIGURE 37 IMPORTANCE OF CLIMATE CHANGE TO AGRICULTURE BY AGE CATEGORY	176
FIGURE 38 SURVEY RESPONSES TO STATEMENT “CLIMATE CHANGE WILL IMPACT YOUR BUSINESS”	177
FIGURE 39 WHICH OF THESE TERMS HAVE YOU HEARD BEFORE?	177
FIGURE 40 IMPORTANCE OF NATURAL CAPITAL AND NATURAL ACCOUNTING TO YOUR BUSINESS	178
FIGURE 41 HOW WELL ARE ‘NATURAL CAPITAL’ AND ‘NATURAL CAPITAL ACCOUNTING’ UNDERSTOOD?	179
FIGURE 42 ENVIRONMENTAL STEWARDSHIP PROGRAMMES THAT RESPONDENTS INDICATED THEY ARE OR HAVE BEEN INVOLVED WITH?	182
FIGURE 43 OF WHICH OF THESE ENVIRONMENTAL PROGRAMMES HAVE YOU HEARD?	183
FIGURE 44 MOST IMPORTANT OPPORTUNITIES FOR PROMOTING THE MANAGEMENT OF NATURAL CAPITAL.....	184
FIGURE 45 OBSTACLES TO UNDERTAKING NATURAL CAPITAL ACCOUNTING	186
FIGURE 46 PERCENTAGE OF YOUR FARM AREA THAT YOU WOULD SET ASIDE TO GENERATE VEGETATION BENEFITS	186
FIGURE 47 WILLINGNESS TO SET ASIDE FARM AREA FOR VEGETATION BENEFITS.....	188
FIGURE 48 MINIMUM PERIOD ESTIMATED TO DELIVER A RETURN ON INVESTMENT IN A CARBON PROJECT	188
FIGURE 49 PERCEPTIONS OF REALISATION OF BENEFITS FROM SOIL CARBON PROJECTS BY AGE COHORT	189

FIGURE 50 BARRIERS TO THE ADOPTION OF NATURAL CAPITAL ACCOUNTING IDENTIFIED IN THE RESEARCH	195
FIGURE 51 SUMMARY OF IDENTIFIED VALUE PROPOSITIONS.....	196
FIGURE 52 LAND TO MARKET PARTNERS REPRODUCED WITH PERMISSION OF LAND TO MARKET AUSTRALIA.....	205
FIGURE 53. THE VALUE CHAIN. REPRODUCED WITH PERMISSION FROM LAND TO MARKET AUSTRALIA	206
FIGURE 54 IMPORTANCE TO STAKEHOLDERS V SIGNIFICANCE OF IMPACT	218
FIGURE 55 COST OF IMPLICATION V LIKELIHOOD OF CHANGE	219
FIGURE 56 IMPORTANCE TO SOCIETY V IMPORTANCE TO BUSINESS	219

List of Tables

TABLE 1 NATURAL CAPITAL THEMES IDENTIFIED IN THE LITERATURE.....	46
TABLE 2 KEY THEMES OF THE LITERATURE IDENTIFIED WITH TERMS “NATURAL CAPITAL” AND “AGRICULTURE”	53
TABLE 3 EXAMPLES OF SOME KEY NATURAL CAPITAL FRAMEWORKS AND PUBLICATIONS.....	56
TABLE 4 STAKEHOLDER ANALYSIS OF THOSE PARTICIPATING IN THE FOCUS GROUPS.....	83
TABLE 5 CASE STUDY CHARACTERISTICS	88
TABLE 6 CASE STUDY ATTRIBUTES.....	92
TABLE 7 PRE-FOCUS GROUP SURVEY – SURVEY STRUCTURE.....	94
TABLE 8 SURVEY STRUCTURE	98
TABLE 9 EXAMPLES OF FOCUS GROUP CODING	114
TABLE 10 DESCRIPTION OF CASE STUDY ATTRIBUTES	118
TABLE 11 CASE STUDY ATTRIBUTES.....	119
TABLE 12 TRIGGERS THAT INFLUENCED THE ENTERPRISES IN THE CASE STUDIES TO IMPLEMENT NATURAL CAPITAL ACCOUNTING	123
TABLE 13 RELATIVE IMPORTANCE OF IDENTIFIED THEMES FROM INTERVIEWS	127
TABLE 14 ECONOMIC OPPORTUNITIES IDENTIFIED AS VALUE PROPOSITIONS	128
TABLE 15 ENVIRONMENT AS A VALUE PROPOSITION.....	132
TABLE 16 KEY NATURAL CAPITAL INDICATORS IDENTIFIED BY INTERVIEWEES	134
TABLE 17 PRE-REQUISITES FOR INVESTMENT	135
TABLE 18 HIGHLIGHTS THE KEY THEMES IDENTIFIED DURING CODING FOR BARRIERS TO ADOPTION	141
TABLE 19 COST OBSTACLES TO THE IMPLEMENTATION OF NATURAL CAPITAL ACCOUNTING	142
TABLE 20 LINKING ECOLOGICAL CONDITIONS TO FINANCIAL	146
TABLE 21 LAND VALUATION A BARRIER TO IMPLEMENTATION.....	147
TABLE 22 CHANGING BEHAVIOURS A BARRIER TO IMPLEMENTATION	148
TABLE 23. WHAT DOES IT MEAN WHEN YOU HEAR THE TERM ‘NATURAL CAPITAL’?	154
TABLE 24 BARRIERS THAT PREVENT INDUSTRY ADOPTING A NATURAL CAPITAL APPROACH OR FOCUS.....	162
TABLE 25 SUMMARY OF STRATEGIES IDENTIFIED IN FOCUS GROUPS TO IMPROVE THE UPTAKE OF NATURAL CAPITAL ACCOUNTING IN AGRICULTURE	167
TABLE 26 FOCUS GROUP CODING SECTION 1.....	169
TABLE 27 FOCUS GROUP CODING SECTION 2.....	170
TABLE 28 KEY ELEMENTS REQUIRED TO MOVE NATURAL CAPITAL FROM NICHE TO MAINSTREAM.....	217

List of Abbreviations

AFN – Accounting for Nature

CFI – Carbon Farming Initiative

CN30 – Carbon Neutral 2030

DPI – Department of Primary Industries (NSW)

DPSIR – Driving Forces – Pressures – Impact – State - Responses

EOV™ – Ecological Outcome Verification

ERF – Emissions Reduction Fund

ESG – Environmental, social, and governance

GDP – Gross domestic product

GHG – Greenhouse gases

IPCC – Intergovernmental Panel on Climate Change

IR – Integrated reporting

L2M – Land to Market™

MEA – Millennium Ecosystem Assessment

MLA – Meat and Livestock Australia

QIC – Queensland Investment Corporation

QLRF – Queensland Land Restoration Fund

SEEA – System of Experimental Environmental Accounts

SOC – Soil organic carbon

TEEB – The Economics of Ecosystems and Biodiversity

TFND – Task Force on Nature-related Financial Disclosures

OECD – Organisation for Economic Cooperation and Development

UN – United Nations

UNCCD – United Nations Convention to Combat Desertification

UTS – University of Technology Sydney