Designing Regenerative Transitions

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Thesis submitted in fulfilment of the requirements for the degree of

Doctorate of Philosophy

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Michelle Alina Miller declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy in the Design, Architecture, and Building Faculty at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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ABSTRACT

This research makes empirical and theoretical contributions to the developing field of Transition Design.

First, this research offers a Transition Design project Case Study in agricultural sustainability, an area where there are no Transition Design case studies yet. Taking a practice-based design research approach, the Case Study project focuses on Regenerative Agriculture transition in New South Wales, Australia during the period from 2017 through 2023. The researcher as designer-practitioner engages as a change agent through semi-structured interviews, involvement in multiple working groups (including a recycled organics market building project), and experimentation with a farmer/sector transition business idea, TransitionAg. The project results in naming barriers and enables of transition, a set of Opportunity Areas, transition personas, a Theory of Change for Regenerative Agriculture Transition, and a provocation for broader visions for more sustainable agriculture. Insights from the Case Study, for instance the potential transferability of holistic decision-making, three regenerative principles, and design as an Adaptive Cycle, inform Transition Design methodology.

Second, this research maps elements of Transition Design practice through an analysis of empirical cases, and then uses these elements of practice to support the process of developing the Case Study approach and reflecting on practice. That work yields several contributions to Transition Design methodology and practices, including: a conceptual framework for structuring practice, seven dynamics of transition experience, six meta-activities of Transition Design processes, protocols for collaborative practice, and a Field Guide for practitioners.

Participant feedback attests to the value Transition Design can offer societal transformation—in agriculture and beyond.

KEYWORDS: Transition Design, design, sustainability, transition, transformation, Transition Research, Regenerative Agriculture, just and regenerative futures

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I acknowledge the Traditional Custodians of the lands on which this research was conducted and of the lands on which I live—the Gringai people, Wonnarua Country. Like the Traditional Custodians, may we all find ways to live, work and act in harmonious relationship with land, sea, sky, community, and creation. I pay my respects to elders past, present, and emerging.

I acknowledge my positionality and privilege as a designer and researcher from a Western context, having worked in corporate, social, and academic environments. I have the deepest gratitude for those who have shared knowledge and wisdom with me so far, and those who continue to try to find ways forward together. I seek to pay it forward in service of a regenerative and just future for us all.

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I give thanks to this Earth from which I come, which nourishes me, and which will someday take me in again.

Table of contents

CHAPTER 1 RESEARCH CONTEXT 16

1.1 Introduction 17

The growing urgency for transition 17

Wicked problems in agricultural transitions 19

Transition Theory 21

The role of design in transitions 23

Assembling a design practice for transitional times 26

Designing for transition to Regenerative Agriculture 30

CHAPTER 2 TRANSITION DESIGN PRAXIS 33

2.1 Transition Design—praxis and the practice context 34

Defining 'practice' 35

The emerging Transition Design approach 35

The practice context 37

2.2 Literature review of empirical cases 39

Orienting to practice via an analysis of empirical cases 39

Identifying a sample of empirical cases 40

Practices 43

Format analysis 49

Methods - three clusters 51

Cluster 1) Cases using a Transition Design framework method 52

Cluster 2) Cases featuring methods specific to a phase or activity 53

Cluster 3) Cases formed around methods that build agency and capacity for transition 54

Survey of methodological origins 55

2.3 Recap of the empirical case analysis 56

2.4 How this research builds on existing practice 58

The gap between approach and practice—Elements of practice 58

Distinguishing among Theory of Change, Theory of Action, and Transition Theory 60

Theory of Change 60

Theory of Action 61

Transition Theory 61

How these concepts help construct practice 61

Process as meta-activities 61
Mindset and postures for transformation—through protocols 62
Towards regenerative principles—the significance of a (re)generative approach 63

CHAPTER 3 RESEARCH METHODS 67

3.1 Research approach 68
Research methodology – two lenses 68
Lens 1) This research as Practice-Based Design Research 68
Lens 2) Researching Transition Design practice as Action Research 69
Project as a 'case' for reflective practice 70
Defining the case 71
Analysis of the case 71
3.2 Concepts of value and validity in this research 72
Defining *value* 72
Scientific validity 73
Transferability of research, not repeatability 73
3.3 Researcher Positionality 74
Ontology and epistemology 74
Axiology—The role of values and researcher bias 75
3.4 Use of language and terminology 76
3.5 Expected beneficiaries of this research 77
Primary research outcomes—Value to practitioners 77
Secondary outcomes—Transition impact 78
3.6 Research process and milestones 78

CHAPTER 4 THEORY OF CHANGE 80

4.1 Transition Theory 81
Overview of select Transition Theories 81
Multi-Level Perspective (F.W. Geels) 82
Multi-actor dynamics (an area of research) 83
X-curve (Loorbach, Hebinck et al.) 84
Three Horizons Framework (Hodgson, Sharpe, Curry) 85
Bridges Transition Model—Organizational and personal transitions 86
Panarchy and Adaptive Capacity 87
Comparing conceptual frameworks for transition 89

4.2 Opportunity areas—Where to intervene in a system 92
Towards a practice of framing Opportunity Areas 92
Working with lenses to frame Opportunity Areas 93
Defining 'Objects of Design' 95
4.3 Structuring a Theory of Change—relevant to transitions 96
Process for developing a Theory of Change 97
Criteria for the Regenerative Agriculture transition Theory of Change 98
An appropriate structure for the Theory of Change 98
4.4 Will Regenerative Agriculture contribute to sustainability transitions? 99
CHAPTER 5 THEORY OF ACTION 102
5.1 Process as activities 103
Why an analysis of process? 103
Selecting appropriate process examples for comparison 106
Seventeen process examples—brief definitions 107
Design Thinking Process (Stanford dSchool) 107
Human-Centered Design Process (HCD) (IDEO 2015) 107
Lean Startup (Ries) 109
Double Diamond (Design Council UK) 110
Strategic Design (Miller) 112
The 'Thinking Wave' and 'AcdB' method for strategic conversation (Second Road) 113
Action Research 114
Place-based Collective Impact Framework for Practice 115
Collaborative Change Cycle (Collaboration for Impact) 116
Protocols for Respect (Yunkaporta) 117
Theory U (Scharmer) 122
Cynefin Framework (Snowden) 124
Transition Management Cycle (Loorbach) 125
Frame Innovation (Dorst) 126
Transition Design approach (Irwin, Kossoff, and Tonkinwise) 127
Transition Design themes (Sides et al.) 128
Process analysis 130
Process characteristics 133
Non-linearity, iterations, cycles, and clusters of activities 133
Relational and respectful ways of working 133

Building agency, capacity, and self-determination through process *134*
Timing—waiting time, relational time, change over horizons of time, and ecological time *134*
An ecosystem of diverse responses at multiple levels—ultimately for societal impact *135*
Experimentation in systems *135*
Process as a crucible for personal and collective transformation *138*
Summary of process characteristics *138*
5.2 Protocols for collaborative practice 140
5.3 Approach 141
Living Systems principles and their relevance to the Case Study approach 141
Comparing five approaches to assemble the Case Study approach 142
Ojai Water Case Study *142*
The Future of Fish Case Study *143*
TACSI systems change initiatives *144*
Theory U and Social Labs *144*
Place-based Collective Impact *145*
Working with goals rather than visions and futures 146
Envisioning a project approach 146
5.4 Testing and iteration 149
Defining the term 'testing' 149
Factors for testing 149
Instances of testing throughout the project and research 152
CHAPTER 6 CASE STUDY 153
6.1 Regenerative Agriculture—further context 154
Jumping into a contested context 154
Regenerative Agriculture definition and practice 154
6.2 Overview of the project approach 156
Project approach 156
Participation 157
Semi-structured interviews—49 participants *157*
Working Groups *158*
Workshops *158*
TransitionAg *159*
6.3 Phase 1 - Initiate and Situate 159
Steps of the Initiate and Situate phase 159

Framing the research *159*
Scoping Research *160*
Scoping Validation—Second round of testing *162*
Reflections on the Initiate and Situate phase 163
Iteration of barriers, Opportunity Areas, and strategies that enable farm transition *163*
Validation as a process that supports relationship building *165*
Holistic Decision Framework *166*
6.4 Phase 2 – Reframe, Respond and Envision 168
Where and how to Intervene—Reframing Barriers into Opportunity Areas for Responses 168
Collaborating with Working Groups to develop interventions 173
Working group: Compost as a Catalyst 178
Working Group: TransitionAg 183
Working Group: Rewilding Moore Park 186
Working Group: WWF Local Learning Labs 187
Summary of additional working groups 190
Reflecting on the working groups 193
6.5 How Regenerative Agriculture is defined will impact sustainability transitions 193
Developing a definition from farmer interviews 194
Redefining the farmer's pride and joy 195
A contested definition 196
A regenerative definition for a Regenerative Agriculture 197
The potential to transform agriculture 198
6.6 Social Justice Blindspot 198
Is social justice within the purview of agriculture transitions? 199
Exclusion 199
Holistic means holistic 202
An opportunity for solidarity 208
An opportunity for reconciliation 209
Regenerative transitions are just transitions 209
Transition requires pluralism 210
Engaging constructively with difference 211
6.7 Phase 3 – Harvest 212
About Harvest activities 212
Steps of the Harvest phase 213
Synthesis into an Illustrated Field Guide *213*

Reflections on the Harvest phase 214
Demonstration of Transition Design outputs, methods, and tools 214
Participant reflections on the overall project and role of Transition Design 220

CHAPTER 7 PRACTICE AND METHODOLOGY INSIGHTS 228

7.1 Novel application of existing methods 229
7.2 Synthesis of the *experience* of transition 231
What is the human experience of transition? 231
Seven dynamics of transition experiences 232
7.3 Methodology insights from Regenerative Agriculture 235
Regenerative principles—working regeneratively with living systems 235
Working with nature 236
Holistic 236
Congruent 236
Significance of these principles 237
7.4 Design as an ecological process—an Adaptive Cycle 238
The central, generative role of framing 238
Process as an Adaptive Cycle 240
7.5 Synthesis into an 'elements of practice' framework 243
Transition Design 'Elements of practice' framework 243
Anatomy of the Elements of Practice framework 245
Theory of Change and Theory of Action as the two halves of practice (axes) 245
Sections of the framework 245
Theoretical and methodological foundations 245
Working with the Elements of Practice framework—as a compass 246

CHAPTER 8 FINAL DISCUSSION 247

8.1 Contributions of the research 248
Summary of research contributions 248
Contribution to Regenerative Agriculture and transitions 249
Regenerative Agriculture can contribute to sustainability at scale 251
Contribution to Transition Design 251
Contribution to the practice base 251
The long tail of systems experimentation 252
Understanding the dynamics of transitions 253

Participant perspectives on value *254*
Limits to practice *255*
8.2 Implications for practice 257
Further opportunity for mutual exchange between practice and context 257
Toward a pluriverse of visions and responses 258
Normalize getting 'lost in transition' 258
Transition Design builds (re)generative and adaptive capacities 259
The role for Transition Design 260
8.3 Further opportunities for research 261
Research into Transition Design and transitions 261
Research into Regenerative Agriculture 263
8.4 Conclusion 265
Regenerative principles—Living Systems / Complexity Theory in practice 266
A growing need and opportunity for Transition Design 267
Appendix A: Empirical case studies 268
Appendix B: Survey of methodological origins 270
Appendix C: Field Guide 284
References 405

List of Figures

Figure 1. Wicked Problems, Rittel and Webber (Source: Irwin and Kossoff 2017a, p. 5) 19
Figure 2. The Transition Design framework (Source: Irwin, Kossoff and Tonkinwise, 2015a, p. 7) .. 36
Figure 3. Transition Design phases (Source: Irwin, 2018, p. 972) 37
Figure 4. Empirical examples published by year in this sample 40
Figure 5. Map of empirical cases by location (World map graphic by Freepik) 42
Figure 6. Empirical cases by topic 43
Figure 7. 'System in Focus' map from the case study: Agricultural production system 48
Figure 8. Many types of Systems Maps (Source: Ingrid Burkett) 49
Figure 9. Practice-based design research 69
Figure 10. Stages and milestones of the Case Study project 79

Figure 11. Multi-Level Perspective (MLP) (Geels, 2002, p. 1263) 82
Figure 12. X-curve (Hebinck et al., 2022, p. 1012) 84
Figure 13. Three Horizons Framework (Wahl, 2017) 85
Figure 14. The Bridges Transition Model, Bridges 86
Figure 15. Adaptive Cycle (left) and Panarchy (right) (Gunderson and Holling, 2002) 87
Figure 16. Organizing principles of complex adaptive system features (Preiser et al., 2018, p. 5) .. 89
Figure 17. A Strategy Framework for Just Transition (Source: Movement Generation, 2016, pp. 16-17) 97
Figure 18. Programmatic Theory of Change structure versus a System Theory of Change structure 99
Figure 19. Design process (Source: Onø Design, n.d.) 104
Figure 20. Design Thinking Process (Stanford dSchool, 2012, p. 6) 107
Figure 21. Human-centered design process (IDEO, 2009, p. 11) 108
Figure 22. Inspiration, Ideation, and Implementation process for human-centered design (IDEO, 2015, p. 11) 109
Figure 23. Lean Startup (Ries, 2011, p. 75) 109
Figure 24. Double Diamond, Design Council UK 111
Figure 25. Framework for Innovation, Design Council UK (Drew, 2019) 112
Figure 26. Strategic Design (Miller, 2016, p. 117) 112
Figure 27. The Thinking Wave, Second Road (Jenkins, 2015) 113
Figure 28. The AcdB Strategic Conversation Method, Second Road (Jenkins, 2015) 114
Figure 29. The Spiral of Action Research Cycles (Zuber-Skerritt, 2001) 115
Figure 30. Place-based Collective Impact process (Source: SCA, 2019) 116
Figure 31. Collaborative Change Cycle (Collaboration for Impact, n.d.) 117
Figure 32. Sand Talk, Table of Contents (Yunkaporta, 2019, p. 17) 120
Figure 33. Theory U (Scharmer, 2009) 122
Figure 34. The Cynefin framework, Snowden 124

Figure 35. Transition Management Cycle (Loorbach, 2007, p. 115) 126
Figure 36. Frame Creation process, Dorst (Source: Willemsen and Watson, 2018) 126
Figure 37. Transition Design phases (Irwin, 2018, p. 972) 127
Figure 38. Situate, Reframe, and Intervene Themes (Sides et al., 2022, p. 146) 129
Figure 39. Summary of the Case Study project phases 148
Figure 40. Iteration of the 'System in Focus' map 161
Figure 41. The Holistic Management Framework (Savory and Butterfield, 1999, p. 51) 167
Figure 42. Opportunity Areas by system theme (system level) 171
Figure 43. Reframing from Barriers to Opportunities and Responses (Field Guide, p. 67) 172
Figure 44. Doughnut economics (Raworth, 2017) 205
Figure 45. Theory of Change for Regenerative Agriculture transition 218
Figure 46. Rebraiding Rivers—a Theory of Change for sustainability transitions 219
Figure 47. The dynamics of transition experiences 231
Figure 48. Adaptive Cycle (adapted from Gunderson and Holling, 2002). 240
Figure 49. Design process as an Adaptive Cycle (adapted from Gunderson and Holling, 2002) 241
Figure 50. Design process as an Adaptive Cycle in 3-D and multiple cycles over time horizons 242
Figure 51. Elements of Practice framework—the 'compass' diagram 244

List of Tables

Table 1. Instances of citations within the downloaded set of papers (by year then alphabetically) 41
Table 2. Analysis of methods, formats, and practices across the empirical cases 51
Table 3. Comparison of Transition Theory frameworks 90
Table 4. Comparison of process examples by activities 130
Table 5. Meta-activities in the Transition Design approach 132
Table 6. Process characteristics 138
Table 7. Protocols for collaboration 140

Table 8. Core Case Study activities 147

Table 9. Factors that establish the validity or value of qualitative research 149

Table 10. Three early-stage factors to assess *potential* value 151

Table 11. Case Study project—Activities and methods by phase 156

Table 12. Summary of Participants 157

Table 13. Iteration of themes across phases (Barriers and Opportunities) 164

Table 14. Summary of working groups 177

Table 15. Most significant barriers to transition as named by workshop participants 181

Table 16. Summary of evaluative interview feedback and Field Guide changes 226

Table 17. Catalogue of methods by origin 229

Table 18. Research contribution 249

Table 19. Further research into Transition Design 262

Table 20. Further research into Regenerative Agriculture transition based on this research 264

Chapter 1
Research Context

1.1 Introduction

The growing urgency for transition

We are living in transitional times, and this is driven, to a significant extent, by the impacts of human activity. To get a sense of what this means, let's look at the current conditions faced by farmers in Australia. The description of these conditions will set the context for the Regenerative Agriculture Case Study at the centre of this research into Transition Design practice.

Over the past five years, the state of New South Wales (NSW) has faced unprecedented bushfires and then flooding, which were preceded by one of the worst droughts in recorded history—and it is expected that this trend will worsen (UNEP with Chandra, 2022). Farmers in the state have been significantly impacted by "climate chaos" events (Wright, 2023, WWF Australia, 2021). Scientists point to these events as well as the planetary boundaries Australia has breached (biodiversity, land system change, and nitrogen and phosphorus flows), which are significantly linked to agricultural practices, as indicators of disrupted ecosystem function and impacts beyond the carrying capacity of our environment—in short, human induced climate change (Zyngier 2022; the concept of planetary boundaries is attributed to Steffen et al., 2015). Folke et al. (2010) explains the potential consequences, particularly if we do not make changes to how humans relate to and impact our environment and the 'Earth System':

> *To put the issue in context, ice core data reveal that humanity has for the last 10,000 years lived in a relatively stable climate, an era referred to as the Holocene. This era has allowed agriculture and all major human civilizations to develop and flourish. The future of human wellbeing may be seriously compromised if we should pass a critical threshold that tips the earth system out of this stability domain (Rockström et al. 2009). It is plausible that current development paradigms and patterns, if continued, would tip the integrated*

> *human–earth system into a radically different basin of attraction (Steffen et al. 2007). Preventing such an undesired critical transition will require innovation and novelty. Profound change in society is likely to be required for persistence in the Holocene stability domain. Alas, resilience of behavioral patterns in society is notoriously large and a serious impediment for preventing loss of Earth System resilience. [Socio-ecological systems] resilience that contributes to Earth System resilience is needed to remain in the Holocene state (p. 2).*

Land clearing, deforestation, agriculture, and land management in Australia have altered energy, nutrient, and water flows, eroded topsoil, and compromised natural cycles and systems at many scales, from local ecosystems and small water cycles to broader ecosystems including rivers, underground aquifers, and oceans. These changes amplify loss of habitat, species, and biodiversity. In a 'sunburnt country', a much-cherished term coined by Australian poet Dorothea Mackellar, water and nutrients are precious, and keeping these cycles intact is vital for agriculture and ecosystem services now and into the future.

Global dynamics further compound agricultural challenges. The COVID-19 pandemic crashed local economies, disrupted supply chains, and put Australian food security into sharp focus. Political, economic, and market insecurity globally, complicated by war, creates a level of instability and uncertainty that hasn't been felt since WWII. A global market means global interdependence, and much of Australia's policy, export, and infrastructure locks us into these dynamics, at least for the short to medium-term (Iles, 2021).

Urgent challenges like carbon sequestration, climate moderation, and renewable energy transition are becoming competing goals for land managers and planning departments, who are debating whether to allocate land use and resources to food, fibre, fuel (e.g., biofuels), or conservation (including carbon sequestration). The Australian population continues to grow, which will translate to more demand on agriculture if there are no changes in food waste percentages, diets, and consumption habits. Farmers are facing increasing input costs, cost-of-living rises, and threat of resource scarcity. Economic vicissitudes directly impact farmers, where some markets are up but others are down, and labour can be harder to access, particularly post-COVID. In addition, urban and regional development encroaches on peri-urban farming areas, and climate change puts pressure on marginal farming areas. Agriculture faces pressure from all sides and, to manage viable operations, farmers are looking to an assortment of strategies that work from their perspective, for instance climate-smart agriculture, genetic modification, targeted

chemical use, and intensification. Some farmers are looking to transition to an entirely different farming paradigm—for instance, regenerative, resilient, and agroecological approaches, which often feature (some would say, 'appropriate') ancient and Indigenous practices. Regenerative Agriculture, a growing alternative, is further defined at the end of this chapter.

However, transitions are not easy. Attempts to transition the current agricultural paradigm fall into the class of problems known as "wicked problems" (Rittel and Webber, 1973). Wicked problems are "a type of problem that is difficult or impossible to solve because it has incomplete, contradictory and continually changing parameters" (Irwin & Kossoff 2017a, p. 5). Figure 1 lists the qualities of a wicked problem as described by Irwin and Kossoff (2017a).



Figure 1. Wicked Problems, Rittel and Webber (Source: Irwin and Kossoff 2017a, p. 5)

Wicked problems in agricultural transitions

Each quality of wicked problems surfaces a different aspect of the difficulty in transitioning agricultural paradigms. Firstly, any farmer seeking to transition the paradigm that underpins their agricultural management system will have to grapple their own challenges unique to place, context, personal values, and circumstances. As farmer interviews in the Case Study (Chapter 6) will show, there are numerous factors that come into play when a farmer is considering transitioning their agricultural management system. A transition may require certain risks and

effort, like building new capabilities, acquiring new equipment, up-front investment, likelihood of failure when first implementing new practices, and financially anticipating for a potential drop in production. Where farmers seek to transition to an agricultural paradigm such as Regenerative Agriculture that runs counter to the dominant agricultural system (i.e., beyond technical changes to their management system), they may experience additional challenges like accessing suitable markets, obtaining appropriate prices for products, and social ostracization.

Shifting the view from farmers to the context in which they are farming, transitions get more wicked. Farmers, land managers, and the agricultural sector do not agree on the problem—and some do not agree that there is a problem with the existing paradigm. The efficacy and potential benefits of proposed solutions are debated, as will be discussed further with respect to Regenerative Agriculture (Chapters 4 and 6). The negative impacts of our agricultural sector are not just a result of how we farm, they are linked to and driven by factors outside of agriculture, such as consumer sentiment and behavior, societal attraction to technological solutions, and capitalist market dynamics that simultaneously drive for growth and low prices. Any structural attempt to shift the parameters that hold the existing agricultural paradigm in place, whether via markets, policy, education, financial mechanisms, etc., will have unpredictable flow-on impacts for Australian farmers and international markets. No matter the change, it is likely that someone will be negatively impacted.

Existing systemic structures reinforce, or 'lock-in', the current paradigm, amplifying the difficulty of transition. Iles (2021) outlines and defines eight 'lock-ins'—structural dynamics which reinforce the status quo—that illustrate why transition to alternative farming paradigms is wicked from a systems perspective. The lock-ins as described by Iles include: the implementation of a European agricultural model in Australia, settler colonialism impacts and attitudes toward nature and First Nations peoples, Australian geographic factors (e.g., a semi-arid continent), policy-making institutions' relationship with the dominant agricultural paradigm, neoliberal agricultural policies that drive further pressures on farmers, dominance of industry supply chains, accelerating environmental and climate impacts, and visions of the future driven by science and technology. Agri-food transitions and transformations, which not only involves farmers and consumers, but also whole communities and supply chains, is occurring around the world at different scales (for a sampling of the discourse see Bergez, 2019; Stefanovic, Freytag-Leyer and Kahl, 2020; Weber et al., 2020; Conti, Zanello and Hall, 2021; and Klerkx, Turner and Percy, 2022). The Case Study will add to perspectives on barriers and enablers of regenerative agriculture transition, including system barriers, opportunity areas, ideas for interventions, and the potential for true transformative

change, across which there is a limited but growing body of knowledge and critique (for a sampling of the discourse see Burgess et al., 2019; Fassler, 2021; Giller et al., 2021; Gordon, Davila and Riedy 2021 and 2013; Grelet et al. 2021; Gosnell, 2022; Brown, Schirmer, and Upton, 2022; SMI, 2022; and Bless, Davila, and Plant, 2023).

Transition Theory

The field of research concerning 'transition' "[originated] in Northern Europe within the academic fields of Innovation Management and Technology Assessment" (Irwin, Kossoff and Tonkinwise, 2015a, p. 5). *Transition* is conceptualized as the "structural and systematic reconfiguration of a stable societal system towards a new dynamic equilibrium, understood to evolve over decades or generations" (Hebinck et al., 2022, p. 1009). Transition research is not just aimed at understanding the dynamics of change, it also seeks "leverage for guiding societal transitions" and "the role of agency in driving processes of change" (Hebinck et al., 2022, p. 1009).

Loorbach, Frantzeskaki and Avelino (2017) trace the evolution of transition research from historical, innovation-oriented analysis to the broader concept of societal systems-change and related governance and policy implications, and from a socio-technical transition and innovation process focus to a concept of transitions as being simultaneously socio-ecological, socio-economic, socio-political, and socio-technical systems-change (pp. 602-605). They describe how the discipline has come to "understand transitions as combined processes of building up and breaking down", and how transitions, which develop in a shock-wise manner (rather than gradual way) through stepwise changes of systemic reconfiguration, are not the same as change itself (p. 605-7). They correlate this definition of transition with concepts like "the idea of punctuated equilibria and tipping points in evolutionary biology and ecology" and "similar nonlinearities… studied in innovation sciences, often referred to as disruptive innovation" (p. 607).

Over the past couple decades, evolving in tandem with the emerging understanding of what sustainability means (discussed below), transition research has come to focus on 'consumption-production systems… embedded in nature-society interactions', with attention to impacts across long horizons of time and long distances (e.g., in how the consumption patterns of one society can affect the sustainability outlook of another) (Geels, Kern and Clark, 2023, p. 2-3). In this context, the term 'transition' has come to refer to the conviction that cumulative human endeavor is endangering our own future and that "whole societies and their infrastructures must transition

toward more sustainable states", and that it is expected that "that these transitions will require systems-level change" (Transition Design Seminar, n.d., accessed online).

As a note, in the literature *transitions* and *transformations* are not the same—these areas have their own communities of practice and bodies of literature. For this research, I draw from the analysis of Hölscher, Wittmayer and Loorbach (2018), who position the two areas of research as mutually beneficial and having moved "closer together in recent years" (p 2). Hölscher, Wittmayer and Loorbach distinguish the two as having "different system foci" and not as "a dualism, but a duality – they are not mutually exclusive": transitions are understood as pertaining to *how* "non-linear shift[s]" across diverse domains are "supported or hindered" for a "sustainable system state"; whereas transformations are conceptualized as attending to the 'what' e.g., "emergent patterns of change and how...these affect outcomes", particularly "creating safe and just operating spaces to avoid undesirable system change" (for instance planetary boundary overshoot) (p 2). The discussion of 'sustainability' below will show that the normative distance between what is understood as a 'sustainable system state' and 'safe and just operating spaces' is converging. Transition Design, although under the moniker of 'transitions', addresses both transitions and transformations.

What the term 'sustainability' means is contentious. The term 'sustainability' is considered unacceptable to some for opposing reasons. As the Regenerative Agriculture Case Study in this research will describe, some reject the notion of climate change (as discussed in Hernandez, Luke, and Alexanderson, 2024) and some find the normative positionality of both terms, 'sustainability' and 'regenerative', offensive. On the other hand, some farmers in the Case Study found the term 'sustainability' unacceptable because they believe it to mean "sustaining the status quo", which is not good enough for them. Particularly relevant for the Case Study in this research, "*Regenerative* has been conceptualized as the 'new sustainable'" (Gordon, Davila and Riedy, 2021). This idea has been put forward in other contexts (Mang & Reed, 2020).

As will be discussed in the section, 'Social Justice Blindspot', interpretations of the term 'sustainability' by farmers in this study by and large do not acknowledge the definition of 'sustainability' that pertains to equity and social justice, as held by many in fields like sustainability and transition science. One of the most "famous" (Ceschin & Gaziulusoy, 2016, p. 118) definitions of 'sustainability' originated with what has come to be called the Brundtland Report, titled "Our Common Future" (UN Secretary General and WCED, 1987). In this report the authors state, "Sustainable development seeks to meet the needs and aspirations of the present

without compromising the ability to meet those of the future" (p. 51). This definition makes peoples today responsible to peoples of the future, evoking ancient Indigenous worldviews like the Seventh Generation Principle, which is understood to mean stewardship that considers the wellbeing of peoples seven generations into the future, and seven generations into the past. Recent discussions, such as those focused on just and equitable transitions, have come to emphasise that transitions should not only attend to temporal sustainability (impacts across time), but also spatial sustainability (impacts across places and for diverse peoples today)—Geels, Kern and Clark (2023) explain,

> *a consensus is now emerging that the ultimate goal of sustainability should be pathways of development along which people improve their current well-being equitably, i.e., without degrading the ability of other people—elsewhere on the planet or in future generations— to define and pursue their own visions of improved well-being (p. 2).*

The role of design in transitions

All forms of design have a role to play in sustainability transitions and over the years multiple fields of design practice have come to focus on sustainability, which Ceschin and Gaziulusoy (2016) track across four innovation levels: Product, Product-Service System, Spatio-Social and Socio-Technical System. Irwin, Tonkinwise and Kossoff (2020a) trace the involvement of design approaches with transition studies and questions of sustainability from the "sub-discipline of sustainable design" in the 1990s focused primarily on "production-side issues" to "questions of sustainable consumption in the 2000s", which then led to a focus on "'systems level change'", "'design for sustainable behavior'", and "discourses and practices close to what is now called sustainability transitions" (p. 32-33).

This research is concerned with the practice of design for sustainability transitions, particularly via Transition Design, an emerging area of design practice that was framed in 2015 by Terry Irwin, Gideon Kossoff, and Cameron Tonkinwise (2015a). Transition Design is defined as "**an emerging, transdisciplinary field** aimed at **addressing complex (wicked) problems that manifest in culture and place-specific ways"** through **"systems level change—change that is coordinated across multiple societal sectors at multiple levels of scale over long arcs of time**" (Kossoff and Irwin 2022, p 22. Emphasis added). Irwin, Kossoff, and Tonkinwise (2015a) establish the context for Transition Design as design's role in transitions to sustainable futures,

> *Transition Design acknowledges that we are living in 'transitional times' and takes as its central premise the need for societal transitions to more sustainable futures and the belief that design has a key role to play in these transitions (p. 4).*

In circumscribing the origins of Transition Design, Irwin (2019c) explains that,

> *Transition Design or "design for transition" brings together two powerful memes: (a) the idea that entire societies will need to transition toward sustainable futures, and (b) the realization that this will involve systems-level change informed by a deep understanding of the anatomy and dynamics of complex systems (p. 19-20).*

Transition Design is concerned with wicked problems. Citing Dubberly, Irwin, Tonkinwise and Kossoff (2020a) outline how "design practitioners, theorists and researchers have worked to develop tools and methodologies" relevant to wicked problems by "**[integrating] design's core competencies (visualization, prototyping and form-giving) with user-centered, social and generative research methods** that continually **evolve in parallel with a deeper understanding of the dynamics of social complexity**" (p. 33, emphasis added).

Sustainability transitions, of which agricultural transitions are a subset, are a penultimate wicked challenge for all the reasons named by Rittel and Webber (1973) and as visualized by Irwin and Kossoff (2017a) in Figure 1. For instance, as discussed earlier, sustainability issues are of global proportions with disproportionate impact on different populations and demographics, but there is no global agreement on what sustainability means, even on an ethical or values basis, and it is interpreted differently by different people. Sustainability issues (and responsibilities for action) cross multiple systems, all systems layers, and organisational boundaries with interrelated and interdependent social, political, cultural, behavioral, technological, economic, and environmental causes and impacts. Attempts toward sustainability transitions in one system, system layer, or dimension of a system will have emergent properties, with results appearing over time in unpredictable ways, in other systems, system layers, and dimensions. It can take time for the shifts to occur, and it may not be clear whether outcomes can be fully attributed to changes made. Sustainability issues may never be fully resolved and the need to live sustainably presents ongoing dilemmas for humanity and how we co-exist long-term with one another, all living and non-living beings, and this planet. Sustainability transitions are wicked in many ways, but what we know is that the sustainability issues we are experiencing now, and the sustainability impacts

we see in the future will be properties produced by the system we have established: In the words of W. Edwards Deming, “Every system is perfectly designed to get the results it gets”.

Although this research zooms in on Transition Design, it recognises and weaves in other interpretations of design for transitions. For instance, while acknowledging Transition Design, others frame similarly intentioned practices with other terminology, including “design for system innovations and transitions” (Ceschin & Gaziulusoy 2016, p. 138), “design for sustainability transitions” (Gaziulusoy 2019, p. 2), and “systems shifting design” (Drew, Robinson, and Winhall, 2021). Gaziulusoy and Öztekin (2018) construct a history of integration of design and sustainability transitions.

Over the course of this evolution of design for sustainability, and in tandem with other developments like social forms of design, the past few decades have seen design as a discipline, and designers with it, stretch into territories that brought design out from behind the historical, mysterious, and *supposedly* politically neutral ‘arbiter of taste’ role, sometimes referred to as ‘expert design’ (Manzini, 2015). Over the years, design has increasingly engaged collaboratively in the world of complex social, technical, economic, and environmental challenges (which will never be politically neutral), including sustainability transitions.

To be clear, the act of designing has never been politically neutral. Even design which concerns “the superficial and simply ‘aesthetic’ works on a political level” (Zabolotney, 2007, p. 26). Indeed, “design is political, even when it isn’t engaged in formal politics” (Vaughan, 2017, p. 1-2). Whether consciously or not, designs and the act of designing carry the seeds of the ontological origins from which our actions and artefacts are conceived. Designers’ values, beliefs, and worldviews, as part of an ontology, are not only embedded into every artefact, intervention, and output but also, by ‘thinging’ an ontology, designers perpetuate the ‘worlding’ of that ontology (Willis, 2006, p. 70, referencing Heidegger).

Humanity requires new, socially constructed ways of meeting our most fundamental needs, and therefore design practices relevant to that challenge. In pursuing sustainability, Transition Design necessitates “a more holistic worldview” among designers (Irwin, Kossoff and Tonkinwise, 2015a, p.8). But to achieve sustainability, there is a view that we must go beyond worldview shifts to an ‘ontological turn’ e.g., the ability to value multiple worlds (for discussions of the ‘ontological turn’ see Escobar, 2007; Todd, 2017; Ansari, 2019). Emmanouil (2017) describes ‘ontological openness’ as “Being open to encountering and experiencing ‘other’ realities...and in turn, undergo ontological and epistemological shifts” (p. 87). The task of the Transition Designer, as a change

agent, is to help to create spaces, experiences, and propositions that facilitate the possibility of ontological openness for themselves and amongst others as well.

There is some tension between 'sustainability' as a normative concept and the need to value multiple ontologies to achieve sustainability. If we define sustainability as peoples' ability to meet their needs today without compromising the ability of other peoples in other places today and in the future to meet their needs as well, as discussed earlier, then we can reconcile this normative goal with the idea that peoples who co-exist simultaneously can arrive at their own ways of achieving sustainability—for a pluriverse of futures. The 'pluriverse' is "*a world where many worlds fit"* (citing the Zapatistas), a world of biological, epistemic, cultural, and ontological difference (Escobar 2017, p. *xvi*). The need for ontological openness to plurality plays out through this research in the definition of Regenerative Agriculture, discussed later in this chapter and across Chapter 6, as well as in how I frame the elements of practice in Chapter 2 and Chapter 7.

Transition Design is also connected with the project of decolonising design. Decolonising design is not "inclusion and representation", but rather the "unsettlement and destabilization of forms—diffused, naturalized, and habitual—that instil colonial relations of power" (Schultz et al., 2018, p. 3) through design, processes of designing, the discipline of design, education of designers, and concepts of design itself (see Appendix B, 'decolonising design' for further discussion and readings). The social justice and healing aspects of regeneration are tied to decolonial efforts. My experience over the course of this research has been one of finding design and agriculture on parallel journeys with respect to regeneration and decolonisation which, I believe, is a signal of the broader and contested discourse currently unfolding in Australia. I cannot claim, however, that this research contributes to decolonising practice; I have sought to take steps toward creating conditions for ontological openness.

Assembling a design practice for transitional times

The primary focus of this thesis is *practice*, including questions of what practices are within the territory of Transition Design, how someone assembles their own design practice for transitions, and what sort of practice is relevant to a Transition Design project focused on Regenerative Agriculture. Transition Design was established in 2015, and I began my research in 2017. As I will discuss in Chapter 2, in looking to understand potential Transition Design practices so I could construct my own practice and project, I leaned heavily on descriptions of practice from the

Transition Design framers, like the Ojai case study (Irwin and Kossoff, 2017a and 2017b) and further discussion in 'The emerging Transition Design approach (Irwin, 2018).

As Irwin (2018) explains, newer forms of design like human-centered design, design ethnography, service design, strategic design, and social innovation etc., have needed to integrate practices and methods from well researched methodologies like social research, transdisciplinary and participatory practice, and community development to ensure design activities are appropriately co-created and implemented in complex social contexts e.g., based on credible and responsible methodologies that set out theoretical, ethical, and practice foundations. Integrating social research and evidence-based approaches has been vital to the effectiveness of 'social' (meaning both collaborative *and* concerning social challenges) forms of design in the endeavor to demonstrate rigor, build trust with stakeholders, properly prepare designers for engaging in social contexts, and ensure the work is ethical from the perspective of diverse stakeholders—including people who could be harmed or exploited and groups who have been heavily over-researched.

Designing in the context of transitions also stretches time frames across longer horizons than the weeks, months, and *maybe* years of typical design projects and practices. Extending over longer time frames, including "waiting and observing" as called for in the Transition Design approach (Irwin 2019, p. 156), does present challenges in gathering evidence about the change-making potential of interventions and engaging in broader scales of reflexivity. Practice will have to grapple with this difficulty of evidence and attribution at some point, as well as the difficulty of enabling 'reflexivity as a matter of scale' (for a preliminary discussion see Lu and Sangiorgi, 2021).

As noted in quoting Irwin (2018) earlier, although Transition Design is defined as transdisciplinary, aimed at system-level change, and involving new skills from other domains, the essential competencies of design remain—visualization, prototyping, and form-giving. These competences have a purpose, and that purpose confers a key characteristic: **Design is propositional** (Drew, Robinson, and Winhall, 2021, p. 26) e.g., concerned with "'the conception and realization of new things'" (Cross 1982, p. 221). Design brings a habit of immersing in, scanning across, and integrating knowledge (synthesis, as defined in Kolko, 2011) in search of opportunities and ideas, seeds of the future, to fashion those ideas into new ways forward through iterative experimentation.

The propositional nature of design helps to unpack more characteristics of design—integrating knowledge, generating ideas, iterating, and experimenting with how change can be materialized, so that we learn and 'lead' from the 'future as it emerges' (Scharmer, 2009, p. 7). Not content with

stopping at visions or ideas, and not limiting sources of inspiration to one way of knowing, design involves integrating knowledge through the practice of materialising ideas into forms that can be experienced, like visuals, narratives, videos, physical objects, play-acted experiences, and digital media for example (as 'modelling' in Cross 1982, p. 221). By 'making to learn', ideas are improved through generative experimentation and iteration, and change-making propositions are realised.

These characteristics of design differentiate it from creative arts and knowledge production. In design, creativity and knowledge production are enlisted to help integrate and materialize ideas into workable, generative (meaning here: promising, energy-creating) propositions through experimentation. Cross, drawing from an RCA report by Archer and others, refers to design and "designerly ways of knowing" as a "third culture", noting that "Design has its own distinct 'things to know, ways of knowing them, and ways of finding out about them'" (1982, p. 221).

One of the most quoted definitions of design is from Herbert Simon (2019), who defines '*design'* as *'devising a course of action aimed at changing existing situations into preferred ones'* (referenced in Irwin, Tonkinwise and Kossoff, 2015b; and Schön, 1983, p. 46). Schön (1983) further describes design as *"a reflective conversation with the situation"* (p. 76). Design has the somewhat elusive and frustrating quality of simultaneously being a noun, a proper noun, and a verb. 'A design' as a noun is the output of creative, form-giving processes to achieve a specific end. 'Design' as a proper noun is a professional discipline of form-giving in service of specific objectives. 'To design' or 'designing' as a verb is the process of form-giving to achieve intended outcomes. Regardless of the design discipline (e.g., product design, interaction design, graphic design, service design, architecture, landscape design, etc.), designing is a goal oriented, form-giving, generative activity through which the end output of multiple cycles of testing, obtaining feedback, and iterating is judged by how well it satisfies intent (fit for purpose). As Swann (2002) emphasizes, the design process is not linear, "The design process is iterative. It can only be effective if it is a constant process of revisiting the problem, re-analyzing it and synthesizing revised solutions" (p. 53) Change is implicit in design, whether the resulting changes are fully intentional or not. The output of design introduces a novelty into a context and creates change—design is a process of changemaking.

The act of materialising propositions can have profound impact. Design not only 'discovers' ways forward through making, the process of designing delivers change; "'**A designed artifact is a researched proposition for changing reality**'" (Swann, 2002, p. 52, quoting Mike Press). The 'designed artifact' may be a micro-change, a ripple, but design materializes a possibility where

before it may not have been clear if a possibility could be made real *at all*. And once made real, the proposition allows us to inspect whether we have achieved our intent or not and iterate accordingly. What's more, the design process itself, the very act of people going through experimentation and encountering materialized propositions, also changes people.

Many of the skills and approaches that design and designers have acquired in recent decades – think whiteboards and walls of post-it notes, for instance – have become more common (though not in all contexts) and some of these skills are not the exclusive purview of design (whether anymore or from the start). For example, facilitated participatory workshops and activities, systems mapping, and even co-design practices are used in many contexts that aren't considered design. Whether people are designing as a normal human activity, co-creating together, or experts in design (Manzini, 2015), imagining and then materialising propositions through generative and iterative experimentation is fundamentally an act of design, and it is a core skill needed for transitions. Furthermore, forms of design that are socially oriented (e.g., generating ways forward together) and ecologically oriented (sustainable, renewing, and regenerative) are needed to deliver the types of innovation required for transitions. Accordingly, for this research, I will be working with the following definition of Transition Design:

> *co-creatively materializing regenerative futures and catalyzing systems change through design experimentation, (re)invention, and intervention.*

Transitions demand not only technological and technical systems innovations, but also myriad social and socio-technological systems innovations – including reinventing how we live and our relationship with nature. Governance, economic models, markets, community structures, mechanisms for coordinating action, processes for engaging people in decisions, educational systems, and services to help meet needs are all 'social innovations' (as opposed to technological innovations), with significant environmental implications. Agri-food systems, supply chains, provision of electricity, the internet and the digital domain are socio-technical-ecological systems. Everything man-made that we can touch, experience, or interact with has been designed, and much of that may be innovated, reinvented, and redesigned for transitions to sustainability. Finding ways to put the propositional nature of design—particularly via co-creative approaches—in service of sustainability challenges and how these challenges manifest in the everyday will be core to materializing the future and catalyzing systems change. Schön (1983) outlined this opportunity for design in his seminal work, 'The Reflective Practitioner',

> *The situations of practice are not problems to be solved, but problematic situations characterized by uncertainty, disorder and indeterminacy… What is called for, under these conditions is not only the analytic techniques which have been traditional in operations research, but the active, synthetic skill of 'designing a desirable future and inventing ways of bringing it about' (p. 15-16).*

How transitions occur matters as well. To the point raised earlier, transitions will not achieve sustainability unless a new relationship between humans and nature is at the heart of changes we make. The Just Transitions movement (as articulated via organisations like Movement Generation, 2016, and the Climate Justice Alliance, n.d.) emphasises that,

> *Transition is inevitable. Justice is not (Movement Generation, 2016).*

Through the Regenerative Agriculture Case Study, this research will immerse in the concept of regeneration from the perspective of farmers and, through reflective and reflexive practice, will return to a discussion of what working with nature and the regenerative, self-organising properties of life can mean for the practice of designing for transitions. The task is not just to put design in service of accelerating transitions, but to design for regenerative transitions.

Designing for transition to Regenerative Agriculture

In the early phases of scoping this research, I learned about the *potential* of Regenerative Agriculture to underpin a more sustainable agriculture, and to contribute to sustainability overall. Regenerative Agriculture was noted among the 100 solutions presented as having high potential to impact carbon drawdown (and by extension climate change) in Paul Hawken's book 'Drawdown' (2017). According to participants, getting uptake of Regenerative Agriculture has been very slow over the past 30 years or so, whilst those who adopted the practices have often pieced together their own farming system slowly (over decades), going against their neighbours, community, and peers—and sometimes being ostracized for doing so. Participants held an assumption that the broader population of farmers would be less inclined to cobble together their own practice or face social ostracization, and thus transition would be an even more important concern for the next waves of farmers interested in Regenerative Agriculture:

> *The regenerative farmers have done this despite the system rather than because it." But not everyone is going to be able to do that, "how do you flip it on the head*

> *because the system is encouraging and supporting it—that's the transition" (164 Academic and Institutional stakeholder).*

Meanwhile, the Agribusiness Task Force of the Sustainable Markets Initiative, initiated at the invitation of The former Prince of Wales, attached urgency to the rate of transition:

> *Despite clear long-term benefits, the rate of farmers adopting regenerative agriculture has been slow due to the costs of changing existing practices, the lack of knowledge… and the misalignment of value chain drivers. According to sustainability analysts Systemiq, the regenerative farming growth rate must triple to reach 40% of global cropland, and deliver against the planet's need to limit climate change to 1.5 degrees (SMI, 2022, website, paragraph 2).*

At the time I began semi-structured interviews in late 2018, transition to Regenerative Agriculture was growing rapidly as a global discussion.

But what is 'Regenerative Agriculture? As I will discuss in Chapter 4 and through the Case Study in Chapter 6, that very question is the topic of a contested debate surrounding Regenerative Agriculture (Giller et al., 2021, p. 17; Grelet et al., 2021, p. 7; Gosnell, 2021; Gordon, Davila and Riedy, 2021 and 2023; Cultural Survival et al., 2020; Hyett 2020, p. 3; Fassler, 2021). The debate is critical because the answer that gains general acceptance has the potential to constrain or ensure the extent to which Regenerative Agriculture is broadly adoptable, contributes to regional and global sustainability, remains open to innovation in methods, and attends to healing harms of colonisation and the resulting intergenerational trauma. Participants told me that a good definition of Regenerative Agriculture would need to be consistent with the concept of regeneration itself. For instance, they described how the definition should not be too limiting or tightly prescriptive so as to constrain proliferation, diversification and (further) innovation; it should be useful and practical enough to enable application; it should work with nature and complex systems; it should create spaces for many niches together with repeating elements that benefit bigger systems so that all can thrive; it should be socially, environmentally, economically, and spiritually holistic; it should acknowledge the millennia of First Nations practices that informed Regenerative Agriculture. These parameters for the definition give cues as to how to define Regenerative Agriculture in a way that promotes regeneration.

If we define 'regeneration' as the self-healing, life-giving property inherent in all life, then 'Regenerative Agriculture' is an approach to agricultural production **in which the property of**

regeneration is the ecological basis of production. Farmers identified that they were achieving ecological and human wellbeing, climate resilience, and production by working with the self-renewing properties of life, in the way that nature works. The way participants defined Regenerative Agriculture is consistent with principles of Living Systems and Complexity Theory (as described in Irwin, 2011 and Preiser et al., 2018) as well as with First Nations approaches which preceded it and, many argue, were used without acknowledgement or recognition (Cultural Survival et al., 2020; Fassler, 2021). In how farmers described Regenerative Agriculture, there is congruence between the means and ends: the approach to farming works with the capacity for renewal, and so yields regenerative outcomes. **Regeneration is the approach and the outcome.** To reframe that slightly,

> *Regenerative Agriculture achieves regeneration and production by working with the self-renewing qualities inherent in nature.*

Depending on the way the Regenerative Agriculture becomes commonly understood and the extent to which more and more farmers take up agriculture, Regenerative Agriculture could represent more than a (new/rebadged) farming system—it *could* represent a new stage in embedding the ontology of a relational and holistic human-nature interaction into agriculture. The extent to which this transformation occurs depends upon many interrelated factors but, relevant to this research, the potential for transformation will be influenced by the extent to which Regenerative Agriculture is enabled by and helps catalyze holistic systemic change and transition in agriculture and in societies around the world.

Chapter 2
Transition Design praxis

About this chapter

This chapter further introduces Transition Design. An analysis of empirical cases provides an orientation to Transition Design *practice*. Five opportunities are identified to build on existing practice through this research: identifying elements of practice, distinguishing among key terms (Theory of Change, Theory of Action, and Transition Theory), setting out process as meta-activities, working with protocols to help make mindsets and postures actionable, and introducing regenerative principles as part of translating Living Systems theory into practice.

2.1 Transition Design—praxis and the practice context

This research is specifically focused on the question of how Transition Design, including the Transition Design framework and approach, has been and/or could be manifested through *practice*—that is, through methodology, methods, specific practices, and tools. Going one step further, this research is also concerned with the question of how someone wanting to undertake Transition Design constructs their practice. I investigate these questions via a Case Study project in Regenerative Agriculture, and across this thesis I step through the process of identifying the elements of practice (this chapter), constructing my own practice (Chapter 4 and 5), deeply engaging in the Case Study context (Chapter 6), and then reflecting on practice (Chapter 7), drawing out what I learned about Transition Design practice *through* practice.

This research is an exercise in *praxis*, where praxis is defined as a dialectic between theory and practice. This definition comes from the Action Research writings of Zuber-Skerritt (2001, p. 15)—noting that praxis takes different meanings in different contexts. Praxis in Zuber-Skerritt's terms resists the 'Aristotelian dualism' which puts theory and practice in opposition (Lechner and Frost, 2018, p. 36) and obscures the vital, mutually beneficial relationship between the two (Yee, 2007).

Through this research I describe my attempts to embody and enact theory *through* aspects of practice. Groundwater-Smith (2017) describes praxis as “morally informed action”, and this description elicits the normative aspect of shifting systems for sustainability transitions and the role of axiology and ontology in this research.

Defining ‘practice’

Depending on the use, ‘practice’ (Collins Dictionary, n.d.) may mean something that people do regularly, an established method of doing something, doing something regularly to learn and be able to do it better, to achieve proficiency and fluency, the exercise of a profession, and to teach or train through practice, to exercise, etc. For Transition Design, as an emerging discipline, practice includes methodologies and approaches, process, specific methods, practices, tools, etc. Over the course of this research, I will develop a deeper understanding of the practice base of Transition Design, forming my own practice for a specific context (Regenerative Agriculture transition), applying that practice through a project, learning, and adapting along the way, and ultimately reflecting on what I have learned about practice, through practice.

The emerging Transition Design approach

Introducing Transition Design as a new area of practice, Irwin, Kossoff and Tonkinwise (2015a) outlined the ‘Transition Design framework’ (Figure 2), which is a conceptual model. The Transition Design framework establishes four areas of knowledge, action, and self-reflection: visions for transition, theories of change, posture and mindset, and new ways of designing (p. 7). To enact the framework, Irwin, Kossoff and Tonkinwise for: (1) narratives and visions of the future... (2) ...amplifying and connecting grassroots efforts and projects... [and] (3) ...work in transdisciplinary teams to design new, innovative, and place-based solutions... (2015a, p. 10).

The Transition Design framework establishes the conceptual boundaries of Transition Design and sets out a “logic for bringing together knowledge and practices outside the design Disciplines (p. 971). As the foundations of a new discipline, the Transition Design framework serves a significant purpose: naming the gap in design practice and carving out the conceptual space for exploring Transition Design as an emerging discipline. The framework helps manifest Transition Design into existence and is of vital importance for establishing its distinction amongst other disciplines.



Figure 2. The Transition Design framework (Source: Irwin, Kossoff and Tonkinwise, 2015a, p. 7)

Irwin also sets out a phased approach (Figure 3), with the three phases identified as reframing present and future, designing interventions, and waiting and observing (p. 972). The three phases help point to the types of activities and methods that may be involved in an approach. However, as I conclude in Chapter 5 based on an analysis of other processes in preparation for the Case Study, more activities need to be specified to enact Transition Design.

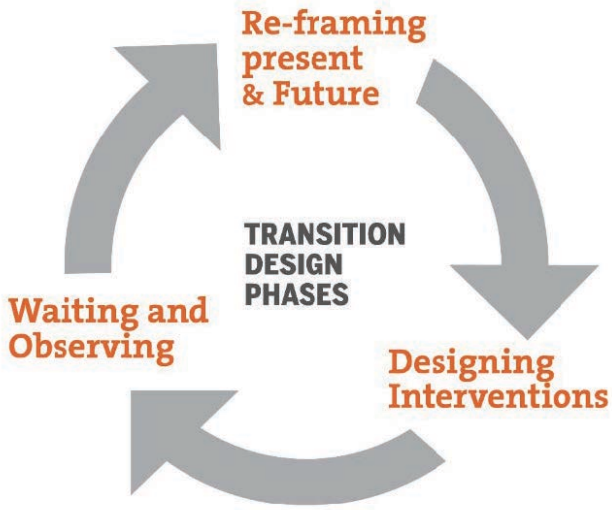


Figure 3. Transition Design phases (Source: Irwin, 2018, p. 972)

The Transition Design framework together with the three phases comprise 'the emerging Transition Design approach", which Irwin describes as nascent, open to "feedback, critique and engagement" (p. 153). The Transition Design framers provide guidance as to practice through the 'emerging approach' but—deliberately—do not dictate how practice should be enacted in every situation (Irwin, 2018, p. 971). Transition Design founders state their intent "to develop this area with the help of other educators, practitioners, and researchers" (Irwin, Kossoff, and Tonkinwise, 2015a, p. 4), and the 'emerging Transition Design approach' is a crucial enabler of that work.

The practice context

When I first began this research, which included conducting a literature review and scoping research (2017-2019), there were two dynamics at play. First, Transition Design was in its early days. Transition Design as a new area of practice had been introduced to the world through publications like the Transition Design Provocation (Irwin, Kossoff and Tonkinwise, 2015a), Irwin's 'Proposal' (2015), an early version of the Educational Framework (Irwin, Kossoff and Tonkinwise 2015b), Transition Design Seminar materials available on the Carnegie Mellon Design School website, including the 'Monograph' (Irwin et al. 2015c), and the 'The emerging Transition Design approach' (Irwin 2018). The first of two Cuaderno special issues focused on Transition Design (to date) was published in 2019 (Cuaderno 73; https://doi.org/10.18682/cdc.vi73).

In the time frame when I was undertaking the initial literature review and project framing, the only case studies to draw from that I was aware of included Ojai (Irwin and Kossoff, 2017a and 2017b),

Future of Fish (Dahle, 2019), and the Visions and Pathways 2040 project (Gaziulusoy and Ryan, 2017). In a similar search, van Selm and Mulder (2019, p. 335) reported finding only one case study. It felt urgent to get out into the field. In my designerly way of trusting in the process, I settled on a 'bricolage' approach e.g., a 'pick and mix' approach (Yee, 2010, p. 16), to assembling my practice from related methods, methodologies, practices, and tools at hand, drawing from my own professional practice and experiences in social innovation, systems change, strategy, service design, business model innovation, design innovation, and place-based collective action.

Secondly, early interviews to scope this research turned me toward 'increasing the uptake of regenerative agriculture, by design' as a tenable transition project, but I was entirely new to agriculture and regional New South Wales (NSW). To be clear: I knew NOTHING about regenerative agriculture or how it might manifest in NSW. I was familiar with Permaculture, organic agriculture, and 'conventional' agriculture, but I was entirely new to regenerative agriculture. And I knew NO ONE in agriculture in NSW.

Participatory visioning activities feature heavily in the Ojai and Visions and Pathways 2040 cases. However, I would need the trust of stakeholders and a passable depth of understanding to design and facilitate conversations regarding Regenerative Agriculture. I needed to first build relationships, undertake deep discovery, and ethnographically immerse in the context for some time. I felt the 'relational' emphasis (Escobar, 2017, p. *x*) of Transition Design e.g., being in relation with people, place, and nature, substantiated my choice.

Furthermore, the nascent Regenerative Agriculture movement, although propelled greatly by the publication of 'The Call of the Reed Warbler' (Massy, 2017), was not a centralized movement but a series of distinctly different discourses (Gordon, Davila and Riedy, 2023), loosely affiliated, decentralized, and primarily of grassroots origins. Prominent 'nodes' (not always communities of practice) largely revolved around a dozen or so well known (and sometimes infamous) innovative farmers and influencers—many of whom disagree with each other. Who would I invite to participatory visioning activities if no one 'owned' Regenerative Agriculture, many of the proponents were at odds with each other, and no one (yet) trusted me to facilitate such conversations? Meanwhile, the enthusiasm rising around Regenerative Agriculture was being met with an equal and opposite rejection among many industrial agriculture proponents, including those who resented the idea that their management was 'degenerative'.

To initiate a project focused on designing for transitions in Regenerative Agriculture in NSW, I needed a different mechanism or format for engaging in this context, different from the activities

identified in the ‘approach’, as evidenced through the Ojai case study (Irwin and Kossoff, 2017a and 2017b). I note that now (2024), after a phase of growth of the Regenerative Agriculture movement, increasing calls for just, equitable, and regenerative transitions around the world, and a greater depth of my own familiarity with the context and stakeholders, I do believe that it could be tenable for me to call for, help facilitate, or otherwise contribute to an ongoing or long-term visioning exercise that is open (with agricultural stakeholders and beyond) and distributed (e.g., not centralized or held with a singular group). The potential to create regenerative visions for agriculture is discussed in Chapter 6 and is included in the Field Guide as a provocation.

Through a comparison of six different formats (discussed in Chapter 5), I selected the ‘systems-change incubation’ format outlined in the Future of Fish case study (Dahle, 2019), in which I (designer-researcher-practitioner) would work as a change agent to help amplify the work of proponents of Regenerative Agriculture already deeply involved in helping farmers transition. This format served me well and was further enabled later by my TransitionAg business experiment, which afforded me a financial vehicle through which I could engage in paid projects and build a platform through online media. The project unfolded as well as I possibly could have hoped, and in line with the approach I had framed—which was designed as stated to allow time for building relationships, emergence, iteration, and organic growth.

2.2 Literature review of empirical cases

Orienting to practice via an analysis of empirical cases

For the rest of this thesis to make sense, there is a need to orient to Transition Design practice now, from the start. To these ends, I undertook a scan of the literature to identify a sampling of empirical case studies. This sampling of empirical cases provides fluency with the growing body of practice and range of practices associated with Transition Design, and a language to discuss the process of constructing a practice and the Case Study.

Since the inception of Transition Design in 2014/5 and despite any potential flow-on impacts from COVID 2020-22, empirical examples of practice have been steadily accumulating. The scan conducted for this research, which is not comprehensive, identified 25 case studies. See Figure 4 for number of case studies identified by year in the sampling I undertook, and Appendix A for the

specific citations of the empirical example sampling. The literature scan reveals patterns in formats, methods and practices and enables a discussion of practices in my Case Study.

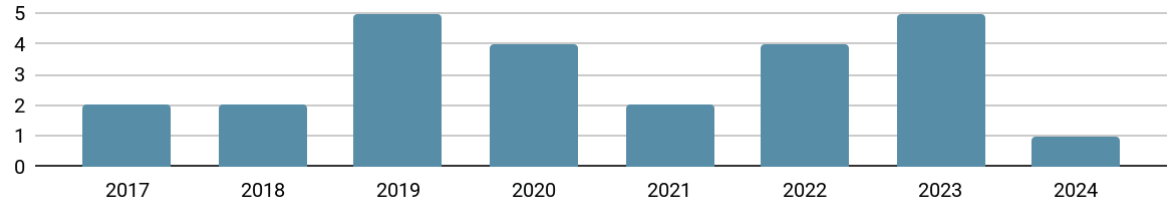


Figure 4. Empirical examples published by year in this sample

NOTE: Scan conducted in early 2024

The sampling and analysis of cases involved the following steps, and each step is described further in this section: 1) identify a sampling of empirical cases featuring Transition Design methodology, 2) read and code the case studies for practices, formats, and methods, and 3) identify themes, and 4) scan for methodological origins.

Identifying a sample of empirical cases

In the first step to identify a sample of empirical cases, I selected two publications developed by Transition Design framers which mention methods and followed Web of Science and Google Scholar search results for papers that cited these two publications.

As of February 24, 2024, the Web of Science reported 130 results and Google Scholar reported 620 results in a search for literature that cites "Irwin, T. (2015). Transition Design: A Proposal for a New Area of Design Practice, Study, and Research. *Design and Culture*, 7(2), 229-246. https://doi.org/https://doi.org/10.1080/17547075.2015.1051829". A second Google Scholar search returned 152 papers citing "Irwin, T. (2018). The emerging Transition Design approach. *Design Research Society 2018: Catalyst*. University of Limerick 25th – 28th June 2018. doi: 10.21606/dma.2017.210." It is noted that the returned results for ‘The emerging Transition Design approach’ referenced the Cuaderno version as well.

I used that search as a starting point, but also supplemented it with searches for "transition design" and publications recommended to me by supervisors and colleagues. This method for identifying empirical cases was selected because “*transition projects* are not always carried out under the flag of transition design” and the search term ‘transition design’ did not procure satisfactory results, as van Selm and Mulder (2019, p. 331) describe.

It is worth further noting that the 'cited by' function is useful but not entirely accurate. For instance, the returned searches did feature the two selected publications (Irwin, 2015 and Irwin, 2018a)—but not always. Sometimes the papers cited other publications by Transition Design framers, but these were considered a happy accident and retained for a second step of scanning. The returned papers also often cited more than one publication by Transition Design framers, although those publications do not always reference Transition Design. See Table 1 for instances of citations among the set of downloaded papers.

Table 1. Instances of citations within the downloaded set of papers (by year then alphabetically)

Tonkinwise 2003a	Tonkinwise 2003b	Tonkinwise 2004	Tonkinwise 2007	Tonkinwise 2008	Irwin 2011a	Irwin 2011b	Kossoff 2011	Irwin et al 2013	Tonkinwise 2014a	Tonkinwise 2014b	Tonkinwise 2014c	Tonkinwise 2014d	Tonkinwise 2014e	Kossoff 2015	Kossoff et al 2015	Irwin 2015	Irwin et al 2015a	Irwin et al 2015b	Irwin et al 2015c	Irwin et al 2015d	Irwin et al 2015e	Tonkinwise 2015a	Tonkinwise 2015b	Tonkinwise 2015c	Tonkinwise 2015d	Irwin et al 2016	Irwin et al 2017a and 2017b	Tonkinwise 2017a	Tonkinwise 2017b	Tonkinwise 2017c	Tonkinwise 2017d	Irwin 2018a	Irwin 2018b	Irwin 2019	Kossoff 2019a	Kossoff 2019b	Tonkinwise 2019a	Tonkinwise 2019b	Tonkinwise 2019c	Irwin et al 2020	Irwin et al 2021	Kossoff & Irwin 2021	Irwin et al 2022	Kossoff & Irwin 2022	Tonkinwise 2023
1	2	1	1	2	1	1	6	6	1	1	2	1	1	5	1	105	24	11	18	1	2	15	3	1	1	1	4	1	1	1	1	36	1	9	3	2	1	1	2	1	1	1	2	2	1

I reviewed the returned searches and filtered for papers that clearly referenced Transition Design methodology. Some cases were excluded. For instance, where pdfs could not be retrieved (7 citations), or where the paper was written in a language other than English.

From those results, I downloaded 163 papers and scanned them for the specified requirements e.g., the papers 1) featured empirical examples (case studies), 2) define their approach as Transition Design exclusively, in combination with other approaches, like participatory design, or related to Transition Design, like design for transitions, and 3) also featured a description of specific methods and practices.

Occasionally more than one paper referenced the same case study. These were counted as one case study, but all additional methods named in the separate papers were counted as new instances of practice (for instance Hyysalo et al. 2019a and 2019b). Some papers discussed multiple cases, or multiple projects within a case, and these were counted as a single case study but the individual instances of practices across the sub-cases or projects were counted as individual instances (for example Wallace, 2019; Samuels-Ballantyne, 2020; Juri et al., 2021). This tabulation approach was used because I expect it will become more normal for Transition Design case studies to feature multiple projects and sub-cases—this is a characteristic of design for transitions practice. It also holds true for my own Case Study—I consider my entire body of work

with respect to Regenerative Agriculture to be one longitudinal project, but through my Case Study I have tracked 10 discrete projects, and that number continues to grow.

The scan for empirical cases resulted in 24 case studies that identified Transition Design in the mix with other methodologies, of which 15 framed their work explicitly as Transition Design. To understand how design for transitions is manifesting in practice, I kept the full set of 24 case studies. This set of case studies represents a sampling of empirical examples directly associated with Transition Design but does not represent all Transition Design case studies. It is, however, sufficient to orient to practice, indicating trends in how Transition Design, including mindsets and postures, is being manifested through practice.

The analysis of empirical cases is discussed here in terms of practices, formats, methods, and methodological origins.

Figure 5 maps empirical cases by country. Some cases pertained to more than one country. Figure 6 maps empirical cases by topic.



Figure 5. Map of empirical cases by location (World map graphic by Freepik)

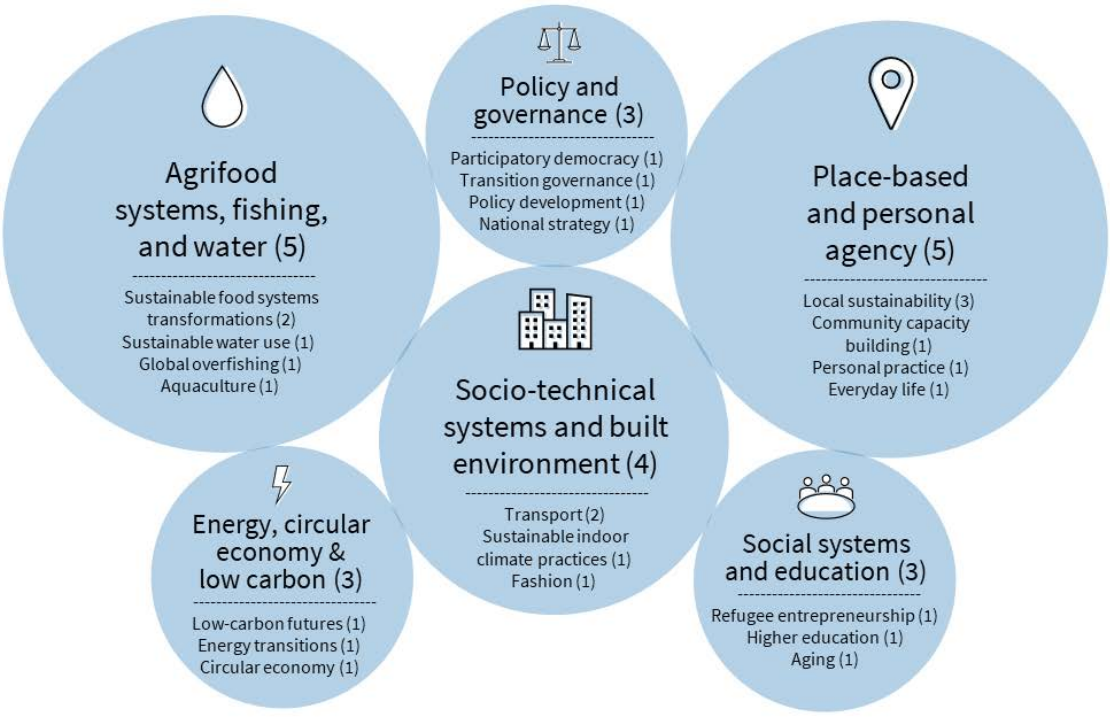


Figure 6. Empirical cases by topic

Practices

In reviewing the empirical cases, I tabulated each practice, tool, and method as named. As the list grew, I clustered practices into groups. Because practices are myriad, it was also not always clear where an author was referring to a specific practice or using descriptive language for a familiar practice. To be safe, in coding I erred on the side of tabulating these descriptors as distinct practices. I note there is a chance that I missed some practices.

The clusters of practice identified through coding and theming are:

- **Data collection (or discovery)** - gathering data to help create an understanding of context and inform action. Methods ranged from qualitative to quantitative, and featured practices like background or desk research (13 mentions), literature review (7), interviews or stakeholder dialogue (8), expert consultation (5), design research, design ethnography, observation, or fieldwork (11), history mapping (1), survey (2), case study analysis (1), quantitative analysis (2), monitoring and measuring (2), and a benchmark study (1). Some emphasized a relational approach, including a mention of ‘deep engagement’ (Samuels-Ballantyne, 2020). Some discussed the need to respect how knowledge is constituted from different

cultures, worldviews, and ontologies (Kashyap, Svejkar and Tonkinwise, 2024) and the role of “multiple evidence-based methods” (Juri et al., 2022, p. 04).

- **Facilitation methods** - Workshops are a workhorse for socially based design methods. When including the sub-cases within the set of empirical examples, 26 of the 29 cases mentioned some form of workshop or facilitated activity. Many of the practices listed here were enacted through facilitated activities. Occasionally specific facilitation methods were named, including Open Space (Costa Gomez, 2019) and Plurishop (Culén, 2023; Culén et al., 2023). World Café is a popular facilitation method not mentioned in these examples.
- **Embodied practice and grounding activities**, e.g., grounding in body, place, community, and context. These practices have diverse origins but share similar goals of supporting people to move out of their heads and into their bodies, perceive their bodies as part of the world and belonging to the world, relate to the place, people, and other living and non-living beings, and to perceive themselves as part of a greater whole. Cases mentioned a diverse range of practices, from somatic (like breathing exercises noted in Costa Gomez, 2019), to connecting to place, country, and caring for country (Kashyap, Svejkar and Tonkinwise, 2024), making phenomenological use of actual objects to help people understand systems (Kashyap, Svejkar and Tonkinwise, 2024), and enacting new possibilities through movement and theatre-based approaches to prototyping, like bodystorming, role playing and stage setting (Culén, 2023), and live or performative prototyping (Samuels-Ballantyne, 2020). All these methods seek to access deeper wisdom and ways of knowing (non-cognitive) to help people activate their imagination, feel the potential of a different future, and make their way to new options through physical experience.
- **Stakeholder and network mapping** - noted in 9 cases, practices included stakeholder concerns mapping (3) and stakeholder relations mapping (3), both named in the Transition Design approach.
- **Sensemaking (methods, tools, and frameworks)** - these practices are used to help analyze and synthesize data, particularly the rich data associated with qualitative research and the complexity of data resulting from mixed methods. Practices noted include identifying challenges and root causes (6), Max-Neef

theory of needs (3), user personas or typologies (8), drivers of change (3), critical uncertainties (3), storywall (1), and mood board exploration (1).

- **Systems sensemaking, systems mapping** - methods, tools, and frameworks specific to helping people make sense of and find opportunities within systems. Analysis methods named in the cases include problem or system mapping (5), sometimes called wicked problem mapping/analysis (3). Analysis may require multiple, layered frameworks. Frameworks mentioned in the cases include the STEEP analysis framework (4), Multi-level perspective (MLP) (8), socio-technical systems mapping (3), causal loop diagramming (2), iceberg model (2), Meadows' Leverage Points (3), barriers and enablers (2), Berkana Two Loops model (1), and object ecosystem mapping (1). A visual systems map may be developed simultaneously or as an output of analysis. There are many types of systems maps, and more than one may be needed (Figure 8).
- **Futuring and visioning** - mentioned in 15 cases, includes a rich array of methods and methodologies. Some of the methods and methodologies cited include: backcasting (7), design fiction (2), critical design futures or speculative futures (1), utopian/dystopian futures (1), causal layered analysis (2), experiential futures (1), foresight analysis (1), and forecasting (1). Narratives and storytelling were used in several cases, sometimes in combination with imagery, often through tools or frameworks that supported their development—including narratives of the 'not seen yet' (1), snapshots from the future (2), cover story (1), stories of everyday life (2), narratives-visual collage (2), vision statement (1), and goals and KPIs (1). Some cases used scenarios to explore a range of possible futures. Scenario methods included speculative scenarios (1), novel use scenarios (1), and small open local and connected (SLOC) design scenarios (1). One case stepped through a full scenario development process (Cowart and Maione, 2022). One case set up a shaman role to support the entrée into the mindset needed for futuring (Onafuwa and Patel, 2022). Futuring and visioning works with imagination, and the limits of our imagination are the limits of our futures. 'Imaginaries' is the term given to societal-level conceptions including shared visions of issues, visions for countries or populations, motivating myths and beliefs, sociotechnical narratives, mental models and imagery, associations, metaphors, etc. (Lockton and Candy, 2019, p. 30). In 'A Vocabulary for Visions', Lockton and Candy (2019) describe the role

designers can play to open up the range of possible futures—de-limiting existing imaginaries and perhaps making them obsolete—by "[giving] us experiential pockets of imaginaries…towards which we might be in transition" (p. 30).

- **Framing opportunity within a Theory of Change** - identifying where to act is a creative leap that involves a mix of understanding opportunities to unlock the current situation, nurturing the seeds of the future present today, identifying the means to scaffold the envisioned future whilst all is in flux, and locating the bridges to build between the two. Practices for opportunity framing named in the cases involve the Winterhouse Institute's Social Pathways (n.d.) (6, with 2 modified from the original framework), developing pathways (3), milestones (1), Theory of Change (4), framing and reframing (5), projects informed by the future (7), and ecologies of intervention or action (2). This activity is not thoroughly described in the literature and will be discussed in Chapter 4.
- **Invention, co-creation, and generative activities** - The interventions, responses, actions, strategies, etc. that will help materialize a desired future also have to be imagined, and the empirical cases indicate how this can be done through invention, co-creation, and generative activities. Practices included design charrettes (3), idea generation (4) and round robin ideation (1), How might we…? (1), generative tools or canvases (2), and frame creation (1).
- **Card sets** - A favourite go-to tool among designers, card sets can help stimulate thinking at any phase. Card sets named included the Group Works Pattern Language (1) and from Culén (2023) The Beautiful Trouble Toolbox, New Metaphors, With/Out modernity, Tarot Cards of Tech, Behaviour economics cards, Narrata storytelling cards, and Maslow Mirrored.
- **Participatory decision-making** - For getting to group-based decisions, practices noted included dialogue, debate, consensus, and voting (Culén, 2023). A broader range of approaches to decision-making exist in practice and the literature but will not be discussed here. An example from Regenerative Agriculture that could potentially be adapted for systems decision-making is the Holistic Decision Framework, is discussed in Chapter 6.
- **Materializing new ideas and change** - Various forms of design feature a range of methods for bringing new ideas and change to life, including different types of prototyping. Prototyping was noted in 10 cases; iteration was noted in 3 cases.

Other practices included persona-based testing (1), pilot (2), peer feedback (2), and (strategic) experimentation (4). Taking an experimental and design-based approach to making change real, other activities were noted, including communities of practice (2), supporting ongoing municipal/regional processes (1), facilitating stakeholder collaboration (1), entrepreneurial idea development (1), business model design (1), service design (1), participatory budgeting (1), providing tools and templates (3), providing actionable data (1), policies and policy instruments (2), convivial events (4) and a symposium (1).

- **Reflection, learning, and evaluation practices** - Reflective practice (Schön, 1983) is common among socially based approaches to design and, from a process perspective, the 'emerging Transition Design Approach' calls for a phase of 'Waiting and Observing' (Irwin 2019a, p. 156, 173). The cases reflected this, noting the following practices: self-reflection / reflective practice (3), reflexive practice (1), reflective discussion (1), learning orientation (1), reflective diaries (1), reflective core team meetings (1), online survey (1), reflection and evaluation cards (1), critical reflection (1), which actors are here, which voices are not here? (1), participatory events to share learning (1), and a scorecard (1).
- **Multimedia tools and outputs** - diverse media play a role in communicating, visualising, embodying, and translating activities at all stages. Practices and tools mentioned included pre-work/info packets (2), Kumu (1), 3-D physical prototyping (1), online support tools or websites (4), online workshops or webinars (6), Miro (5), Hylo (1), imagery, photographs, and or illustrations (3), audiovisuals (2), video (3), reports (2), strategy outputs (2), and a process guide or package for future use (1).
- **Toolkits** - some cases referenced specific toolkits from which practices were drawn, including the Social Practice Theory Toolkit (1), the Transdisciplinary toolbox (1), and the Nesta Theory of Change Toolkit (1).

Figure 7 shows the system map of the agricultural production system developed for the Case Study (Field Guide, p. 14), which embeds (but does not overtly mention) the STEEP framework. This system map was drawn and iterated during semi-structured interviews using the concept of interacting cycles as described by farmers. Elements were added with each successive interview (Figure 40 shows the iteration from start to finish). During the Case Study interviews and workshops, the system map was essential in helping name the scope of the 'system in focus' and in describe the dynamics of the agricultural production system.

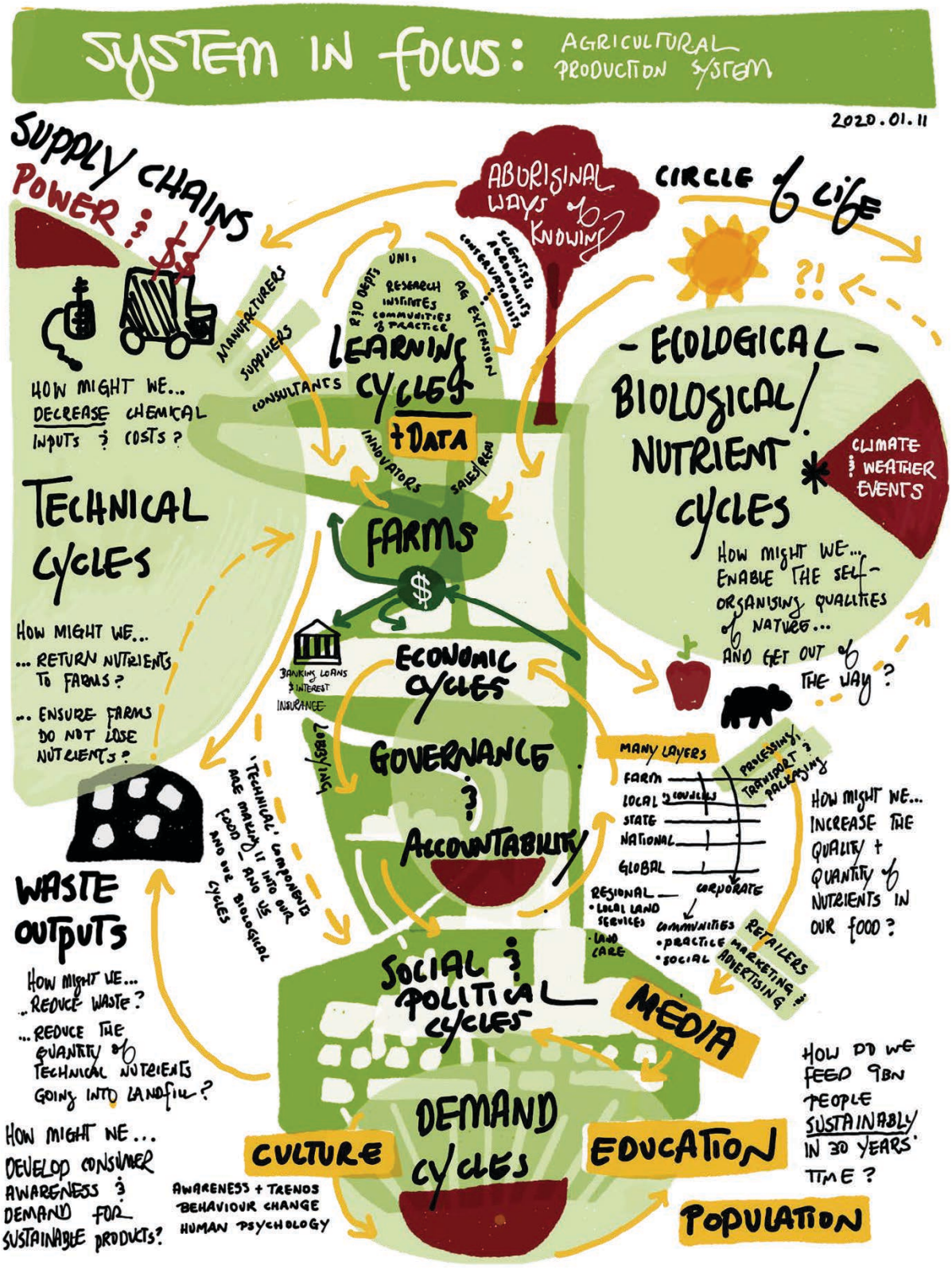


Figure 7. ‘System in Focus’ map from the case study: Agricultural production system

There are many types of systems maps, as described in Figure 8, and more than one type of system map may be needed for a project.

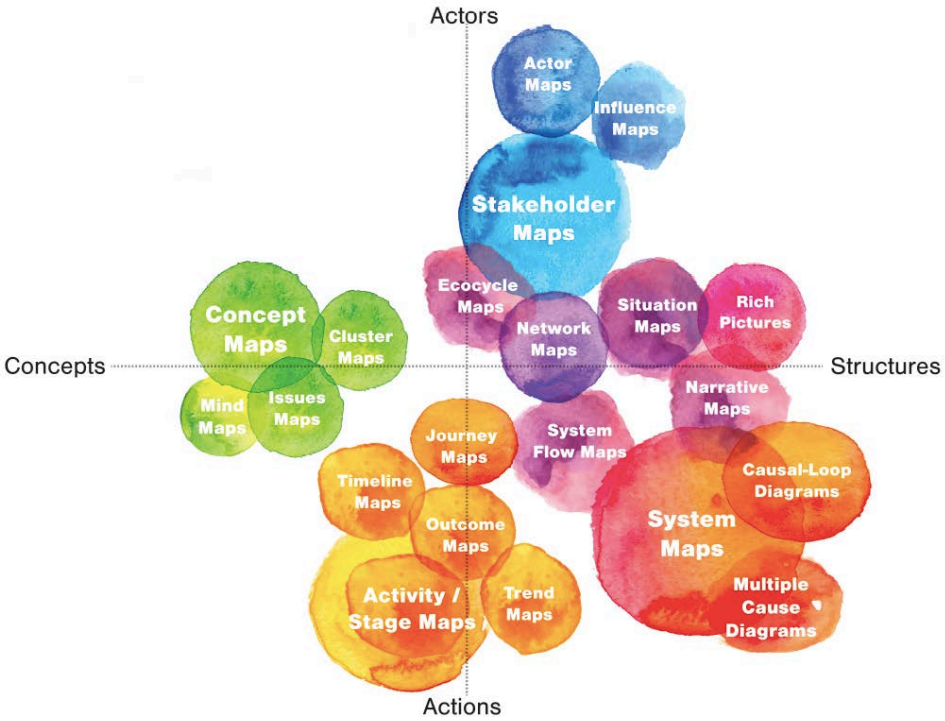


Figure 8. Many types of Systems Maps (Source: Ingrid Burkett)

Format analysis

A ‘format’ in the world of socially based design approaches is the unit of work, vehicle, or mechanism through which change occurs. It is a crucible for conceptualizing and catalyzing action, and for channeling action for impact. Critically, in practice, ‘format’ is often the ‘thing’ that gets funded when deliverables cannot be specified. Some cases utilize multiple formats, for instance a lab format can be run in an educational studio, and a platform format can involve a series of workshops. Formats named in the empirical cases include:

- **Workshop series** (10) - commissioned or in research, academic, and educational settings.
- **Projects and programs** - commissioned (6) – bounded units of work to produce a specified deliverable or outcome, often involving a contract for the work
- **Platform** (2) - a space for broad-scale participation - virtual and/or physical, temporary, or long-term. These examples were funded by government programs and grants.
- **Lab** (2) - an ‘open space’ for (ideally) longitudinal innovation and experimentation around a specific problem or opportunity area. Can be virtual or physical, can be in the context of design studios or teams. Labs took inspiration from long-term field experiments, lab

infrastructures for testing innovations, user co-creation, and real-life stakeholder and actor experimentation (Schuurman and Protic, 2018). The Lab format can help create space for real-life experimentation and open participation e.g., via 'nearby' stakeholders, building of relationships, and emergence, in ways that consulting work and/or project formats have not always been able to achieve. There are examples of innovation teams in public sector organizations being run as labs, such as Mindlab (Bason, 2022). The lab format is also sometimes associated with entrepreneurship and startup incubators (Schuurman and Protic, 2018). For a sampling of the discussion regarding labs for participatory design and democratizing innovation (Björgvinsson, Ehn and Hillgren, 2010), labs as compared to Lean Startups and the 'hype' surrounding both (Schuurman and Protic, 2018), labs as innovation platforms (Westerlund, Leminen and Habib, 2018), for social change (Hassan, 2014), in the agricultural sector (McPhee et al., 2021), moving from innovation labs to civic design (Bason, 2022), in policy (Blomkamp and Lewis, 2023), and for sustainability transitions, including 'studies on transition experiments, arenas and laboratories' (McCrory et al., 2022).

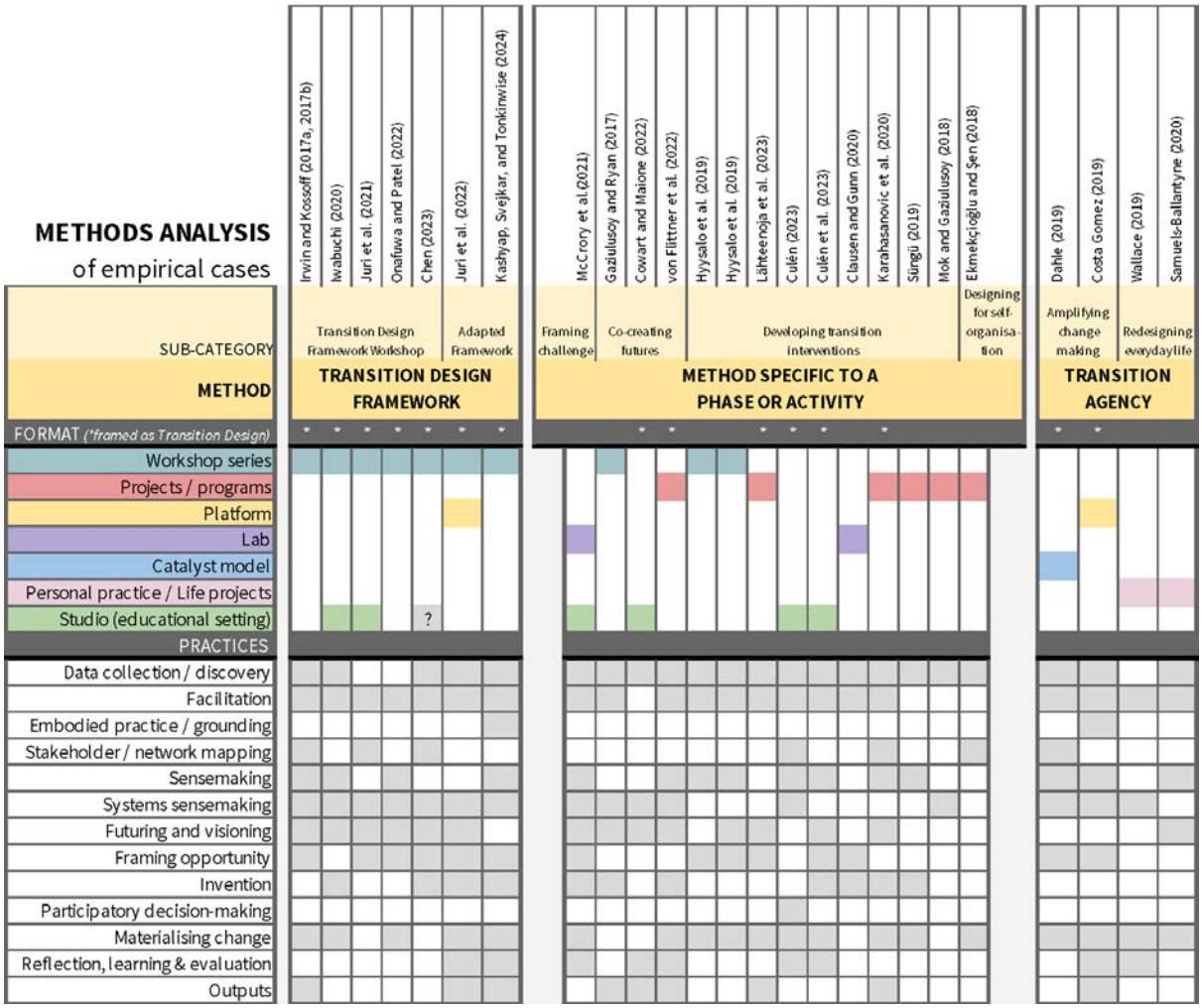
- **Catalyst model** (1) - systems change incubation by investing in and amplifying the work of changemakers, including but not limited to using design skills, at critical opportunity areas in a theory of change. Funded by diverse mechanisms, including philanthropy, grants, and consulting. The Case Study in this research followed a catalyst model.
- **Personal practice / life projects** and related projects – may be self-funded or may include sub-projects that attract funding (2)
- **Studio** (6) - projects and experiments in a design education setting, may or may not be funded e.g., through grants for specific research

Projects and workshops are a mainstay of many participatory processes and social approaches to design, but they are not the end-all-be-all of design formats. There need for experimentation in format, particularly because Transition Design efforts should extend beyond the boundaries of projects and workshops and unfold over longer-term horizons. For 'a short history of workshops', see Culén et al. (2023). For discussion of some of the limitations of workshops see Davis et al. (2021) and Davis et al. (2022), and for notes on the problematic paradigm of projects for systems-shifting work see Drew, Robinson, and Winhall (2021, pp. 22, 44, 47, 56).

More formats exist than are represented in this sampling, for instance community-led place-based collective action (Kania and Kramer, 2011; Cabaj and Weaver, 2016; CCCH, 2011; CCCH, 2018; and Collective Impact Forum, 2016), mission-led innovation (Mazzucato and Penna, 2015; Mazzucato, 2018; Mazzucato, 2023; Bason, 2022), and challenge-led innovation (Burkett, 2023). I anticipate that approaches such as these may be reflected in Transition Design empirical cases beyond this sampling, or at some point in the future.

The relationship between methods, formats, and practices analyzed across this sampling of empirical cases is visualized in Table 2.

Table 2. Analysis of methods, formats, and practices across the empirical cases



Methods - three clusters

To explain the steps taken to analyze methods across empirical examples, I will step back a moment to discuss process. As mentioned, in Chapter 5 I discuss an analysis of process as part of developing my Case Study approach. That analysis yielded a set of phases that differ from but, as I will argue, add further detail to the **Transition Design approach** (Irwin, 2019). The phases, or activities, as I have labelled them are Initiating, Situating, Envisioning, Responding, Harvesting, and (Re)Framing. Together these constitute what I will occasionally refer to as a **Transition Design cycle**, with the caveats that not all these activities will be appropriate for a specific piece of work, that phases may be rearranged and/or repeated as needed, and that it is rare (currently) to make it through an entire cycle in a single project.

Returning to the matter of analyzing empirical examples, a process lens is helpful. By that I mean analyzing cases by phases/activities addressed by the work (not the process for delivering the work). One I had coded the practices in the empirical examples, I clustered the case studies by affinity or likeness of approach (patterns of practices), then used the lens of process to see what that would reveal. These two steps resulted in three clusters of methods (and eight sub-clusters) among the empirical examples: **1) a Transition Design framework method** as a sequential workshop series leading to ecologies of interventions, **2) methods specific to a phase or activity** in a Transition Design cycle, and **3) building agency and capacity** for transition through design.

This clustering of methods gives an indicative view of what Transition Design can look like in practice. An exhaustive analysis of cases, or an analysis through different lenses, may reveal different clustering. Furthermore, because designing for transitions is still a relatively young practice, I expect that methods and methodologies will change with more extensive application.

Cluster 1) Cases using a Transition Design framework method

The 'Transition Design framework' method (or 'Transition Design framework workshop' as described by Cowart and Maione, 2022, p. 38), is the approach set out by the Transition Design framers referencing the Ojai case study as an exemplar (Irwin and Kossoff, 2017a and 2017b; Irwin, 2018). The method is constituted as a sequential workshop series leading to ecologies of interventions. The cases that followed a Transition design framework method broadly took three steps 1) mapping the wicked problem and stakeholder relations, 2) envisioning the future, and 3) backcasting to create transition pathways including identifying interventions (Irwin and Kossoff (2017a, pp. 8-17). The cases in this cluster used many of the same or similar tools and methods as named in the Ojai case study, including the STEEP framework, MLP, the Winterhouse Institute's Social Pathways Matrix, a variety of approaches to visioning and backcasting—including Snapshots from the Future (Chen, 2023), and Narratives of the 'not yet seen' (Onafuwa and Patel, 2022), projects informed by the future, and linking and amplifying (new) projects.

Some cases sought to follow the Ojai approach closely with only minor adaptations whilst others the method to a greater extent to suit their context and objectives. For instance, one case combined the Transition Design framework method with a frame innovation approach (Kashyap, Svejkar and Tonkinwise, 2022), resulting in a broader mix of practices but still following the overall method. As a result, I distinguish two clusters related to the Transition design framework method:

- **Transition design approach or Transition design framework workshop** (5) - Ojai and cases that follow the Ojai approach closely (Irwin and Kossoff, 2017a and 2017b; Iwabuchi, 2020; Juri et al., 2021; Onafuwa, 2022; and Chen, 2023).
- **Transition design framework workshop combined with other methods** (2) - These two case studies identify the Transition Design approach as a primary method but describe a need to combine it with other methods to suit context and culture, including the need to work with Indigenous peoples and worldviews (Juri et al. 2022; Kashyap, Svejkar and Tonkinwise, 2022).

Cluster 2) Cases featuring methods specific to a phase or activity

For this cluster, the respective authors of the empirical cases associated their cases with Transition Design, and this analysis asks, *how* are these cases examples of 'Transition Design'? Using the process frame helps to reveal that these cases address specific phases or activities within a Transition Design cycle, for example:

- **Challenge framing** (1) - This example from an educational setting focuses on *framing* transdisciplinary challenges in transition processes (McCrory et al., 2021).
- **Futures co-creation** (3) - This cluster draws from a broader futuring and visioning toolbox. These case studies describe using methods like experiential futures, design fictions, and a gallery walk (Cowart and Maione, 2022), glimpses of the future (Gaziulusoy and Ryan, 2017), and stories of everyday life, foresight analysis, scenarios, and gamification (von Flittner et al., 2022).
- **Developing transition interventions** through participatory, co-design, and transdisciplinary approaches (9) - this is a big bucket that encompasses a range of approaches aimed at bringing people together to co-create specific interventions or responses to enable transitions. Some are aimed at structural enablers like energy transition pathways (Hyysalo et al., 2019a), transition governance (Hyysalo et al., 2019b), a national strategy (Lähteenoja et al., 2023), and participatory democracy (Culén, 2023). These sometimes produce bespoke methods and tool sets, as in the case of the plurishop (Culén, 2023; Culén et al., 2023) and the mid-range pathway creation toolset (Hyysalo et al., 2019a). Some have a participatory design innovation lens (Clausen and Gunn, 2020; Karahasanovic et al., 2020; and

Süngü, 2019) whereas others are categorized as strategic design innovation (Mok and Gaziulusoy, 2018).

- **Designing for self-organization** (1) - This case seeks to understand how solutions are created by 'creative communities' through self-organizing, and to embed that insight and way of constituting solutions into design and policy approaches (Ekmekçioğlu and Şen, 2018). I believe there is an affinity with the 'creative communities' concept here and the idea of autonomous design in Escobar (2017). To set principles and guidance for enabling 'self-design' is a meta-level intervention for shaping the design of process itself.

Cluster 3) Cases formed around methods that build agency and capacity for transition

Whether focused on incubating systems change, connecting and amplifying community efforts, or endeavoring to 'redesign everyday life' through personal practice and related projects, the cases in this cluster sought to build agency for transitions. The approach involved cultivating ecologies of interventions to materialize change through emergence. Cases may have featured but were not driven by workshops. The clusters included:

- **Amplifying and connecting change-making work** (2) - These two case studies view existing change makers and change-making activity through the lens of Transition Design and look for ways to amplify positive deviance (seeds of the future here today and/or practices that succeed whilst differing from the norm) and link change-making activities for greater impact. One example, noted in formats, was described as a systems-change incubator to enact a Theory of Change by amplifying the work of leading influencers and change-makers (Dahle, 2019); the other example used a symposium to convene an audience of change-makers, introduce Transition Design, and activate a network (Costa Gomez, 2019).
- **Redesign of everyday life through personal practice** (2) - In these two cases, the focal point of transformation was personal life and the many projects that arise from seeking to redesign everyday life. The primary methodology for these cases was not Transition Design, but other methodologies like redirective practice (Wallace, 2019) or conviviality and ontological design (Samuels-Ballantyne, 2020).

As mentioned earlier, my transition project followed the approach set out by Dahle (2019), which falls into the cluster of methods that build transition agency and capacity. When I framed and scoped my approach to a Transition Design project in 2019, this analysis was not available to me.

In Chapter 5 I set out a format and approach for my Transition Design project based on methods I had encountered at that point in time.

Survey of methodological origins

The Transition Design Provocation names as sources a collection of disciplines, movements, and theories, including: “Socio-Technical Regime Theory, Post-Normal Science, Social Practice Theory, Human Scale Development, Social Ecology, Social Psychology, and Critique of Everyday Life, amongst others” and “of particular relevance…Living Systems/Complexity theory” (Irwin, Kossoff and Tonkinwise, 2015a, p. 9). Although the empirical cases are either explicitly defined as Transition Design or identify as affiliated with Transition Design, the case do not exclusively draw upon the methodological influences named by Irwin, Kossoff and Tonkinwise (2015a). There are themes, but the specific mix of methodological origins—including design origins—differs by case.

In this section (and in further detail in Appendix B), I identify five broad categories of methodological origins used to frame the empirical cases: participation, transitions for systems, futuring, design innovation, and ontological openness (from Emmanouil, 2017). For instance, in terms of how diverse people are involved in co-contributing to futures and interventions (participation), methodologies differ e.g., the approach selected may be participatory, multidisciplinary, transdisciplinary, co-design, co-creation, or knowledge co-production, etc. For sensemaking and conceptualizing transitions for systems, methodological origins include studies in transitions, transformations, adaptation and resilience, Systems Thinking, social impact, community development, and Living Systems/Complexity Theory. For visioning and futures, the empirical cases drew from methods like foresight, futures, forecasting, backcasting, critical design, speculative futures, design fiction, experiential futures, and causal layered analysis. Different approaches to design-based innovation were named, including strategic design innovation, human centered-design, user-centered design, service design, social innovation, and frame creation. To facilitate ‘ontological openness’, including by adapting specific practices and methods into context and embedding a self-determined and agency-building approach, empirical examples referenced origins like ontological design, redirective practice, pluriversal design, reflective practice, and decolonising design as well as learning from - without appropriating - Indigenous worldviews and ways of being.

For brief descriptions with references and a sampling of further reading for each of these categories, refer to Appendix B. The content in Appendix B is neither definitive nor comprehensive,

but rather seeks to provide context (a survey) for some of the methodological origins associated with the practices people have used in undertaking Transition Design.

From the survey across this broad and rich—yet highly specialized—palette of methods and methodologies that help frame designing for transitions, practitioners have found the need to adapt a Transition Design approach to context and desired outcomes (for instance as described in Juri et al., 2021). I speculate that practitioners seeking to undertake Transition Design are also borrowing from practices they already know to form a practice they feel is appropriate, which is important to how I form my practice for the Case Study in this research as well.

The practices applied and adapted in novel ways for Transition Design through the empirical cases originate from and belong to a nexus of methodologies, methods, and practices, each with their own historical and theoretical origins and each evolving in new ways. I believe that, through practical application (praxis), these practices, methods and methodological origins inform and are informed by the others in turn. The various methods and methodologies, rooted in their own wide range of historical, theoretical, philosophical, and axiological lineages, will be touched on in a few instances to illustrate how these lineages play out in application, but a thorough investigation of origins is beyond the scope of this work. Whereas this research starts from ‘where we are’ (or, where I was in 2017) and uses methods and tools at hand, I expect that the methods used today, as we keep working to apply them to enact transitions, will be transformed greatly through praxis.

2.3 Recap of the empirical case analysis

The purpose of the analysis of empirical examples at the start is to help orient and ground the research as well as the reader in what ‘practice’ can refer to for Transition Design.

By scanning publications linked to Irwin (2015) and Irwin (2018), I identified 24 empirical examples, of which 15 explicitly identified as Transition Design. The examples come from around the world (5 continents), and represent diverse transition contexts, including agri-food systems, fishing, water, policy and governance, socio-technical systems, built environment, energy, circular economy, low carbon, social systems, and education.

Practices

The empirical examples each contained an assortment of practices assembled for the purpose of the challenge at hand and relevant to context. I categorised the practices as pertaining to data

collection (or discovery), facilitation methods, embodied practice and grounding activities, stakeholder and network mapping, sensemaking, systems sensemaking and systems mapping, futuring and visioning, framing opportunity within a Theory of Change, invention, co-creation, and generative activities, card sets, participatory decision-making, materializing new ideas and change, reflection, learning, and evaluation practices, multimedia tools and outputs, and toolkits.

Formats

Cases were undertaken through seven different formats, or vehicles for collaborative working, including through workshop series, projects and programs, platforms, labs, a catalyst model, personal practice or life projects, and studio formats.

Methods

Clustering empirical examples by likeness of approach and then organising them across the Transition Design cycle revealed three clusters of methods: the Transition Design framework approach; methods specific to a phase or activity; and methods seeking to build transition agency and capacity. Within the cases that took a Transition Design framework approach, some followed the Framework format closely whilst others adapted it in combination with other methods. For the cases aimed at transitions but specific to a phase or activity, sub-clusters included challenge framing, futures co-creation, developing transition interventions, and designing processes for self-organisation. The cases focused on building transition agency and capacity either worked to amplify and connect the change making work of others or explored the redesign of everyday life through practice.

Methodological origins

The methodological origins of the practices named in the empirical examples broadly fall into five categories, which are participation, transitions for systems, visioning and futures, design innovation, and ontological openness.

This survey of a set of empirical examples provides a quick tour of what is meant in discussing Transition Design *practice*, an indicative sampling of the diversity as well as patterns across cases, a level of familiarization with the terms, techniques, and methods used, and highlights key methodological origins.

As touched upon earlier and as will be described for the Case Study, my project took a catalyst format and followed the method of building transition agency and capability. As I will discuss, the

Case Study includes practices for data collection, facilitation, sensemaking including systems sensemaking and mapping, framing opportunity within a Theory of Change, invention, co-creation, and generative activities, materializing change, reflection, learning, and evaluation, use of many different visual tools, outputs, and reports, calls out the opportunity for visioning, and stumbles across a participatory decision-making tool in agriculture that could be of use in design for transitions. All the methodological origins named here came into play through the Case Study. Holding a definition of design for transitions as *co-creatively materializing regenerative futures and catalyzing systems change through design experimentation, (re)invention, and intervention,* the project sought to amplify the work of existing changemakers but also to conduct live experiments that engaged participants and stakeholders in exploring and testing *how* to enable transition.

2.4 How this research builds on existing practice

The 'emerging Transition Design approach' (Irwin 2018 and 2019a) sets out a conceptual model for understanding Transition Design via the Transition Design framework, three phases, and examples of activities. The first tangible practice example of Transition Design was evidenced through the Ojai case study (Irwin and Kossoff, 2017a; Irwin and Kossoff, 2017b) and elaborated further through papers like 'The Emerging Transition Design Approach' (Irwin, 2019). The analysis of empirical examples shows that just four of the 13 empirical examples explicitly identified as Transition Design take the Ojai/Framework method. Of the 25 total cases, 19 offer examples of designers adapting methods to be used for Transition Design.

I argue that Transition Design materials can go further to set out more methodological detail without being prescriptive. Further guidance can be provided regarding how to assemble one's own practice, how to adapt practice into context, and how to ensure practice embodies a transformative worldview and way of working. In reflecting on the empirical analysis, I identify five ways to build on existing practice: identifying Elements of Practice, distinguishing among Theories of Change, Transition Theory, and Theory of Action, defining key process activities, embedding mindset and postures through protocols, and naming three regenerative principles that can be used to embed a transformative approach in agriculture and design alike.

The gap between approach and practice—Elements of practice

As we have seen from the analysis of empirical examples, practice is assembled from several *elements*, such as practices, formats, and methods. These *elements* help us understand, in practical terms, *how* to enact the Transition Design Framework.

Through professional work, I have become familiar with the use of practice frameworks and guides. My first experiences with practice frameworks came through playbooks, guidebooks, and toolkits offered for design and facilitation. As noted in Chapter 5, one of the phenomena that helped design thinking grow and spread was the introduction of practice guides. By 2009 IDEO put out a toolkit and the Service Design Network had its first version of a searchable toolkit available online. The Stanford dSchool put out a process guide in 2012. Since then, numerous books and websites have been published for practices like service design, social innovation, etc. that provide tools, processes, and case studies. I have also (co-)developed several design process playbooks to support teams in their ongoing efforts to build design capability.

Working in social innovation, I was exposed to practice frameworks, which go farther into theory as well as practice than toolkits and playbooks. The Social Care Institute for Excellence set out a definition of a practice framework in their introduction of the Department of Health and Social Care's 'Strengths based approach: Practice Framework and Practice Handbook' (DHSC with SCIE, 2019). In the document, the authors describe how practice frameworks integrate research, theories, principles, and experiential knowledge into a "compact format" that maps out "what we do and why", sets out the reasons behind practice, brings together tools for use in practice, and "provide schematic templates for systematically improving practice" (Department for Health and Social Care, 2019, p. 3).

Practice frameworks guide practitioners by translating underpinning theories, concepts, and ideas into concrete specifics about what it takes for a practitioner to achieve certain outcomes. They set out a logic and mental model for action, and then provide tools and concrete practices. They give practitioners a place to start, activities to try, and guidelines for effective practice.

In some disciplines, it is expected that 'best practice' is adhered to strictly and in some cases to the letter of the law. In other disciplines, practice frameworks are expected to be held more loosely, providing a palette or a toolkit from which the practitioner may draw or adapt—or even reinvent—as they see fit in service of the context and the outcomes they seek. Transition Design is more the latter than the former. Practice frameworks enable the evaluation of practice, which I anticipate will be called for during some Transition Design initiatives. For practices like Transition Design, one challenge of practice frameworks is to facilitate agency in assembling and reflecting

on their own practice – so that they create their own 'palette' – without underspecifying what they will need in undertaking practice and without setting out an overwhelming and unnavigable array of choices.

Over the course of this thesis, and in the resulting Field Guide, I will identify elements of practice for my Case Study and then synthesize the elements into an 'Elements of Practice' framework. By offering the 'Elements of Practice' framework and the accompanying explanations, as a starting point, I seek to contribute to the tools needed for assembling a practice.

Distinguishing among Theory of Change, Theory of Action, and Transition Theory

Theories of Change is one of the four key areas of practice set out in the Transition Design Framework (Irwin, Kossoff, and Tonkinwise, 2015a). There are multiple ways to interpret the term 'Theories of Change' and I argue there is a need to unpick a few concepts. For this research I distinguish among three terms—Theory of Change, Theory of Action, and Transition Theory:

- A Theory of Change describes how specific activities are expected to lead to desired outcomes within a given context
- How people work together (methodology) to impact a Theory of Change is a Theory of Action
- Transition Theory refers to the philosophical and theoretical understanding of how to influence systemic change, including conceptual frameworks and mid-range theories. Transition Theory underpins Theory of Change and Theory of Action.

Theory of Change

A Theory of Change is comprised of the many elements we believe must come together to effect change, including those beyond our influence; it is a logic for change. A mapped Theory of Change should link the relationships between necessary pre-conditions, activities, outcomes, and goals—and enable experimentation to identify strategies which help to meet those goals. A linear or instrumental Theory of Change is inappropriate for transitions (Tonkinwise, 2023, p. 283). In the context of transitions, Theories of Change should be developed to provision for uncertainty whist reflecting the need to build conditions for change, intervene in many levels and aspects of the system (through ecologies of interventions), and facilitate diverse interconnections, synergies, and emergence. Theory of Change was mentioned by four empirical cases in the sampling.

Theory of Action

A Theory of Action is the 'means to the end'. It encapsulates methodology and describes how we will go about doing our part to impact the Theory of Change including process, methods, practice, and role, etc. Multiple Theories of Action can deliver on a Theory of Change e.g., "It is possible to operationalise the same Theory of Change in different ways" (George, n.d.). Transition Design, and the way in which a designer conceptualizes their practice and approach to a piece of work, is a Theory of Action.

The Theory of Change and Theory of Action are inseparable, parts to a whole practice.

Transition Theory

Irwin, Kossoff, and Tonkinwise (2015a) define Theory of Change as including philosophical and scientific conceptualizations of change, but I find it is confusing to use the same term for theoretic concepts as we use for logic models relative to a specific project. I acknowledge that, because Theories of Change are nested, technically speaking Transition Theory represents the highest order Theory of Change that outlines our understanding of how to intentionally facilitate and accelerate transitions. However, to be clear about which concept I am referencing, in this thesis I will refer to philosophical, scientific, theoretical, and conceptual frameworks as Transition Theory.

How these concepts help construct practice

For me distinguishing among these terms is useful for two reasons. First, I find it is helpful to have a reading of theories of how change and transitions come about when designing a project approach. Secondly, being able to reflect on the logic of a Theory of Change and Theory of Action helps build the capacity for Schön's 'reflective practice'. Although attribution is difficult to assign in systems change, making distinctions between Theory of Change and Theory of Action enables assessment of whether progress (or lack thereof) may be a factor of what we're building, how we're approaching it, or both. I will discuss how Transition Theory and Theory of Change inform the process of constructing my practice and Case Study approach in Chapter 4, and I will assemble my own Theory of Action in Chapter 5.

Process as meta-activities

As mentioned earlier in this chapter, in Chapter 5 I undertake an analysis of process to establish a core set of activities (meta-activities) for Transition Design, extending the 'emerging Transition

Design approach' (Irwin, 2018). From this analysis I identify six key activities: Initiating, Situating, Envisioning, Responding, Harvesting, and (Re)Framing. These activities tend to be utilised in sequence-y patterns over horizons of time, but not all are used in every empirical example, sometimes the order may be rearranged, and activities may be repeated as needed. In Chapter 7, reflecting on this analysis, how process played out in the Case Study, and the nature of transitions (Transition Theory), what surprised me is that I came to an understanding of design process as an Adaptive Cycle (from Gunderson and Holling, 2002). Design process as an Adaptive Cycle connects design and Complexity Theory and, to me, provides a visual that expresses the rhythm and experience of the design process.

Furthermore, my hope in using tools like the Adaptive Cycle to help communicate and build understanding of the design process, particularly with respect to transitions, is to help equip designers to navigate transition initiatives and point to phase-appropriate interventions.

Mindset and postures for transformation—through protocols

'Mindset and postures' are one of the four areas of practice in the Transition Design Framework. *How* we work matters – *how* we work is as vital to creating change as the results we produce. The worldview of the future we seek can be materialized by (attempting) to embody that worldview in practices today. Because this research focuses on practice, throughout this thesis I pay specific attention to how elements of practice can assist designers in fitting practice to context and embodying transformative approaches through mindset and posture. Materializing the future is as much about (attempting) to embody new worldviews to see what emerges as it is about (attempting) to develop new socio-technical innovations and systems.

As part of this endeavor, I introduce protocols for collaboration (Chapter 6). This is inspired in part by the work of Yunkaporta (2019) and my own experience working with groups. Group practices sometimes include working with principles, establishing group commitments, and establishing shared values—which are put into practice through behaviors. The purpose of protocols is to help translate mindsets and postures into behaviors that are actionable in practice.

Re-interpreting existing practices through changed mindsets and postures is an ongoing task for Transition Design because many of the methods originate from analytic traditions associated with 'western' or 'global north' ways of working, existing socio-technical systems, and anthropologically oriented human-nature interactions, including the STEEP model, the MLP,

futuring methods like backcasting and scenarios. Indeed, design itself is intrinsically bound with the very paradigms that Transition Design aims to unwind. This is part of my positionality – as a designer my practice base originates almost entirely from 'western' sources and is beholden to the delivery of results that fit within consumer-capitalist and social service organizations, cultures, and transactional modes of production. Protocols assist with this ongoing challenge of re-fitting practices for a new worldview and helping create the groundwork for ontological openness.

Practitioners working to apply Transition Design are already encountering this challenge. As examples, Juri et al. (2021), Juri et al. (2022), and Kashyap, Svejkar and Tonkinwise (2024) grapple with these questions in their work, and ultimately arrive at blending a Transition Design Framework approach with Resilience Thinking, sustainability transitions theory, sustainability transformations, and policy design in the former and frame creation, ontological design, and participatory co-design in the latter.

Towards regenerative principles—the significance of a (re)generative approach

Although the empirical examples analysed here differ in scope, context, and approach, they all sought to take a generative approach. Generative approaches are at the heart of what affords design its characteristic propositional capacity for materializing change. Importantly for the form of design that underpins Transition Design, propositions are co-generated, or co-created.

In this research, the term 'generative' has significance at five different levels, which are: 1) the essence of design; 2) a fundamental ethos embedded in the methodology of this research; 3) a signal of the potential of visions and designed solutions; 4) the means-and-ends link between generative approaches and regenerative agricultural results, and 5) therefore in the means-and-ends link between (re)generative approaches and sustainability transitions. I will outline each of these layers of significance here, leading with further definition of the term 'generative'.

What does *generative* mean? From Merriam-Webster (n.d.), *generative* means "having the power or function of generating, originating, producing, or reproducing" and *generating* means "to bring into existence: such as procreate, beget, or to originate by a vital, chemical, or physical process, produce." The term *generative*, then, is associated with making new (originating, producing, creating) and making anew (regenerating, reproducing).

In the first layer of significance to this research, the concept of generativity is embedded in the very definition of design. Earlier in this chapter, I defined the form of design needed for sustainability transitions as *'co-creatively materializing regenerative futures and catalyzing systems change through design experimentation, (re)invention, and intervention'*. In Transition Design, the propositional form-giving required for 'materializing'—creating, inventing, originating, and producing etc.—is a generative (creation) activity in service of regenerative outcomes.

In the second layer of significance to this research, the concept of *generative* communicates an ethos, connoting an approach to research and design that builds agency among participants to develop their own solutions and act as a matter of principle. Design hasn't always been used for agency-building, and the incorporation of generative methods into design approaches is in part the result of mixing design and social research disciplines. The term *generative* gained traction in design in the 2000s as well as with Action Research, although it did not originate with these disciplines. Irwin, Tonkinwise and Kossoff (2015b), citing Jones, define the approach to design that emerged in the 2000s as "generative, empathetic, and transdisciplinary" in response to complexity, and in contrast to earlier eras of design like the 'Rational 1960s' (characterized by a movement from craft to standardized methods), the 'Pragmatic 1970s' (characterized by Instrumentality, Methods Customized to Context), and the 'Phenomenological 1980s' (characterized by Design research and Stakeholder Methods, Design cognition) (p. 4).

Sanders (2000) defines generative *tools* as a set of visual components (as opposed to verbal, although they can also be tactile, tangible, and experiential) specifically designed for people to use to assemble into 'artefacts' that represent their own responses to design or research questions and, for Sanders, generative tools represent one way the future can be 'made from the dreams of everyday people' (pp. 3, 6). Generative approaches, often enacted through generative tools (Irwin, Tonkinwise and Kossoff, 2015b), make practices like co-design possible, where people come together with designers to co-create their own responses.

In the third layer of significance to this research, discussed in Chapter 5, designers look for generative qualities as a signal of potential e.g., when a designed response is generative, the response itself has a self-perpetuating quality. The designed response has its own energy, seems to want to keep growing, existing, and tends to lend to more ideas—to keep generating. In the early stages of design, this is sometimes one of the only clues we have that a designed response has promise. I argue that in trying to influence change in complex contexts, being able to sense generative qualities may help us identify promising responses and pathways forward.

In the fourth layer of significance to this research, the word generative is embedded in the term *regenerative*, as in Regenerative Agriculture. The significance of the quality of regeneration in the definition of the term 'Regenerative Agriculture' is discussed at the end of Chapter 4 and throughout the Case Study (Chapter 6). The way that the concept of regeneration is defined in Regenerative Agriculture is based on the principles of Living Systems (discussed in Chapters 6 and 7), which is significant for Transition Design; to achieve regenerative ends in agriculture, farmers and land managers must use regenerative means. *Generation* and *regeneration* are essential life-giving properties inherent in nature—and this gives clues as to why in design we look for generative qualities. As will be discussed, the extent to which *regeneration* is addressed holistically in Regenerative Agriculture and the agricultural paradigm more broadly will determine the extent to which agriculture supports global sustainability transitions.

In the fifth layer of significance to this research, the same means-and-ends congruence needed in Regenerative Agriculture is important in design: generative approaches lend to generative solutions—responses that help regenerate and give new life. In working on sustainability transitions, the generative quality is vitally important for local and global regeneration. I will argue that there is a fractal, means-and-ends congruency, whole-in-part relationship between generative approaches and regenerative outcomes for sustainability transitions.

Reflecting on the definition of Regenerative Agriculture and comparing that with how the concept of 'generativity' is embedded in design practice, for example through generative approaches and the practice of looking for generative qualities to evaluate the potential of emerging ideas, in Chapter 7 I draw out three principles of regeneration.

The identification of principles of regeneration brings Living Systems and Complexity Theory full circle through the research. In this chapter I have flagged that Living Systems and Complexity Theory underpin the philosophical and methodological origins of Transition Design. In Chapter 4, I highlight Living Systems and Complexity Theory in Transition Theory, and outline criteria for my Theory of Change based on these. In Chapter 5, I establish how Irwin's (2011) argument for the relevance of Living Systems principles to design informs my Case Study approach. Although previous incarnations of agriculture, including those practiced by First Nations peoples, worked with Living Systems principles (though this term was developed later), conventional (industrial) agriculture abandons these principles. Through the Case Study project (Chapter 6), I come to an understanding that Regenerative Agriculture, at its most holistic, embeds principles of Living Systems, which—if implemented to its fullest—would be profoundly transformative as a regime

change from conventional agriculture. Reflecting on the Case Study and the definition of ‘regenerative’ in Regenerative Agriculture, by drawing out these three principles of regeneration I can express how Living Systems theory is being used (anew) in agriculture.

In Chapter 8, coming back to the principles of regeneration, I observe that they could be applied equally to both agriculture and Transition Design practice—providing a means to keep embedding Living Systems and Complexity Theory into practice, to embody a new relationship between people and nature, and to help cultivate the conditions for ontological openness among participants and audiences. The symmetry between the regenerative principles (working *with* nature, holistic, and congruence) and my design criteria for promising ways forward (generativity, elegance, and congruence, from Chapter 5) is striking, and I feel promising to help inform how we may **design regenerative transitions**. I offer these principles as part of how practitioners seeking to construct a practice that embeds the mindsets and postures of sustainable futures can work in relational, regenerative ways.

Chapter 3
Research Methods

About this chapter

This chapter outlines the overall research methodology. The research is framed as 1) practice-based design research and 2) Action Research. A Case Study approach is then embedded within the overall methodology. This chapter also addresses concepts of value and validity, researcher positionality, language choices, beneficiaries, research process, and milestones.

3.1 Research approach

Research methodology – two lenses

Chapter 2 includes a survey of methodological origins for Transition Design practices, but the approach to this research must also be situated within relevant methodological lineages. In this section, I frame the overarching approach to this research as practice-based design research, but I also frame research into Transition Design as a form of Action Research.

Lens 1) This research as Practice-Based Design Research

The overarching methodology for this work is practice-based design research. The goal is to research Transition Design practice *through* practice. To research Transition Design *practice*, a Transition Design *project* is required, hence the Regenerative Agriculture transition project. Figure 9 articulates the two processes that are simultaneously being tracked in this research: 1) the overarching PhD process which is research *into* practice and 2) the project which enables research *through* design practice. This visualization of practice-based design research is informed by Vaughan (2017, p. 4-12), Tonkinwise (2017, p. 30-32), Goldkuhl (2011), and Frayling (1993) and includes elements of both researcher introspection and guided introspection with research participants (Xue and Desmet, 2019).

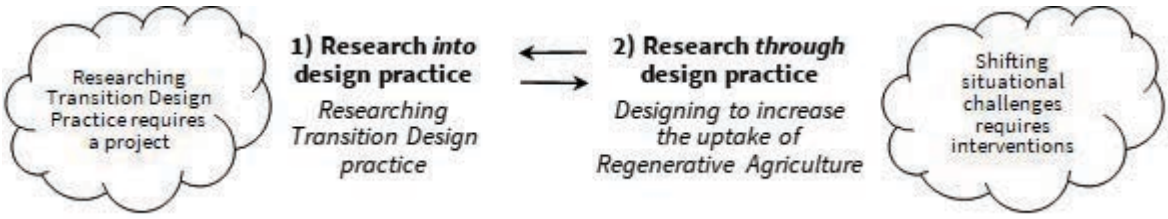


Figure 9. Practice-based design research

Lens 2) Researching Transition Design practice as Action Research

What type of research is research into Transition Design practice? Research aims at knowledge production. When compared with the action-oriented stance of design, research is categorized as description-oriented and more passive, but there is a type of research that takes an active stance and simultaneously engages in knowledge production and changemaking: Action Research.

Action Research is a form of researching by doing together. Gelling and Munn-Giddings (2011) provide a definition of Action Research: "'The study of a social situation carried out by those involved in that situation to improve both their practice and the quality of their understanding'" (p. 101). They clarify that, as the term suggests, Action Research is action not description orientated, thus distinguishing Action Research from purely quantitative or qualitative approaches that seek to explore and describe a situation (p. 101). Action Research (AR) is broadly inclusive of participatory research (PR), Participatory Action Research (PAR), community-based participatory research (CBPR), community-based research, and critical design ethnography.

In Action Research, and so in Transition Design, the researcher/designer directly engages with stakeholders as collaborator, another change agent, to work on ethical, moral, and political questions of the common good through democratic participation in action and self-determination for social change, contributing to the capacity of others to enact transformation (Brydon-Miller, 2009). Action Research is a mutual approach that foregrounds local, contextualized knowledge — walking side-by-side, working shoulder-to-shoulder, and co-identifying challenges, dynamics at play, opportunities, and ways forward (Blake, 2007). There is an explicit goal of enabling local/participant agency, building capacity, being led by stakeholders, 'community', and participants, and sharing "the responsibility for practical action…with participants" (Löfman, Pelkonen and Pietilä, 2004, p. 333). The underpinning philosophy is one of "doing research with and for people rather than on people" (Löfman, Pelkonen and Pietilä, 2004, p. 333). Furthermore, the goal of Transition Design is the same as Action Research: Design to result in shifts in the research/action context.

The participatory element framed in Participatory Action Research shares the same methodological origins as the participatory practices named in the empirical analysis in Chapter 2. In Participatory Action Research as intended in Transition Design, processes involve mutual and collaborative reflective practices and facilitating inquiry, problem setting, design, and experimentation, as described by Schön (1983). Design and Action Research can each benefit the other e.g., by legitimizing design through the requirements of research to be visible, transparent, socially responsible, and inclusive whilst ensuring action has impact (Swann 2002). Empirical examples of Participatory Action Research with communities and Action Research with agriculture, land management, and the environment that could be a source of further insights for Transition Design practice, but that is beyond the scope of this research. For now, seeking relevant sociological foundations for this research, I argue that Transition Design can be conducted as a form of Action Research e.g., together with the other methods named in Chapter 2. During the project the Action Research framing proved quite helpful because, whereas farmers and other participants had not heard of Transition Design, Action Research was a familiar term, and some had taken part in Action Research processes before.

Project as a 'case' for reflective practice

Researching Transition Design through practice requires a methodology that enables me, the *designer-practitioner-researcher,* to seek feedback and reflect on *doing* the practice—in a way that is practical and productive (Vaughan, 2017, p. 9; Frayling, 1993). The case study method provides a framework for researching practice through a project by conducting analysis of the project itself through reflection along the way as well as reflection of the summative process. Reflective practice (per Tonkinwise, 2005) as 'authentic critical praxis of reflection', (ideally) paves the way for researcher *reflexivity*, understood here in the political sense as reflective practice that takes the researcher into the territory of "becoming aware of the power relations structuring their actions" (p. 7), where deliberate reflective activities, incorporation of feedback, process self-discipline, willingness, and critical distance prevail and establish any necessary self-awareness pre-cursors to the 'ontological turn'. In this way, the reflective practice itself can be "a source of renewal" (Schön, 1983, p. 299) and regeneration (Scharmer. 2009, p. 30), as discussed in Chapter 5.

Creswell and Poth (2018) define a 'case' as "the bounded system…to be studied" (p. 96), and a Transition Design project meets the criteria for a bounded system. It falls into the category of 'instrumental case', which has "'a research question, a puzzlement, a need for general

understanding'" for which "'we may get insight into the question by studying a particular case'" (citing Stake, 1995; p. 98). By undertaking a Transition Design project and progressing it as far as practicable within the bounds of PhD research, it is feasible to gain insight that contributes to both Regenerative Agriculture transition and Transition Design practice.

One goal of a case study is to make the subject of research comprehensible, to "[pare] down…the case's parts to be studied and the research issues…to what can be comprehended… Counterintuitive though it may be, the author has some responsibility for the validity of the readers' interpretations" (Stake, 2005, p. 453). Design projects can be opaque to people from the outside, and so taking a case study approach is also intended to help make the practice accessible to anyone who reads it, and therefore meet the academic goal of enabling productive dialogue regarding a practice.

Defining the case

As noted, this research is focused on the question: *How does a person wanting to engage in 'Transition Design' construct a practice?* Because this question deals with constructing a practice, the end-to-end case process is technically inclusive of my efforts to prepare for a Theory of Change (Chapter 4), define a project approach (Chapter 5), undertake the project (Chapter 6 and Field Guide), and reflect on the outcomes (Chapter 7). Through these steps I will identify, test, and reflect on my assumptions about the project, which serves to test my assumptions and evolve my understanding of practice.

Analysis of the case

Data and documentation of the case study includes three layers:

- **Description** – A detailed, step-by-step description of the case study is captured through project and process artefacts. This includes a scoping finding report and presentation (these are available on the TransitionAg website: https://transition-ag.com/projects-and-research), and the final project output—an illustrated Field Guide (Appendix C).
- **Explanation** – I document my explanation of the practice as it unfolds, including the process of scoping and discovery, engaging with participants, and working

groups, cycles of testing and feedback, impacts, and learning. This is captured in Chapters 4, 5, 6 and 7. Discussion themes are drawn from this.

- **Exploration** – After each step and through an analysis of implications for practice in Chapter 7 and a summative discussion in Chapter 8, I provide the final case assertions - my interpretations of the implication for Transition Design, including framework, methods, tools, and theory, and potential for further research.

3.2 Concepts of value and validity in this research

Defining *value*

The way that 'value' is defined according to social forms of research like Action Research is relevant to Transition Design. In Action Research, value is defined by participants/community, with 'value' referring to "whether a proposed research project truly has potential to affect change" (Gelling and Munn-Giddings, 2011, p. 102). Gelling and Munn-Giddings indicate "that the impetus for the research usually comes from those who will be involved…after they have identified a problem and also identified that [Action Research] will provide the best solution to the problem" (p. 102). They emphasize placing "greater emphasis on the locally identified need than the scientific literature. If the community driving the research believes it has value for them then this should be considered more important than reference to the scientific literature" (p. 102).

Value to participants is also determined by what is referred to as a 'favorable risk-benefit ratio'. As with other research, the researcher seeks to minimize possible risks and maximize possible benefits. However, risks cannot always be foreseen. Direction and details emerge over time. Issues of challenging the status quo, navigating sensitive political, social, and reputational dynamics, and potential to impact those not directly involved can incur risks. In situations that involve social, political, and reputational risk, the researcher must take care to avoid falsely empowering themselves and disempowering participants but also must not underestimate participants' ability to resist power and overestimate the researcher's own ability to protect participants (Löfman, Pelkonen and Pietilä, 2004, p. 337). Meanwhile, the researcher/practitioner, must be sensitive to the possibility that "changes make large emotional, physical and social demands on all involved", and so "all changes should take place slowly" (Löfman, Pelkonen and Pietilä, 2004, p. 336).

For this research to deliver value, there must be responsiveness to emerging context as well as participant impact and agency. These considerations were embedded into the approach as approved by the human research ethics committee, and perception of value is discussed again in Chapters 8.

Scientific validity

Value is linked to validity. In the case of Action Research, validity is enabled by a thorough approach to planning, undertaking, and reporting the research. This includes choosing appropriate research design and methods; agreement from the participants/community to the methods, and rigorous implementation of the chosen methods. Qualitative, social research methodologies offer a perspective on what constitutes appropriate research design and methods.

As Gelling and Munn-Giddings (2011) indicate, “methodological choices should be driven by the research problem or question and not by the researcher’s methodological experience”; there must be “a fit between the question and the method adopted to answer the question” (p. 106). Where ‘best fit’ methods are unclear, the requirement relies heavily on the researcher/practitioner’s reflective habits and ability to adapt practice as more appropriate methodologies are understood or encountered along the journey.

As discussed in Chapter 5, cycles of testing were built into the Case Study approach to ensure validation and adjustments throughout the research. Incorporating feedback started at the beginning of the Case Study, at which point participants validated the need for ‘transition’ and my research question. The habit of ‘sussing out’ the best approach for the situation and iterating along the way is critical in design practice (Yee, 2010).

Transferability of research, not repeatability

In terms of assuring scientific validity, it is a goal of this research to deliver transferable insight for other Transition Design initiatives and/or to Transition Design more broadly, not to set up a repeatable experiment. It is also the intent to work toward project findings which proponents of Regenerative Agriculture find practical, useful, and/or helpful for transition.

Qualitative rigor is judged by internal validity, external validity, reliability, and objectivity (LeCompte and Goetz, 1982). Disciplined project documentation plus identification and discussion of themes avoids claims that the research findings can be transferred, generalized, or applied any

further than is realistic and practicable. Validity is a factor of the trustworthiness of the study, the quality of the understanding gained, and the usefulness of the insight – also described as the credibility, transferability, dependability, and confirmability of the research (Wolcott, 1994; Lincoln, 1985). Validity is assessed by participant feedback and input e.g., through 'testing' and 'validation' with participants, which also helps in locating the value to participants.

3.3 Researcher Positionality

Ontology and epistemology

Following on from the discussion of the significance of ontology in Chapters 1 and 2 and the framing of Transition Design as a form-giving and knowledge-producing type of Participatory Action Research earlier in this chapter, I will describe some of the implications of the underpinning philosophical orientation for this research.

The ontological stance in qualitative, sociological research (social research) typically holds that "reality is multiple as seen through many views" (Creswell and Poth, p. 20). Truth, knowledge, and reality are viewed as socially situated and constructed (Social Constructivism), interpreted according to individual and cultural perspectives (Interpretivist)—and as simultaneously changeable, emergent, and pluriversal. As an example of the sociological stance, Critical Realism, from the work of Roy Bhaskar, *"is concerned with the nature of causation, agency, structure, and relations, and the implicit or explicit ontologies we are operating with"* (Archer et al., 2016). In looking to design for transitions, the Critical Realist stance of paying attention to the mechanisms that produce social events, including structure, agency, culture, conditions, and their inherent capacity for flux, reflection, and changeability, becomes important to the construction of a Theory of Change in Transition Design.

Taking a changemaking approach for my Case Study project goes further than seeking to understand the mechanisms that produce social events. This research places the designer-practitioner-researcher in the role of change agent seeking to collaborate to understand, influence, and shape reality by developing and testing 'interventions', or responses. In the case of Transition Design, the goal is to develop responses that enable transition to a more sustainable, more viable human future—whilst acknowledging that there are (and should be) many visions,

and a pluriverse of responses that will therefore be considered appropriate, not all of which will be fully compatible.

For the project to be successful in supporting transition to Regenerative Agriculture, I must respect the reality others perceive whilst still believing that this reality can be shaped. As noted in Chapter 1 and then discussed in Chapter 6, a LOT of farmers *do not* believe in climate change and the need to respect that perspective does shape the project. In data collection, I take measures to capture the words of participants and confirm intention through participant review to avoid issues of representation. In analysis, taking an Interpretivist approach, I work to reflect meaning in the way participants would have intended, and to share knowledge and findings in a way that participants respect and understand—as assessed by participants.

Axiology—The role of values and researcher bias

In this research I must acknowledge that design choices, social change efforts, and decisions of 'common good' are also not values-free or neutral. Design choices cannot be assumed to be benign in impact, no matter the intention: "there is no such thing as benign design" (Zabolotney, 2017, p. 26). Even when change results in a desired outcome, someone has incurred a loss at some point along the way. Furthermore, what works in one context does not automatically work in every context, or even any another context.

The role of values in research, axiology, is critical to this research. In this case, the research is explicitly activism, work that seeks to lay the groundwork for an ontological turn among participants and audiences.

To this end, I acknowledge my bias. I hold the view that: human activity is impacting climate severity and variability, pushing past Earth's carrying capacities; I am concerned by the evidence that chemically based agriculture depletes ecosystems, soils, and food quality and is ecologically and financially unsustainable; and I believe the argument that regenerative, ecological approaches to farming hold *potential* to impact sustainability.

I am aware that these very beliefs and values could compromise the project if these values come across to farmers as evangelizing, as telling people they're bad farmers, or as simply irrelevant to groups with differing perspectives. I *have* learned that there are values and needs I share with the participants I've met so far: love of the land and the basic human need for food and fiber production to remain viable. In engaging with participants (particularly those who are not

proponents of Regenerative Agriculture), I will need to center around these commonalities and not presume more—whilst looking for shared hopes and visions for the future.

Any Transition Design initiative, this research included, must be clear on boundaries, biases, and values implicit in the work — firstly to be mindful, in an outcomes-oriented, evaluative sense, of what success looks like and the parameters in which success occurs, but to also avoid harm where possible. To this end, researcher bias and values were acknowledged up-front to participants.

3.4 Use of language and terminology

Problem-solving / Finding ways forward

Traditional design disciplines and later offshoots with an innovation bent like Design Thinking, Human-Centered Design, Experience Design and Service Design use language like 'problem solving' and 'finding solutions.' At the scale of wicked *problems*, which are ongoing dilemmas of the human condition to be reckoned with rather than 'solved', the language of problem solving and the attitude of 'solutioneering' from the field of design innovation are out of place, risking naïveté at least and self-defeating patterns at worst if we perpetuate the cultural fixation on silver bullets. Furthermore, in the context of working with marginalized groups and First Nations peoples, for instance, terms like *problem solving* and *finding solutions* can come across as dismissive, disrespectful, victim blaming, and ignorant of structural disadvantage and sources of harm, which can perpetuate colonization and oppression. In the language I choose, I try to refer to 'ideas', 'actions', 'responses', 'strategies' and 'pathways' (etc.) that 'hold/demonstrate potential', 'point to ways forward', or provide '(emerging) evidence' as to how we might address 'problematic situations', 'challenges', and 'opportunities.' I do retain the use of 'problem' and 'problem solving' from original texts and where it is helpful to explain concepts, like methodological origins.

Intervention(s) / Responses

The term 'intervention' is commonly used in literature and design practice (for example, 'ecologies of interventions'), and I have used it throughout the thesis. I am mindful of the traumatic association in Australia with 'The Intervention' enacted on Aboriginal and Torres Strait Islander families and communities by the government. In referring to 'design interventions', where practicable without compromising meaning, I substitute term 'design responses' or 'responses' instead, including 'ecosystem of responses.'

Indigenous / First Nations

I preference the term *First Nations or First Peoples* over *Indigenous* or *indigenous*, because the word *indigenous* was historically used to declare peoples as flora and fauna, and thus dispossess them of their lands, culture, and communities. However, many sources cited in this research use the term *Indigenous* and some people do prefer this term. I retain language used in original texts.

3.5 Expected beneficiaries of this research

The objective of the Case Study project is to contribute to more widespread uptake of forms of agriculture that result in regeneration, whilst allowing research into Transition Design practice.

Fieldwork was conducted in the box-gum grassy woodland biome, which runs along the eastern interior of Australia from southern Queensland to northern Victoria and was primarily focused on grazing and mixed grazing-cropping operations. Despite the regional specificity, it is anticipated that research findings will have usefulness for people interested in the uptake of Regenerative Agriculture more broadly. The research was not oriented to specific agricultural practices, but rather to the broader goal of sustainability and the extent to which a regenerative approach to agriculture can contribute to sustainability.

The research into Transition Design practice is intended to benefit anyone seeking to undertake a Transition Design initiative, anyone undertaking sociological research with a sustainability goal, anyone working toward sustainability transitions, and potentially social researchers and social design practitioners more broadly.

The expected beneficiaries of the research taken in totality, inclusive of practice findings and project findings, are as follows:

- Transition Designers and social design practitioners and researchers
- People working in sustainability transitions
- Researchers - Agricultural transitions
- Farmers, educators, extension, consultants, government, & commercial businesses, etc.

Primary research outcomes—Value to practitioners

By undertaking a project focused on designing for the uptake of Regenerative Agriculture, I seek to *contribute to Transition Design* practice and methodology. The following contributions are anticipated to hold value for practitioners:

- Analysis of empirical cases and identification of elements of practice (Chapter 2)
- End-to-end description of constructing a practice, undertaking that practice, and reflecting on the process and results (Chapters 4, 5, 6, and 7)
- An empirical example that adds to existing demonstrations practice (Chapter 6)
- Use of specific methods and practices in the context of agriculture (Chapters 5, 6)
- Seeking to apply Transition theory to practice (Chapters 4, 7)
- Development of an Elements of Practice framework to assist others in constructing a practice (Chapter 7)
- Packaging the research and Case Study into a Field Guide (Appendix C)

Furthermore, Transition Design has not yet been used in agriculture, and so my research will offer a novel contribution in this area.

Secondary outcomes—Transition impact

It is anticipated that the application of Transition Design to the uptake of Regenerative Agriculture through a project will provide standalone value and insight for agricultural systems stakeholders. Insights may include:

- Building awareness and understanding of regenerative approaches to agriculture
- The paradigms, situation, challenges, and opportunities that shape the challenge of transition to Regenerative Agriculture
- What responses (have potential to) impact Regenerative Agriculture transition
- Insight into how the dominant agricultural paradigm might be shifted long-term.

3.6 Research process and milestones

As shown in Figure 10, the PhD research process revolved around a project and followed key PhD thesis assessment milestones. The stages were as follows: 1) Initiate and Situate, 2) Reframe, Respond, and Envision, and 3) Gather Outcomes and Final Documentation.

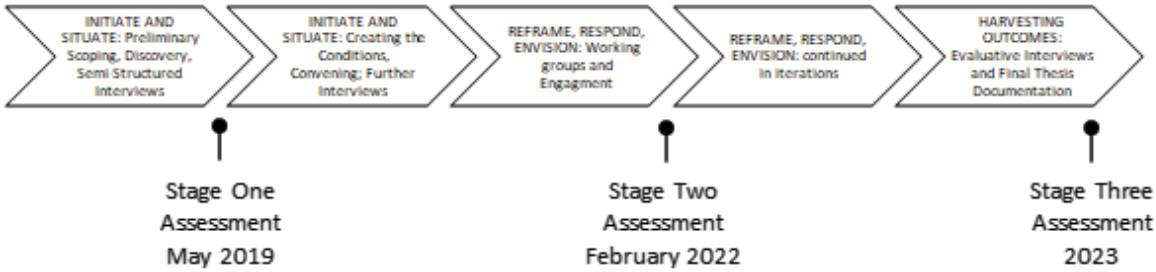


Figure 10. Stages and milestones of the Case Study project

Chapter 4
Theory of Change

About this chapter

In this chapter, I prepare the components I will need to develop a Theory of Change that is appropriate for Regenerative Agriculture transition (e.g., for the Case Study). This chapter establishes elements of practice that inform a Theory of Change, for instance how transitions are conceptualized (Transition Theory), identifying Opportunity Areas and objects of design, and setting an appropriate structure for the Theory of Change. Having an awareness of the elements of practice that I will need prepares me, as a designer, for what I am looking for and seeking to accomplish within my Case Study project and helps me to frame my approach to the project (Chapter 5).

At the end of this chapter, I discuss the extent to which Regenerative Agriculture may or may not impact sustainability transitions.

4.1 Transition Theory

Overview of select Transition Theories

What do we really know about sustainability transitions, if we've never gotten from *here* exactly (a heap of structurally produced issues cumulatively impacting the holistic wellbeing of people and the planet) to *there*—a viable future where global human activity can be sustained? As Conti, Zanello, and Hall (2021) reflect, "Recent literature has highlighted that our understanding of processes of change remains largely theoretical…and that our knowledge on how transformative processes can be designed and managed in practice remains a much-contested interrogative" (p. 9). This section gives an overview of five theoretical and conceptual frameworks that describe current understandings of transitions and how to catalyze systems change: MLP (Geels, 2002), the X-curve (Loorbach, 2014; Hebinck et al., 2022), the Three Horizons Framework (as discussed in

Wahl, 2016), the Bridges Transition Model (Bridges, 2004 and 2009), and Panarchy theory, including the Adaptive Cycle (Gunderson and Holling, 2002).

Multi-Level Perspective (F.W. Geels)

The Multi-Level Perspective (MLP) (Geels, 2002) conceptualizes transition as the interplay between niche innovations, the dominant regime, and the broader contextual landscape, in which regimes hold the balance of power but innovation activity builds in momentum and proliferation. Where niches begin to grow and/or join up they ultimately influence the regime (Figure 11). Geels (2002) developed the MLP framework based on the work of Rip and Kemp (1998), and offers an update in Geels, Kern and Clark (2023, p. 3). Gaziulusoy observes, “It would not be an exaggeration to state that MLP is the most commonly used theoretical model and analytical tool in the field” (2018).

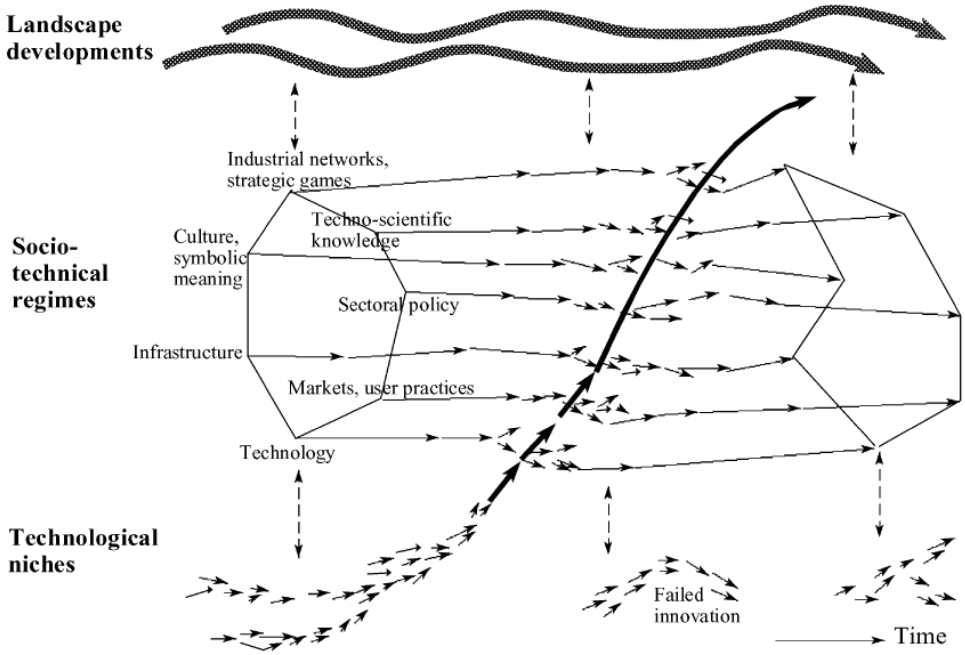


Figure 11. Multi-Level Perspective (MLP) (Geels, 2002, p. 1263)

The focal point of the MLP is how innovation impacts a *regime*, which is the deep structure and locus of established practices and semi-coherent rules that orient and coordinate activities of social groups, thus repeatedly reproducing various elements of socio-technical systems and providing stability (Geels, 2022, pp. 26-7). What happens to regimes is critical because transitions are defined by “shifts from one regime to another regime” (Geels, 2011, p. 26). Regimes are not single actors or institutions, but rather configurations of incumbent technologies, institutions, and social practices that represent a dominant, stable state, bounded by shared rules, and stabilized by technical, economic, social, cognitive, and political lock-in mechanisms (Geels, 2002, p. 3).

Niches, by contrast with regimes, are the locus for 'radical innovations' and provide seeds for systemic change, and may include "R&D laboratories, subsidized demonstration projects, or small market niches where users have special demands and are willing to support emerging innovations" (Geels, 2011, pp. 26-7). As Geels, Kern, and Clark (2023) explain, niches form 'protective spaces' around radical innovations; niches shelter innovations "from competition with mainstream practices and thereby nurture pioneering activities from new entrants such as inventors, start-ups, or grassroots actors" (p. 3).

As the most stable level, the *landscape* is comprised of "both slow-changing trends (e.g., demographics, climate heating, macro-cultural repertoires, societal concerns, geopolitics, macroeconomic trends) and acute shocks (e.g., wars, earthquakes, financial crises, oil price shocks, pandemics], changes that are primarily exogenous to and beyond the *immediate* reach of niche and regime actors (Geels, Kern and Clark, 2023, p. 3). Niche and regime can impact the landscape over time when "changes embraced in formal structures lead to changes in mindset and/or the broader social landscape and context" (Dahle, 2019, p. 223). Rather than conceptualizing niche, regime, and landscape as a 'nested hierarchy', the three have come to be seen as *increasing levels of system stability* (Geels, 2011, p. 26).

Whilst acknowledging the contribution the MLP has made to understanding transitions, critical perspectives exist (Geels, 2011) including from Social Practice Theory. Wallace (2019 and 2022) sets out a canvas based on MLP that incorporates everyday behaviors (via social practice theory) and cultural aspects (based on design theory). In another critique based on a reading of feminist and systems practice, Fraser and Glass (2020) offer the 'Power-Shift Framework' as an alternative, incorporating the deep root systems of social change defined by lived experience and community including: "grassroots movements, personal and community transformation and healing; raising voices, self-empowerment, and holistic understanding of the intersectionality of issues" (in section: A new holistic framework of systems change).

Multi-actor dynamics (an area of research)

MLP can come across as distant, hands-off, and (unintentionally) static and, as a result, other lines of Transitions Research literature have come to describe transitions more actively. Research into multi-actor dynamics frames transitions through the lens of dynamic interactions between various actors with unequal access to power, resources, and influence. Loorbach, Frantzeskaki and Avelino (2017) discuss how research into power asymmetries and the role of agency has led to research into how to engage, empower, and enable agency—particularly among those who are far

outside the dominant regime like “radical outsiders, frontrunners, or marginalized groups” (p. 614)—to help bring about transitions. As a philosophical stance and an observation of empirical dynamics, the concept of multi-actor dynamics (complete with power asymmetries) aligns with philosophical sources, including those named in Transition Design, that draw from ecology and the interconnectedness across all that is ‘nature’ to describe transition.

X-curve (Loorbach, Hebinck et al.)

Another model of note is the *X-curve*, developed by Loorbach (2014) and others, with a recent update from Hebinck et al. (2022). The X-curve highlights the processes of regime destabilization, breakdown, and phase-out that need to occur simultaneously with processes of experimentation, acceleration, institutionalization, and stabilization, but are omitted from some other transition models, including the MLP (Figure 12). Hebinck et al. (2022) explain that issues (i.e., policy failure) put attention on these processes of regime decline, opening critical areas of research for investigation and helping to develop more ‘actionable’ transition guidance (p. 1012).

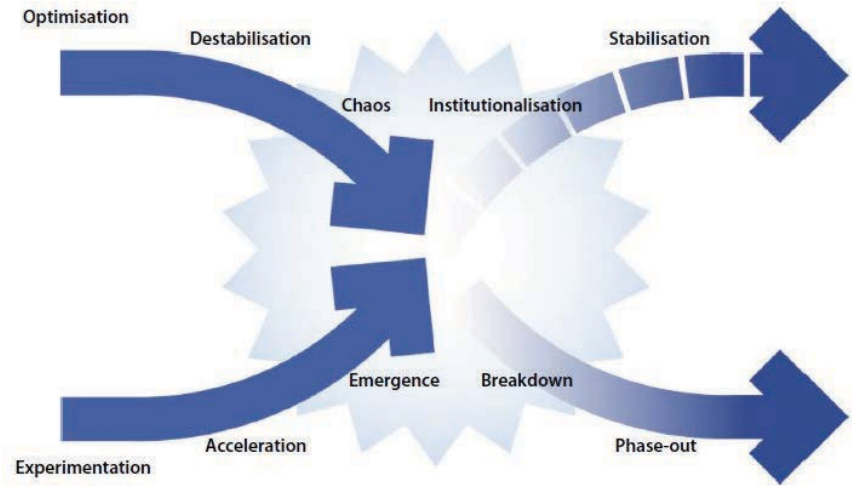


Figure 12. X-curve (Hebinck et al., 2022, p. 1012)

Significant for this research and the discussion of transformations, adaptation, and resilience, the X-curve incorporates social-ecological system concepts and Complexity Theory, for instance ideas of “chaos, emergence, and co-evolution” (p. 1012). Critically, the X-curve sees “chaos and conflict as a functional space” (Hebinck et al., 2022, p. 2012). The turbulence of transitional times captured by the X-curve, particularly in the colliding space of regime decline and regime emergence, also appears in the Three Horizons Framework (Wahl, 2016) and the Bridges Transition Model (2004, 2009), which are discussed next.

Three Horizons Framework (Hodgson, Sharpe, Curry)

In his book, 'Designing Regenerative Cultures', Daniel Christian Wahl introduces the Three Horizons framework as a conceptual anchor for working on transitions to a viable future (Figure 13). Citing the work of IFF members and other futures practitioners (see Hodgson & Sharpe, 2007; Curry & Hodgson, 2008; Sharpe 2018), Wahl provides an overview of the Three Horizons, categorizing it as a foresight tool, "to explore the future potential of the present moment through a number of perspectives that all have to be considered if we are to steer our course wisely into an unpredictable future" (p. 53).

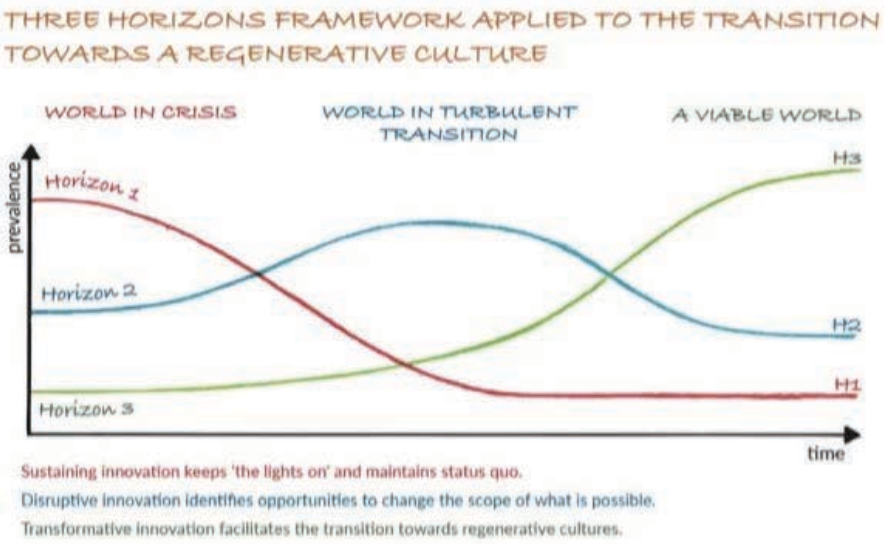


Figure 13. Three Horizons Framework (Wahl, 2017)
Accessed from: https://medium.com/activate-the-future/the-three-horizons-of-innovation-and-culture-change-d9681b0e0b0f)

As the name suggests, the Three Horizons framework is comprised of three horizons (H1, H2, H3). Horizon 1 signifies the 'world in crisis,' and innovations that maintain the status quo. Horizon 2 "represents...the entrepreneurial and culturally creative space of…technologically, economically and culturally feasible innovations that can disrupt and transform H1 to varying degrees..." (Wahl, 2016, p. 54). H3 is a 'viable world'. Not all H2 innovations change the status quo, but some 'disruptive innovations' can be a bridge from H1 to H3.

According to the Three Horizons framework, we never truly reach and maintain H3. Firstly, H3 is not the end, rather a new H1: "the pilgrimage towards a sustainable and regenerative future has an endless string of false summits", and "there is no arriving at and maintaining an H3 scenario forever" (Wahl, 2016, p. 55).

Bridges Transition Model—Organizational and personal transitions

The work of William and Susan Bridges (Bridges, 2004, 2009) in organizational change and personal transitions is relevant here. The Bridges Transition Model sets out three overlapping phases of transitions and four rules of transition. The phases are 1) Endings; 2) The Neutral Zone; and 3) New Beginnings (Figure 14). The four rules that Bridges offers are useful to Transition Theory: cycling back to old ways; endings are the first phase of transition; expect yourself to resist transition; and that endings must come before beginnings—with a fallow or neutral zone of lostness in between. Although I am careful about taking models out of context as well as the context from which models originate, I argue that the Bridges Transition Model describes patterns that are observable in system transitions.

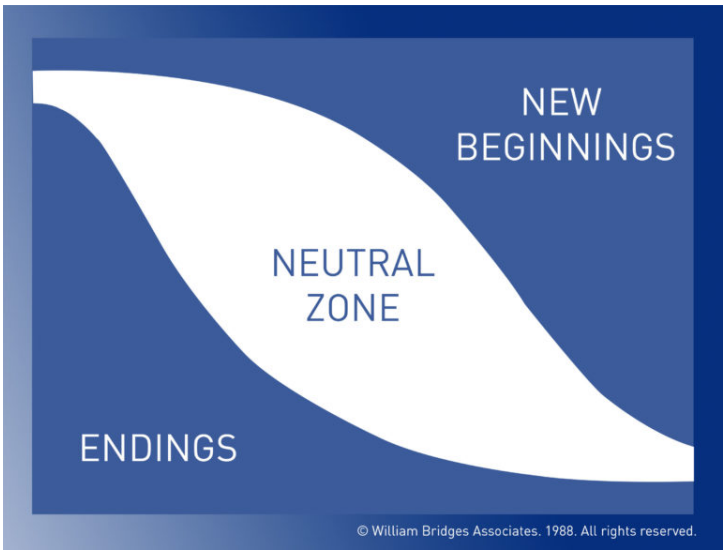


Figure 14. The Bridges Transition Model, Bridges
Accessed from: https://wmbridges.com/about/what-is-transition/

Whereas the MLP offers a bird's eye view of dynamics between players (niches and regime) and the broader landscape, and the Three Horizons models speaks to the societal journey conceptually over horizons of time, the Bridges model describes personal and group experiences. The Bridges Transition Model is also distinctive because it explains how the psychological experience of transitions is counterintuitive.

For instance, Bridges' insight that transition begins with an 'ending' is a surprise—but echoed by others. Just as in the Three Horizons framework, we must let go of the status quo. In the words of Scharmer (2009), "Tuning in to something new requires that you must first let go of something old…To find [destiny], we must be willing to move into an unknown territory and to go out with

'our whole being'. It may demand sacrifice" (p. 199-200). Then, rather than stepping into a shiny world of 'new beginnings' with ease, Bridges (2004) describes people experiencing discomfort and even chaos 'coming home' to the future (p. 47-51).

Bridges (2004) names the in-between transition phase the 'Neutral Zone', but the experience is anything but neutral. Bridges (2009) describes the Neutral Zone as a deeply confronting "psychological no-man's land…a kind of emotional wilderness" (p. 8). It is this poetic darkness, the 'time between dreams' (Bridges, 2004, p. 133) or sacred space between stories (quoting Charles Eisenstein), that is the space for probing, reframing, innovation, and experimentation, just as in H2 of the Three Horizons framework.

Each step to restructure and reorder our lives is a step to embed new behaviors and identities. When we come to the horizon of the New Beginning, we can see that there is more to do to reach our intended goals—just as described in H3 of the Three Horizons.

The Bridges Transition model, like MLP and the Three Horizons, paints a picture of what we can expect of transitions, but complements and enhances our understanding of transition experiences. I hypothesize that the psychological dynamics which Bridges observes hold true at the scale of sustainability and societal transitions yet manifest differently.

Panarchy and Adaptive Capacity

Originating from Complexity Science rooted in Resilience Theory (Sundstrom et al., 2023), the Panarchy and Adaptive Cycle models (Figure 15) developed by Gunderson and Holling (2002) are foundational conceptual models within transformation research and help visualize Panarchy Theory (Allen et al., 2014).

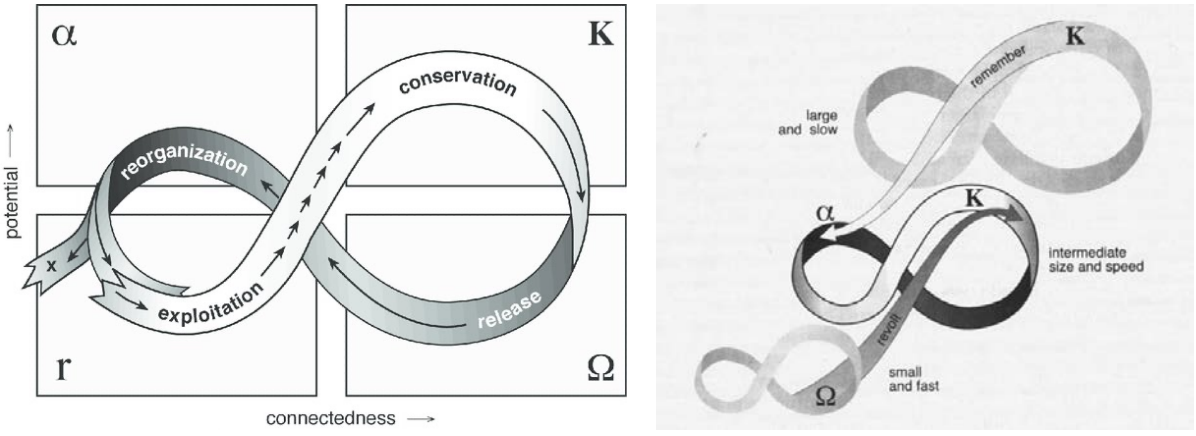


Figure 15. Adaptive Cycle (left) and Panarchy (right) (Gunderson and Holling, 2002)

An Adaptive Cycle, a single system layer in the Panarchy model, represents “the interactions between living and non-living elements of a system within a single domain of scale, their development, growth and decay” (Allen et al., 2014, p. 579). The four phases within an Adaptive Cycle are growth or exploitation’ (r), ‘conservation’ (K) of established patterns and resource distribution, ‘collapse or release’ (Ω), and reorganization (α) (phases attributed to Holling, 1986). The Adaptive Cycle is “often drawn like an infinity symbol or Möbius loop that joins these four phases” (Wahl, 2016, p. 108). The Panarchy model visualizes systems as nested and dynamically connected across scales of space and time (cross-scale linkages) (Allen et al., 2014). Looking across multiple levels of Adaptive Cycles, the Panarchy model highlights the need, in transition, to ‘remember’ (honor what is and what was) through change and to attend to the dynamics of ‘revolt’ (backlash) (Wahl, 2016).

Preiser et al. (2018) trace the development of ‘Panarchy Theory’ beginning with von Bertanlaffy’s 1968 conceptualization of the principles of Living Systems, through developments in Systems Thinking, Complexity Science and Complexity Theory, social-ecological systems (SES) research, the identification of SES systems as a particular form of complex adaptive systems (CAS), and to Resilience Thinking (p. 2). In comparing prominent authors’ classifications of complex adaptive systems, Preiser et al. arrive at six causal explanations (organizing principles) that define the features of complex adaptive systems, including:

> *(1) CAS are constituted relationally; (2) CAS have adaptive capacities; (3) CAS behavior comes about as a result of dynamic processes; (4) CAS are radically open; (5) CAS are determined contextually; and (6) novel qualities emerge through complex causality (p. 3).*

Figure 16 (from Preiser et al., p. 5) further describes concepts and attributes that characterize complex adaptive systems.

Types of organizing principles that bring about CAS features	Related concepts and attributes that characterize CAS
1. Constituted relationally	Netlike structure, hierarchies, holarchic, diverse components, built-in redundancy, heterogeneity.
2. Adaptive capacities	Self-generation, self-organization, decentralized control, memory, evolutionary and concurrent persistence and change (resilience), anticipatory capacities.
3. Dynamic processes	Far-from-equilibrium, multiple-trajectories possible, periods of fast and slow change (punctuated equilibria), nonlinear interactions, attractors, thresholds, tipping points, regime shifts, feedback loops (enabling and constraining), cross-scale interactions.
4. Radically open	Porous boundaries, embeddedness, nestedness, exchange of matter, information, energy, teleconnections.
5. Contextually determined	Function changes as system changes, components with multiple context dependent identities.
6. Novel qualities emerge through complex causality	Circular/recursive causality, large webs of causality, multiple pathways of causality, high levels of stochasticity, same starting conditions that produce different outcomes, emergent properties.

Figure 16. Organizing principles of complex adaptive system features (Preiser et al., 2018, p. 5)

The ten principles of Living Systems synthesized by Irwin (2011) are consistent with the characteristics of complex adaptive systems (organizing principles) described by Preiser et al. (Figure 16) and point to the behavior of these systems:

1. Organizationally open, self-organizing and ‘autopoetic’
2. Operate in a state far from equilibrium
3. Have ‘emergent’ properties
4. Their structure is networked [sic], holarchic, and fractal
5. Are sensitive to initial conditions
6. Are controlled/ regulated through feedback
7. When healthy, have a high degree of diversity
8. Comprised of non-linear relationships
9. Whole and part relationships are non-hierarchical
10. Are full of interdependence and cooperation.

Comparing conceptual frameworks for transition

These models describe potential shifts (transformations) from unstable to stable states (regimes) through times of turbulence and chaos, noting that transformations do not always occur if the resilience of the regime reinforces stability. The Adaptive Cycle zooms out farther than most of the models, framing the shift from stable to unstable state as a cyclical, recurring phenomenon. The Panarchy model zooms out further again, depicting transitions and transformations across multiple systems (levels). No matter where you are or when you were born, you will be part of some level of a system in some state of transformation or flux. Irwin (2019a) highlights the utility of these models, stressing the value of looking across multiple horizons of time, at multiple levels of the system, and grappling with elements of transitions rooted in the past and the present to create shifts that will bring about a more viable future (p. 164, 163-5).

Differences across models enhance the understanding of transitions and how they may be influenced. Firstly, the MLP framework provides a language and architecture for the interlinked dynamics of innovation niches, regimes, and the broader landscape. The MLP also helps conceptualize how a regime is comprised of many independent but interdependent components, all of which must shift in some way for change to occur.

The Three Horizons framework and Bridges Transition Model put transitions across horizons. Using horizons as a structure helps conceptualize the time element and even visualize Geels' changing landscape. The metaphor of horizons over a landscape is an evocative and accessible idea, helping us to "see" the longitudinal experience of transition. The horizons break transition into similar phases which are more like simultaneously occurring threads of past, present, and future that re-balance in prevalence over time. The phases of the Adaptive Cycle, which frames social transition as an *ecological* process of transformation, present a similar sequence as compared with the Three Horizons and Bridges Transition Model if we trace the cycle from the point of collapse or release (Ω) and then follow it through subsequent phases of reorganization (α) and growth (r) to the stable state of 'conservation' (K) (Holling, 1986).

The personal and group psychology dimension that the Bridges Transition Model draws out enriches our picture of what may be happening at a societal scale. The "psychological wilderness" and "emotional no-man's land" in Bridges (2009, p. 8) describe the black hole of uncertainty in transitions. Wahl (2016) similarly flags that transitions are tumultuous, with advancing niches coming into friction with and mixing with elements of the regime (p. 53-61).

I note that Theory U (Scharmer, 2009), to be discussed in Chapter 5, offers a counterpoint to the tumult. Amidst bewildering turbulence, friction, uncertainty, and the 'emotional wilderness' (read: confusion, aloneness, and lostness), Scharmer advises retreat, stillness, and grounding (literally as well as conceptually) in "inner knowing" (p. 377-8), or "the deeper source of knowing" (p. 399-401). Scharmer's ideas offer a source of comfort and solace, as well as an inner compass.

Table 3 summarizes the similarities and differences among the MLP, X-curve, Three Horizons, Bridges Transition model, and the Panarchy/Adaptive Cycle models. The points of commonality across models as well as nuances from each model describe what we can expect to experience in transitions. The models agree that it is the in-between zone/horizon, at the mixing of niches and regimes—the "brackish waters of hybridity" (Yunkaporta, 2019, p. 233) where freshwater meets salt water—that is the most fertile zone for re-imagining, experimenting, and re-making, and that design has a role to play in this zone.

Table 3. Comparison of Transition Theory frameworks

ELEMENT	COMMONALITY ACROSS MODELS	MULTI-LEVEL PERSPECTIVE (Geels 2002)	X-CURVE (Hebinck et al. 2022)	THREE HORIZONS FRAMEWORK (via Wahl 2016)	BRIDGES TRANSITION MODEL (Bridges 2004, 2009)	ADAPTIVE CYCLE/ PANARCHY (Gunderson & Holling 2002)

Type of model and use	Theoretical models for understanding, contributing to and adapting to big changes	Theoretical model and analytical framework	Theoretical model and analytical framework	Theoretical model and foresight tool	Theoretical model and coaching framework	Theoretical model of Adaptive change
Topic	Tension between status quo and a viable future; between disruption and return to stability	Conceptualizes how growth of niches leads to transition from one dominant regime to another	Portrays the interactions of build-up and breakdown associated with transitions	Conceptualizes how shifting from crisis to a viable world involves turbulent disruption	Navigating personal and organizational transition (which I argue applies to sustainability transitions)	Conceptualizes transformation in human and natural systems as ecological processes
Focus	Grappling with transition itself, interactions between niche, regime, status quo, future, and disruption	Niches, the Dominant Regime, and the broader contextual Landscape	Adds a focus on the breakdown of regimes in addition to build up of niche innovations	Innovations that maintain the status quo or bridge to the future over Three Horizons	Phases of transition experiences: Endings, New Beginnings, and the 'Neutral Zone'	Phase change in the interaction between humans and nature in complex adaptive systems; Cross-scale interaction
Preferences solutions that…	Bring about change that enables future viability and adaptive capacity	Do not compromise the ability of others in other places or other times to pursue their own wellbeing	Attend to all dimensions of transitions, not just the future that is drawing us forward	Create conditions conducive to life and establish regenerative patterns	Are true to self and values, hopes, dreams, goals	Facilitate adaptive capacity and resilience through renewal, re-organization, and re-emergence of stability
Role of time	Transition takes time; Slow- and fast-moving processes; Episodic; Route is not a straight line	Change over elapsed time	Time 'concealed' in this framework, relies on other frameworks to surface this dimension	Emphasis on horizons of time helps conceptualize change and set expectations	Emphasis on phases helps conceptualize the experience and set expectations	Episodic change; Non-linear interaction of slow-moving and fast-moving processes
Relationship to the future	The future is already here, it's just not evenly distributed yet; Patterns across cycles	Niches here today represent potential seeds of a new regime	Future as the next regime or stable state	Some innovations represent the potential future present today	The process of transition makes new beginnings possible, but threads of new beginnings exist today	Evolution, adaptation, and resilience over recurring cycles of transformation at different levels of scale
The human experience of transition	Prepare for friction, turbulence, and distress; Some ideas/changes will work, and others will not work	Interaction and friction between actors; how power structures are influenced and shift over time	Provides an opening to discuss negative perceptions of chaos, destabilization, and breakdown	Explicit expectation of turbulence during transition and of many false summits	A 'psychological no-man's-land'—an 'emotional wilderness'; Fighting transition even if it is chosen	The role humans play in degrading systems; 'fixes' that haven't worked; somehow humans are still here

Source of creativity	Turbulence and lostness in the 'sacred space between stories' a necessity for creative experimentation including reinvention, and adaptation	Niches as sources of creativity; Friction at the edges between actors a source of creative problem solving	Chaos as a window for innovation mediated by uncertainty; a focus on what is undesirable and unsustainable helps make use of opportunity	Economically and culturally feasible innovations that can disrupt and transform the status quo and bridge to the future; using the framework to steer wisely	Grappling with loss and letting go creates space for the new; Times of uncertainty are vital for creativity, experimentation	Human foresight and innovation together with natural phenomena of adaptation, resilience, and novelty; the cycle itself

4.2 Opportunity areas—Where to intervene in a system

Towards a practice of framing Opportunity Areas

Transition Theory clearly anticipates many opportunities to intervene to influence transition. One critical question for Transition Design practice is: *Where* to intervene? As Allen et al. (2021) articulate, knowing where to intervene is "non-trivial and has important implications for understanding the resilience of systems" (p. 581).

I argue that the practice of identifying Opportunity Areas is key to defining opportunities to intervene across levels of a system and provides rationale for interventions, reinventions, and experiments within the Theory of Change. The empirical cases (Chapter 2) point to tools, like the MLP, STEEP framework, and Winterhouse Social Pathways Matrix, that help identify opportunities, but how to identify a set of *Opportunity Areas* is a step that has not been articulated in Transition Design literature. As Transition Design matures, designers will be asked to defend the logic behind the suite of interventions that were identified and selected, and the practice of framing Opportunity Areas can support that conversation.

Opportunity Areas are the set of domains in which action can be taken to help facilitate, enable, or accelerate transition for a given system; Opportunity Areas not interventions but rather 'acupuncture points' of systems (Ceschin and Gaziulusoy, 2016). Each 'Opportunity Area' is a rich territory for reinvention and invites a plurality of responses. Opportunity Areas circumscribe the known sum of opportunities, the scope for ecologies of interventions (ecosystems of responses).

The activity of framing Opportunity Areas is usually interwoven with other sensemaking and futuring activities, like mapping the problem and stakeholder perspectives, developing visions,

and backcasting, and then completed as its own activity to form a bridge to and an anchor for idea generation. Framing and distinguishing among Opportunity Areas involves simultaneously iterating how problems, barriers, enablers, opportunities, and futures are framed; Opportunity Areas structure the relationship between problems and 'solutions' (for an example from the Case Study, pp. 64-67).

Steps to identify Opportunity Areas might include:

- Explore opportunities through a series of lenses
- Frame and reframe Opportunity Areas
- Construct a Theory of Change that incorporates the Opportunity Areas
- Generate intervention ideas, testing with Opportunity Areas and the Theory of Change.

Working with lenses to frame Opportunity Areas

I use multiple lenses, or filters, to 'play' with framing and generate a coherent and complete-*enough* set of Opportunity Areas. This list of lenses is my own list—you might develop your own—and it incorporates concepts from Irwin (2018), Gunderson and Holling (2002), Allen et al. (2014):

- **Stakeholder mapping, actor and network analysis** – Working through perspectives and connections among stakeholders/actors helps to frame domains of action, boundaries, spheres of control and influence, and which actors have responsibility and power, of lack thereof.
- **Systems and problem mapping** – Developing a (visual) reading of the system and the many interrelated challenges helps frame opportunities (for instance, following the Transition Design Framework method). Consider developing more than one 'view' of the system to reveal different opportunities.
- **Scale differences** – Opportunity Areas sit across different levels of scale, including across nested systems as in the Panarchy model (Allen et al. 2014, p. 580). Various models including Panarchy, the MLP (Geels, 2002), the Winterhouse Social Pathways Matrix (n.d.), and the Domains of Everyday Life (Irwin, Tonkinwise and Kossoff, 2020b) can be used to facilitate framing Opportunity Areas across different scales and levels of systems.
- **Functional/operational differences** – Refers to separating Opportunity Areas based on distinctions like role/task within the system, and who or what performs

key functions. In a systems view, all functions are needed for the system to operate, and so there is a 'MECI' principle (Mutually Exclusive, Collectively Exhaustive, which I have heard pronounced *mee-cee*) that applies to looking for Opportunity Areas, especially with respect to functional or operational distinctions. 'MECI' doesn't necessarily require a large number of Opportunity Areas, as Allen et al. (2014) point out, only "a limited number of processes operating at distinct scales are responsible for the characteristic structures in time and space that define specific systems" (p. 580).

- **Leverage Points, path-dependencies, and lock-ins** – A Leverage Points (Meadows, 1999 and 2008) view e.g., analyzing Opportunity Areas based on Meadow's Leverage Points, can reveal a different take on functional/operational differences, perhaps yielding a different set of opportunities. The twelve Leverage Points, ordered from least to most leverage are: 12) constants and parameters, 11) size of stabilizing stocks and flows (buffers), 10) structures of stocks and flows, 9) time delays, 8) balancing feedback loops, 7) reinforcing feedback loops, 6) information flows and access, 5) rules (incentives, punishments, and constraints), 4) self-organization, purpose, 3) function (goals) of the system, 2) paradigms, and 1) the power to change paradigms. Opportunities areas can be found in examining path dependencies created by regimes and that lead to lock-ins, including technology choices, attitudes and cultures, infrastructure, institutions and policies, power and politics, and research and innovation priorities, practices, and narratives (Conti, Zanello and Hall, 2021, p. 10).
- **Social Practice and the Domains of Everyday Life** – Social Practice Theory together with the MLP, needs and satisfiers, and the Domains of Everyday practice (Irwin, Kossoff and Tonkinwise, 2020b) can be used to understand how the practices which we 'perform' in everyday life, and which are subject to transition, can be organized as 'bundles.' Each 'bundle' potentially represents an Opportunity Area for end-to-end redesign in the context of everyday life. Physical objects can help facilitate 'object ecosystem mapping' (Kashyap, Svejkar and Tonkinwise, 2024), and this practice is an example of how webs of social practices can be explored tangibly through embodied practice.
- **Scale-linking functions** – Refers to the need to identify where functions connect across levels or domains. Can include feedback loops, processes, and connections.

Scale-linking functions serve vital purposes of aligning, integrating, and transmitting change but can be hard to spot, invisible even, and there may be no actors who have direct responsibility for these functions. Meadows' Leverage Points (2008) as well as network analysis can assist in locating scale-linking functions. The scale-linking lens also helps link and amplify projects.

- **X-curve analysis** – Using the X-curve (Hebinck et al., 2022), Opportunity Areas can be framed and organized by their contribution to niche experimentation, acceleration, emergence, institutionalization, stabilization and regime optimization, destabilization, breakdown, and phase out. For discourse in the design literature on designing for regime destabilization (exnovation in Hebinck et al., 2022), see Tonkinwise (2014, 'design away'), Coombs, McNamara, and Sade (2019, 'undesign'), and Fry and Dilnot (2003, 'to eliminate by design much of what has been designed'). Ensuring Opportunity Areas support each of these dimensions of the X-curve can assist in 'unlocking' the dynamics of the system that preserve the status quo whilst supporting growth of ideas and innovations.
- **Disruptive, ontological reframes** – Framing Opportunity Areas requires keeping an eye out for ways to significantly challenge things as they exist, including our own mental models and the limiting ontologies embedded in *things*—which can be very difficult to 'see'. Disruptive reframes sometimes manifest through things that don't fit or stand out (whether a little or a lot)—philosophically, operationally, culturally, etc., including outliers and positive deviants that seem to be creating the (potential for) the outcomes you're seeking. The perspectives of First Nations collaborators, participants and stakeholders, Domains of Everyday Life/Lifestyles, and Max-Neef's Theory of Needs can help locate opportunities for disruptive worldviews and/or ontologies, and create space for ontological openness.

Defining 'Objects of Design'

Every Opportunity Area (and respective interventions) involves *objects of design* e.g., ecosystems of *things* that can and should be designed, reinvented or 'designed away' (from Tonkinwise, 2014; Fry and Dilnot, 2003; Coombs, McNamara, and Sade, 2019) as part of materializing change.

Objects of design are, quite literally, 'things.' Systems (including consumption-production systems, socio-technical systems, and human-nature systems) are comprised of zillions of designed objects, each one is interlinked and interdependent with an ontology. Objects of design are the minutiae through which systems are manifested and they 'afford' behaviors specific to a system. However, objects of design are not necessarily tangible and, if we are careful ontologically, anything humans work on could be an object of (re)design:

> *"Everything in the world is an object of design, any way you look at it—whether it's a product, a service, a system, a policy from government—there are so many opportunities to make whatever it is you're working on better" –Maureen Thurston (Duncan, 2020).*

Any object of design can be made visible, tangible, and/or interactive (materialized). It is the quality of having form and being experience-*able* that makes an 'object' design-*able*. As with the Opportunity Areas, Social Practice Theory (Shove, Pantzar and Watson, 2012), the redesign of Everyday Life (Irwin, Tonkinwise, and Kossoff, 2020b; Tonkinwise, 2023), and Meadows' concept of Leverage Points (1999 and 2008) can help locate objects of (re)design.

To achieve transformative change, however, the new goals, paradigms, and ontological openness required by future visions (i.e., sustainability) must be redesigned into every Opportunity Area and object of design concurrently. In discussing path-dependencies that limit agri-food system transitions, Conti, Zanello and Hall (2021) conclude that, due to the "interconnected and self-reinforcing nature of factors that create resistance to change", there is a need for "all the factors reinforcing unsustainability to be re-directed towards a sustainable trajectory *simultaneously*" (p. 9). The need to simultaneously redesign (nearly) everything underscores the need to develop a robust set of Opportunity Areas.

I have found that one of the most challenging design tasks can be figuring out *how* an object of design can embed and materialize new goals, alternative paradigms, and ontological openness.

4.3 Structuring a Theory of Change—relevant to transitions

Theory of Change, which has been used since the 1990s to systematically evaluate how specific activities can lead to desired outcomes within a given context, refers to both methodology and resulting artifact (Drabble et al., 2021). Adapting Theory of Change into the context of sustainability transitions, there is a risk that approaches could be limited by linear assumptions

about cause-and-effect or fail to consider broader contexts (Tonkinwise, 2023). Murphy and Jones (2021) call for wider application of Systemic Theory of Change (Murphy and Jones 2021) and Maru et al. (2018) promote *complexity-aware* Theories of Change, which can include branching, nesting, causal loops, and other complex system structures. A mapped and context-dependent Theory of Change should link the relationships between necessary pre-conditions, activities, outcomes, and goals—and enable experimentation to identify strategies which help to meet the end goals. As an artifact, Theories of Change can be represented in several ways, including a flow chart diagram, a narrative, a conceptual visual, or image. The Just Transitions Framework is an example of a visual Theory of Change (Figure 17).

Theories of Change can be nested. For example, the Regenerative Agriculture transition Theory of Change (Figure 45; Field Guide, pp. 106-107) nests into the Rebraiding Rivers Theory of Change (Figure 46; Field Guide, p. 4). These two Theories of Change are interdependent, and outcomes at one system level will influence outcomes at other system levels.

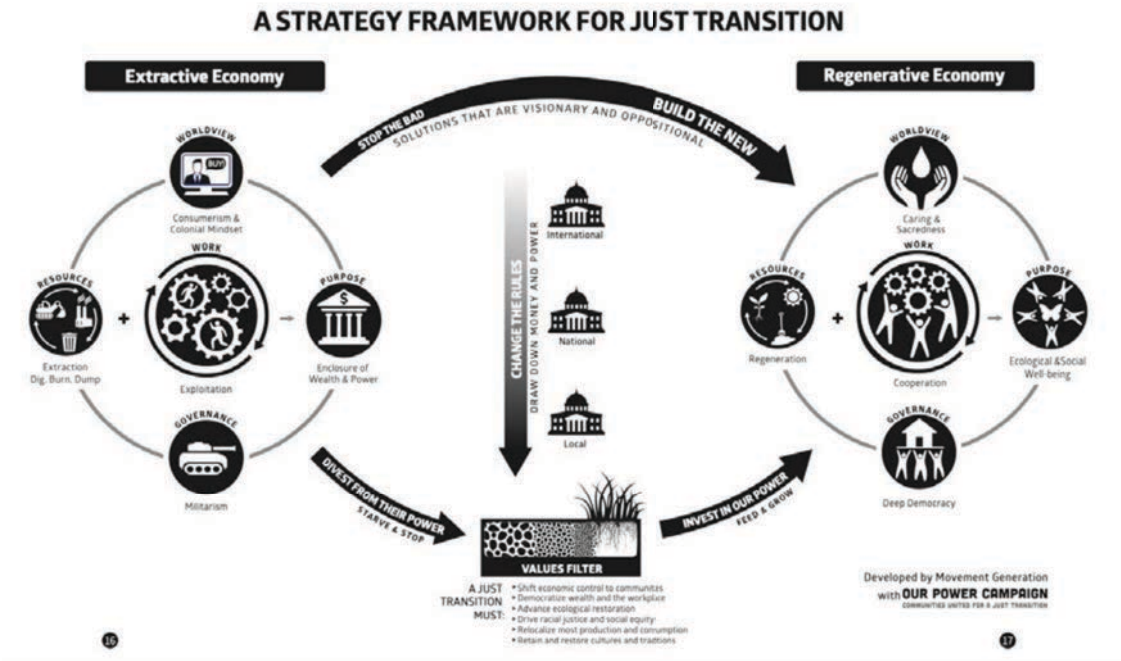


Figure 17. A Strategy Framework for Just Transition (Source: Movement Generation, 2016, pp. 16-17)

Process for developing a Theory of Change

As part of an overarching process, the steps for (co-)developing and iterating a Theory of Change may include:

1. Understanding how transitions are conceptualized in the theory

2. Mapping and analyzing the system and challenges
3. Establishing goals and/or visions
4. Framing opportunities and a set of Opportunity Areas
5. Defining potential objects of design
6. Constructing a Theory of Change
7. Testing and iterating based on stakeholder and participant feedback at milestones and over horizons of time, incorporating into evaluation

Criteria for the Regenerative Agriculture transition Theory of Change

Complex adaptive systems, including Living Systems, are the context into which we intervene to influence transitions and exhibit particular behaviors, as highlighted in Wicked Problems, Transition Theories, and Irwin's (2011) description of the relevance of Living Systems principles to design. Considering the dynamics of influencing change in complex adaptive systems, I identified the following criteria for a Regenerative Agriculture Theory of Change (e.g., for my Case Study):

- Reflect a changed relationship between humans and nature
- Track impacts on the environment together with other forms of impact; work toward flexibility, resilience, and adaptation of the whole system
- Design multiple interventions and experiments at multiple levels of scale
- Enable symbiosis, connectivity, and networks through an 'ecosystem of responses'; link across scales
- Avoid centralized, rigid, linear, large-scale, and monolithic 'solutions'
- Enable conditions for pluriversal futures, self-organizing, and agency
- Seek small changes that can seed bigger changes
- Manifest desirable futures in fractals—through objects of design, parts of the system, or at micro scales
- Explore creative dynamics of disequilibrium; build capacity and pathways for reinvention and change
- Amplify positive feedback loops to grow sustainable solutions; use negative feedback to help disrupt unsustainable regimes or bring stability.

An appropriate structure for the Theory of Change

The criteria above helped me to set a structure appropriate for a systems Theory of Change. The diagram in Figure 18 uses the structure of a Programmatic Theory of Change (left) as a comparison with a Systems Theory of Change structure (right). The Systems Theory of Change structure features:

- Holistic sustainability as the goal
- Systems transformation as well as environmental impacts
- Opportunity Areas and Responses (actions, strategies, and experiments) across the levels of the MLP (niche, regime, and landscape)
- Linking and amplifying across Opportunity Areas, for Ecosystems of Responses
- From left to right, responses cumulatively impact the environment—even early on

Figure 45 (Field Guide pp. 106-107) shows the Systems Theory of Change produced for the Case Study e.g., for Regenerative Agriculture transition.

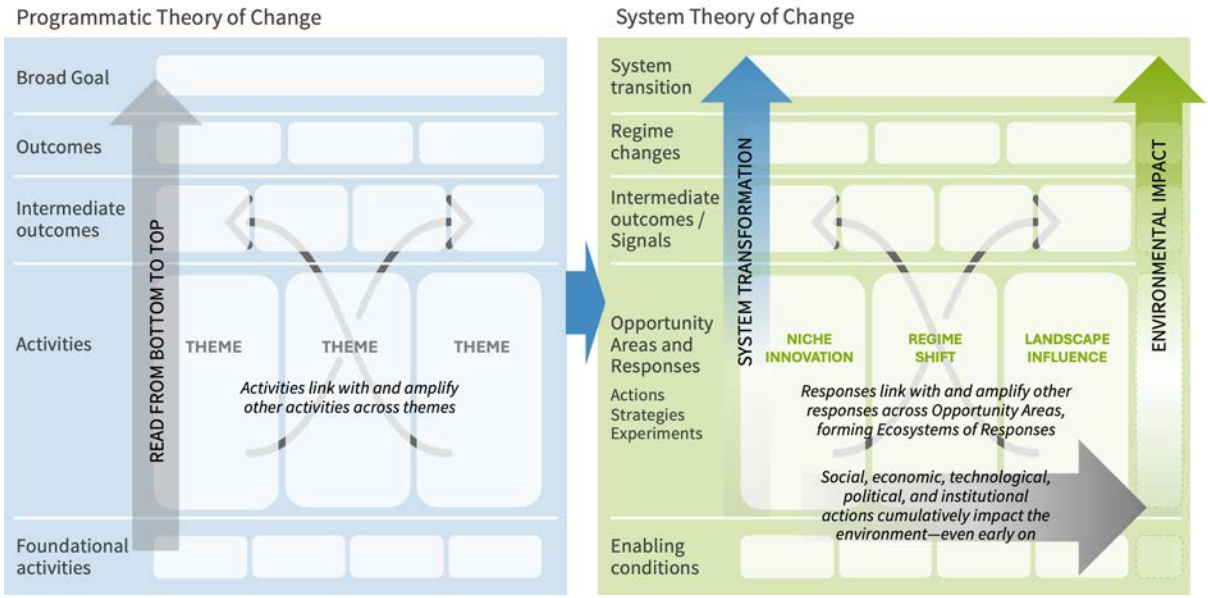


Figure 18. Programmatic Theory of Change structure versus a System Theory of Change structure

4.4 Will Regenerative Agriculture contribute to sustainability transitions?

Critical to selecting a Case Study project for this research was the need to work on a topic that could feasibly contribute to change. Early interviews pointed me to Regenerative Agriculture transition with the view that it *might* contribute to sustainability transitions. However, whether

Regenerative Agriculture *will* contribute meaningfully to sustainability is uncertain. I briefly outline the debate here and return to the discussion in Chapter 6.

Agricultural systems—or more specifically, alternative approaches to the current agricultural paradigm—have a crucial role in impacting planetary boundaries, global ecosystems, and carbon drawdown. As Gordon, Davila and Riedy (2021) highlight, "humans are now the leading drivers of change to earth systems" (p. 809). With "agriculture [occupying] 38% of the planet's terrestrial surface...making it a dominant driver of change in global ecosystems", they argue that "there is an urgent need to explore alternative agricultural approaches that can support transformations" because, "without significant change in the agricultural sector worldwide, human activities will continue to overstep planetary boundaries" (p. 809). Regenerative Agriculture is one of the "prominent and growing" alternatives to "industrial-productivist" agriculture (Gordon, Davila, and Riedy, 2021, p. 810). In a paper calling for research pathways to build science-based evidence and national narratives for Regenerative Agriculture, Grelet et al. (2021) describe how

> *"proponents claim that [Regenerative Agriculture] can reverse climate change and lessen or even mitigate the environmental impacts arising from food production while delivering social and economic benefits. Its critics question these claims and point to the lack of scientific evidence" (p. 4).*

Farmers practicing Regenerative Agriculture claim more than environmental benefits, but there is a mismatch between claims and data (Grelet et al., 2021). One project sought to reflect the complexity of benefits, headlined as 'better profitability, biodiversity, and wellbeing' (Ogilvy et al., 2018) but faced criticism of methods for assessing profitability (Francis, 2020; footnoted in PwC, 2021, p. 29). Participants in this research described reducing costs like fertilizer inputs and therefore increasing overall profitability even if not increasing production, improved mental wellbeing, and positive impacts on their families. They reported frustration with the lack of relevance of existing research approaches.

Grelet et al. (2021) validate this charge, explaining that

> *"researchers have highlighted the tension between research experiments that meticulously control for certain variables and the desire to adapt in real time to the Living Systems that constitute one's farm and one's primary business. When this tension is resolved entirely in favor of the scientific preference, the results are suboptimal" (p. 38).*

As a result, Grelet et al. recommend that "[Regenerative Agriculture] research be designed to not only test and/or explain [Regenerative Agriculture] claims, but also to inform/support the transformation of [New Zealand's] agriculture and food system" (p. 2), which proved fragile in the COVID pandemic. New Zealand—like other countries—faces "acute environmental and societal challenges", such as declining waterway health, topsoil loss, more frequent and severe droughts, and "the pervasive wellbeing crisis of rural farming communities" (p. 5). Challenges such as these are driving calls for "transformation of the global agri-food system" (Grelet et al., 2021, p. 4). And so, despite the contestation, unease with destructive qualities of the dominant agricultural paradigm is fueling interest in alternatives like Regenerative Agriculture (Gosnell, 2021, p. 1).

Where an agriculture system restores functions like ecological resilience, ecosystem processes, healthy soils, carbon sequestration cycles, and water retention, there becomes a logic to the idea that increasing uptake of that approach could benefit bioregional and—even planetary—function. People around the world backing this idea include the King of England, who invited an agribusiness task force represented by twelve major organizations (including Mars Incorporated, Bayer, McCain Foods, Mondelez, and PepsiCo) to develop an action plan for how the private sector can support scaling Regenerative Agriculture, arguing that transition to Regenerative Agriculture isn't just potentially impactful, it's urgent (SMI, 2022).

At the same time, critics warn there is a lack of attention in Regenerative Agriculture to issues of power, equity, social justice, and First Nations origins and worldviews (for examples see Cultural Survival, 2020; Fassler, 2021; and Bless, Davila, and Plant, 2023). This is discussed as the 'social justice blindspot' in Chapter 6 (Field Guide, pp. 94, 100-101, 108-110). This point is vital. High hopes have been pinned on Regenerative Agriculture but, as Hawken (2017) explains through 100 'substantive solutions', transforming the agricultural paradigm is not enough to address climate change. If we 'simply' swap one agricultural management paradigm for another without consideration of social justice, we are at risk of perpetuating and reinforcing historical injustices and social inequities in Australia and around the world. Critics are emphatic: Regenerative Agriculture at risk of *not* contributing to environmental impact and sustainability transitions in meaningful ways at scale if it is compromised ecologically, economically, spiritually, *or* socially.

Chapter 5
Theory of Action

About this chapter

The analysis of empirical examples at the beginning of this thesis (Chapter 2) provided context and familiarity to discuss practice. However, at the point in time when I framed my Case Study project (2017-2019), much of this context was not available. This chapter traces the steps I took to formulate my Theory of Action, underpinned by discussion of practice literature. For instance, to establish key process activities that I anticipated would be needed during the case study, I compare seventeen relevant process frameworks. To cohere relevant process activities into an approach, I compare five different formats. To guide how I engage with farmers and participants, I draw from the literature to establish protocols for collaboration. Anticipating the need to evaluate my work at the end of the Case Study, I draw factors for testing from the literature and practice.

5.1 Process as activities

Why an analysis of process?

The history of design is strewn with process models to communicate how design works (see Dubberly, 2005), and as design has stretched into collaborative, generative, and participatory territories, new articulations of process have been required. Despite the pains designers take to explain process, I have heard people describe the experience as confusing, wandering around in loops, retracing steps, getting lost, and even feeling like there was no process at all—until it all made sense—as represented by another famous depiction of design process as a scribble which eventually becomes a directional line (Onø Design, n.d.) (Figure 19).

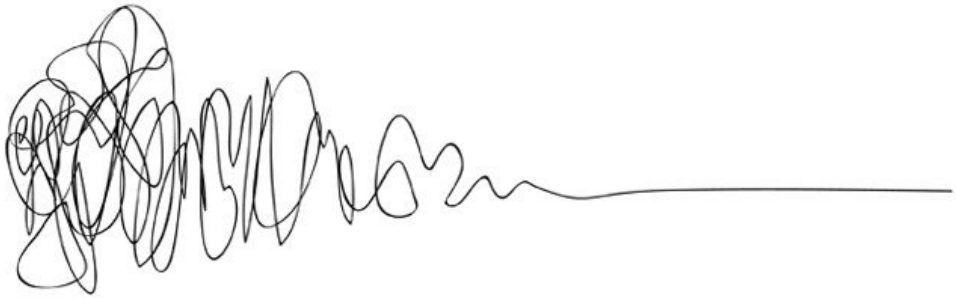


Figure 19. Design process (Source: Onø Design, n.d.)

For my Case Study project an analysis of relevant processes was needed to help establish my own project process because, as mentioned in Chapter 2, the phases set out in 'emerging Transition Design approach (Irwin, 2018) did not work for my context or situation. The phases outlined by Irwin are re-framing present and future, designing interventions, and waiting and observing.

To highlight why the phases set out by Irwin (2018) did not work for my project, it is helpful to take a brief look into the first of those phases. Irwin names the first step of 're-framing present and future' as 'mapping the problem in the present', during which

> *stakeholder groups collaborate to visually map the wicked problem, identifying as many relationships within it as possible (p. 972).*

At the start of my Case Study project, I had no relationships with stakeholders so could not bring them together, I was in no position to convene and facilitate workshops of any kind in agriculture, and it was unlikely that many of the stakeholders would be willing to collaborate at that point. It wasn't entirely agreed among stakeholders that there was a problem, in fact, some of the participants in my initial round of scoping interviews (2018-9) remarked that I had named the problem for them: achieving increased uptake of Regenerative Agriculture was a problem of *transition*. And, unlike the community surrounding the use of water in Ojai, CA, relevant stakeholders were spread across the state of NSW which, Google reports, is 1.15 times larger than the US state of Texas.

What I *could* do from the very start, however, was work with the intentions that Irwin (2018) names for this phase. The intentions for problem mapping include, for instance, enabling stakeholders to better understand the complexity as well as one another's perspectives, develop a shared definition of the problem, engage collaboratively so that they might transcend differences, and develop a visual artefact (the problem map) that can be used as a touchpoint for further iteration,

evaluation, and awareness building (p. 972). My project could work to cultivate these intentions as conditions for collaboration toward transition.

To work on mapping, however, I was in deep need of discovery, or immersion in the context, and relationship building to be able to operate in the context. It also felt important to gather diverse individual perspectives on the (newly defined) problem before trying to bring those perspectives together. If I was gathering perspectives, I would also need to validate that I had understood those perspectives. I reasoned that I could undertake a series of (further) scoping and discovery interviews, as discussed in Chapter 6, and that the process of engaging participants to validate how I had reflected their perspectives would kick start the process of building a shared definition of the system and therefore the problem. Together these activities could help me start to build relationships and would provide a foundation for 're-framing present and future' with anyone who elected to participate.

Although common to design-based approaches (i.e., via discovery, immersion in context, and validation), none of the activities I required were reflected in the three phases set out by Irwin (2018). I speculated that this up-front work had been done in Ojai (Irwin and Kossoff 2017a and 2017b) but was not captured in the three phases.

But, through my professional practice, I had also come to the perspective that design-based approaches are not enough as well. As the analysis in this section will show, design processes often do not specify dedicated phases for relationship building and time elapsed for *initiating* work, making connections, and forging collaborations. Not only can this omission create a mismatch between timing expectations and realities, the lack of dedicated time for up-front relationship building and initiative co-design is particularly resented among stakeholders from First Nations communities and vulnerable groups. This process problem is a manifestation of deeper paradigms (for instance capitalist, extractivist, and colonialist paradigms) (Drew, Robinson and Winhall, 2021), can be very damaging to relationships, and serves to perpetuate these underlying paradigms even when the work is intended to deliver social benefit.

Other disciplines have learned to plan for initiating work. For instance, I have encountered processes that specified phases for 'initiating action' in place-based collective action initiatives and described in Collective Impact literature (for instance, Hanleybrown, Kania and Kramer, 2012). I will discuss options like these further in this section.

If we are to materialize more pluriversal visions (multiple cultures, worldviews, and ontologies within our shared future) *through* practice and embody new mindsets, postures, and worldviews

in practice, we need Transition Design processes to reflect the full scope of activities needed, help embed the relational way of working, and operate from a different philosophy and worldview. Not only should Transition Design processes (approaches) provision for relational ways of working, but they also should help facilitate ontological openness, as described in Chapter 1. In the analysis of empirical examples, cases that featured activities for grounding and embodied practice give clues as to how a different ontology, worldview, and way of relating can be embedded in practices, activities, and process (for examples see Kashyap, Svejkar and Tonkinwise, 2024, Culén, 2023, and Samuels-Ballantyne, 2020).

Selecting appropriate process examples for comparison

This discussion compares a sampling of generative process approaches selected from Transition Design and a range of adjacent disciplines. In this analysis, process examples are defined and situated in context, and then compared by their process components (activities named) and key process distinctions like non-linearity, sequencing, etc. The analysis is summarized in Table 4.

Of the seventeen examples, some have design-related origins—including two examples from Transition Design, six from various design disciplines, and one from entrepreneurship. Among the other examples, origins include Complexity Theory, community development, and Aboriginal cultural practices. As discussed in Chapter 2, the quality of enabling 'generative' practice is an essential quality for an approach appropriate to Transition Design, and so all selected processes have a 'generative' objective. As noted earlier in this section, there is a need for process to cover the full range of activities of Transition Design, embed relational ways of working, help facilitate ontological openness, and be flexible for adaptation. Processes meeting these criteria have been selected for analysis.

The seventeen processes compared here include: Design Thinking from the Stanford dSchool (2012), Human-Centered Design from IDEO (2015), Lean Startup from Ries (2011), the Double Diamond from the UK Design Council (Drew, 2019), Strategic Design (Miller, 2016), the Thinking Wave and AcdB from Second Road (Jenkins, 2015), Action Research (Swann, 2002), Place-based Collective Impact (SCA, 2019), the Collaborative Change Cycle from Collaboration for Impact (n.d.), Protocols for Respect from Yunkaporta (2019), Theory U from Scharmer (2009), the Cynefin Framework from Snowden and Boone (2007), Frame Innovation from Dorst (2015), the Transition Management Cycle from Loorbach (2007), Transition Design themes (Sides et al., 2022), and the Transition Design Approach (Irwin, 2018).

Seventeen process examples—brief definitions

Design Thinking Process (Stanford dSchool)

The concept of 'Design Thinking' captured the imagination of business in the mid- to late-2000s. Online technology was transforming (but not necessarily improving) business and the basis of competition. Organizations were looking for ways to stop frustrating customers and to survive financial, technological, and market disruption. Publications like Roger Martin's 2009 book, 'The Design of Business: Why Design Thinking is the Next Competitive Advantage,' Dev Patnaik's 2009 book, 'Wired to Care: how companies prosper when they create widespread empathy,' and Diller, Shedroff, and Rhea's 2006 book, 'Making Meaning: How Successful Businesses Deliver Meaningful Customer Experiences,' grabbed attention, pointing newly minted 'design thinkers' like myself and businesses at the need to 1) empathize with customers, 2) develop positive experiences, and 3) deliver disruptive innovation. Design Thinking was embraced as a tool for business innovation and competition—and as an approach for solving the world's complex challenges. The idea that 'design thinking can save the world' was much touted—and much derided—for its hubris.

To explain Design Thinking and help equip new designers and businesses alike, organizations like IDEO and the Stanford dSchool shared resources like toolkits.

The original Stanford dSchool (2012) Design Thinking process is presented as five successive but non-linear modes (rather than phases) for problem solving and innovation. Iteration is called for at each step and in multiple cycles of the five modes. The modes identified in the process are: Empathize, Define, Ideate, Prototype, and Test (Figure 20).

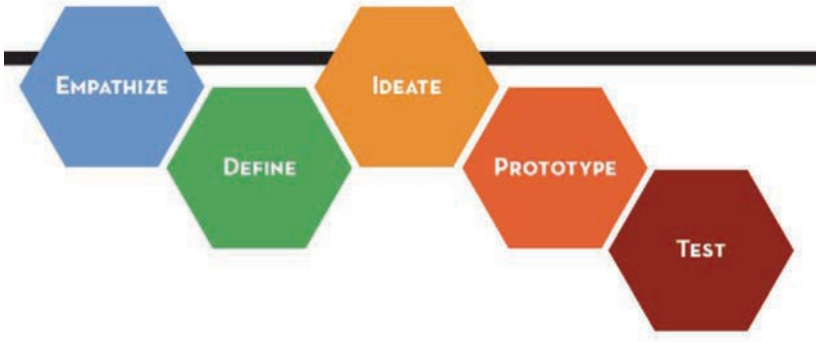


Figure 20. Design Thinking Process (Stanford dSchool, 2012, p. 6)

Human-Centered Design Process (HCD) (IDEO 2015)

Stepping back a little, IDEO was one of the first design firms in the United States to talk about their work in Design Thinking, which Tim Brown (2009) wrote about in 'Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation.' IDEO was proactive in making toolkits available, engaging people in global design challenges, and using design processes for community development.

Although they were credited with the term 'Design Thinking', IDEO (and others) began to differentiate Human-Centered design from Design Thinking, ascribing Design Thinking to business innovation. The concept of 'human-centered design' sought to center the voices and perspectives of people involved in, impacted by, consuming, and/or benefiting from services, products, etc.

IDEO published a "first-of-its-kind" toolkit that "laid out how and why human-centered design can impact the social sector" (2009, first paragraph). They articulated the process as 'hear, create, deliver' (HCD), with the same acronym as human-centered design (Figure 21).

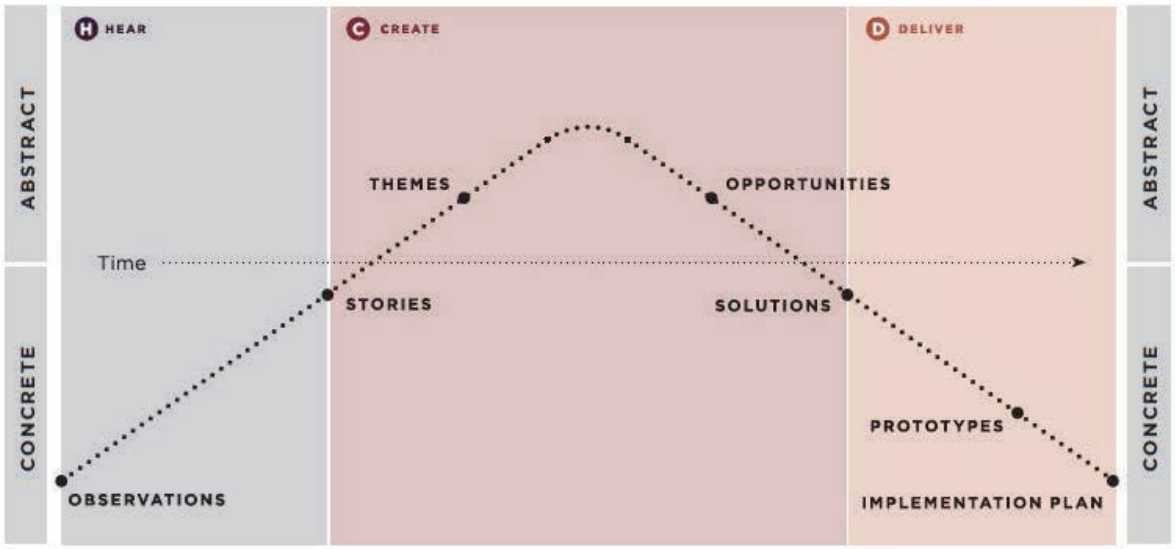


Figure 21. Human-centered design process (IDEO, 2009, p. 11)

In 2015, IDEO launched their second-generation toolkit, 'The Field Guide to Human-Centered Design'. The Field Guide features a new iteration of the process, stepped out in "three main phases: Inspiration, Ideation, and Implementation" (Figure 22), stressing that HCD "isn't a perfectly linear process" (p. 11).



Figure 22. Inspiration, Ideation, and Implementation process for human-centered design (IDEO, 2015, p. 11)

Lean Startup (Ries)

Against the backdrop of a growing technology sector in Silicon Valley in the mid- to late 2000s, Eric Ries (2011) found inspiration in lean manufacturing, pioneered in Japan with the Toyota Production System, and brought rapid scientific experimentation and validated learning into the world of technology startups to better understand and meet customer needs (p. 6). Ries describes the Lean Startup process as a three-step feedback loop aimed at minimizing 'TOTAL time through the loop' and learning over successive iterations (2011, p. 75). The steps are Build (e.g., product), Measure (e.g., data), and Learn (to generate new insights and ideas) (Figure 23).

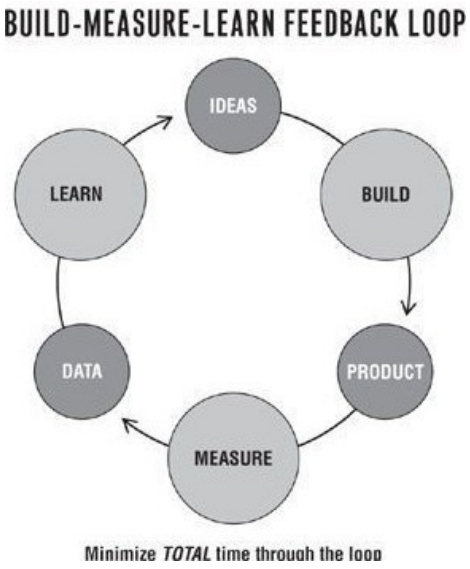


Figure 23. Lean Startup (Ries, 2011, p. 75)

Although Lean Startup and Human Centered Design do not have the same processes, the pattern of building to test and learn in rapid iterations is shared. Ries emphasizes the importance of beginning with low-fidelity prototypes—Ries uses the term 'minimum viable product'—and working in quick sprints to test and iterate, pivoting if needed. Full functionality and complexity are developed over time, with evidence that consumer needs are met.

The process offered by Ries has an important distinction from design processes: unlike design-based approaches, it doesn't start with empathy, discovery, or inspiration activities, it starts with 'build'. This is a deliberate choice. In entrepreneurship, where an innovator's idea may be the starting mark and the clock ticks down time to market against resource spend, an emphasis on rapid iterations helps avoid creating something that customers don't want.

That same concern is shared by human-centered design, but human-centered design projects tend to germinate from customer dissatisfaction and unmet needs. Rather than jumping directly to a solution, design approaches emphasize trying to understand the situation first. By focusing on the perspective of customers, users, or beneficiaries and then developing and testing ideas in quick iterations, human-centered approaches also help designers and organizations avoid investing in solutions that don't meet the need.

Depending on context, one approach may be more valid than the other.

Unlike many design processes displayed in linear form, Ries uses a cycle. This has multiple benefits. Process as cycle emphasizes working in quick iterations and helps explains the repetition of some activities in design / innovation.

Double Diamond (Design Council UK)

Perhaps the first published articulation of the design process in this sampling, the Double Diamond was developed at the Design Council UK by a group "led by Richard Eisermann, including Clive Grinyer, Jennie Winhall, Gill Wildman, Anna White, Chris Vanstone, Jonathan Ball, Andrea Siodmok and others" who were "trying to understand how the design process works" (Drew, 2019, paragraph 1). From 2002-2004 they conducted their own design research to observe and learn what designers did so that they could apply the design process to new challenges. The double diamond was designed as a problem-solving tool "when service design was emerging as a clearer practice, developed out of product design and graphic/UX design" (paragraph 1, paragraph 6).

The double diamond was articulated as two successive diverge-converge movements, two diamonds side-by-side. It has four phases—discover, define, develop, and deliver (Figure 24). Each half of a diamond is a phase, with discover and define in the first diverge-converge movement and develop and deliver in the second.

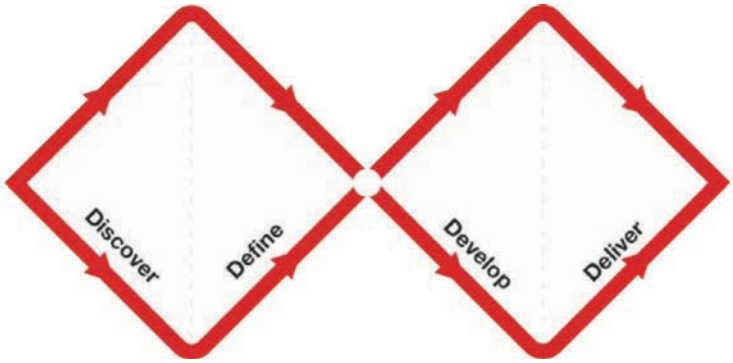


Figure 24. Double Diamond, Design Council UK

Accessed from https://www.designcouncil.org.uk/our-resources/the-double-diamond/

Like others, Drew (2019) answers critiques by emphasizing that the process is non-linear, fluid ('It's not linear' section, paragraph 1). Drew notes that discovery isn't always the first step, for instance, "Digital design starts making straight away and uses prototypes (traditionally used in the second diamond) as a research method to find out more about a problem (in the first diamond)", and that feedback can lead to cycling through phases multiple times. This echoes points made by Ries (2011). Drew highlights the significance of divergent and convergent thinking, explaining that the "'creative problem solving community', which has been around from the 1950s…argues for a process of multiple rounds of 'deferral of judgement'".

Fifteen years later, Drew observes that "Since then, design is being asked to solve more complex, multi-faceted challenges and those challenges themselves have become trickier" (paragraph 6). To operate in the context of more complex challenges, Drew notes that "there are other models and frameworks that we can use alongside the Double Diamond", including the UK Design Council's 'Framework for Innovation', which adds challenge, outcome, engagement, and leadership, cycles/feedback loops, design principles, and a methods bank (Figure 25).

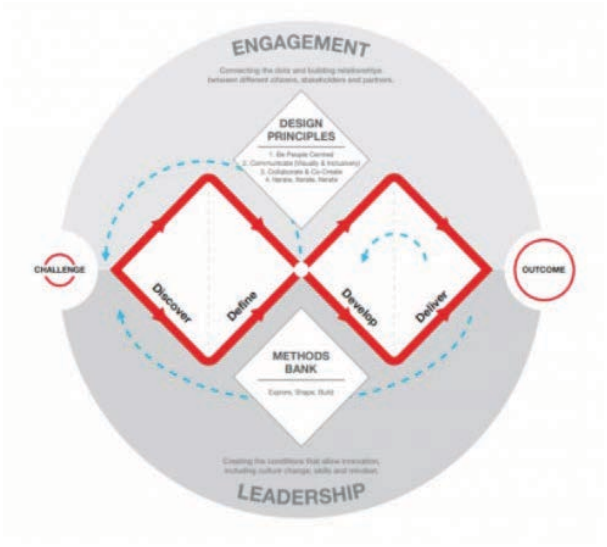


Figure 25. Framework for Innovation, Design Council UK (Drew, 2019)

Strategic Design (Miller)

In 2016, I contributed a chapter on methods to a book intended to serve as a textbook for a Strategic Design MBA and edited by N.W. Nixon, 'Strategic Design Thinking: Innovation in Products, Services, Experiences, and Beyond' (Miller). Drawing on some of the ideas in Lean Startup process and incorporating my own experiences and learning, I sought to express the unique, iterative, and fluid rhythm of design. I visualized the process as a cycle that begins with a question, and involves multiple loops of learning through discover, create, and test activities to identify insight that leads to new action (Figure 26). I had not seen Hugh Dubberly's (n.d.) compendium of design processes, for instance the version by Alice Agogino (p. 50).

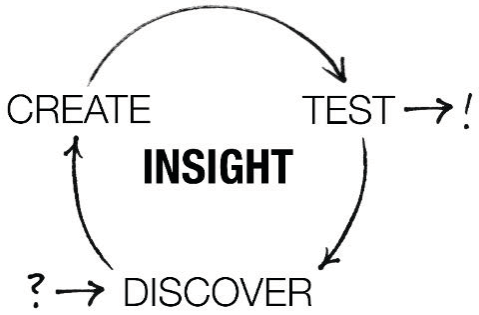


Figure 26. Strategic Design (Miller, 2016, p. 117).

The role of feedback and learning in iterations, of cycling through design activities multiple times, was core to this process. I acknowledged that discover wasn't the only potential starting point,

that create and even test activities—like evaluation processes—could be a starting point for design processes. This cycle was intended to be used with other frameworks and embedded within broader project and organizational processes, rather than represent an end-to-end project process.

I have encountered feedback that processes presented as cycles may be anxiety-inducing for clients. The conundrum of communicating design remains: Design processes are cyclical, iterative, and fluid.

The 'Thinking Wave' and 'AcdB' method for strategic conversation (Second Road)

Second Road is a Strategic Innovation consultancy founded by Tony Golsby-Smith. Second Road pioneered the use of human-centered design methods, notably in combination with methods for dialogue and facilitated conversations, in service design and strategic innovation in Australia. I first encountered Second Road's processes and methodologies as a client at Suncorp, an Australian bank and insurer. Second Road worked with two different methods of note for this process comparison: the 'Thinking Wave', Second Road's version of a 'customer-centered design' process (Figure 27), and the 'AcdB' strategic conversation method (Figure 28).

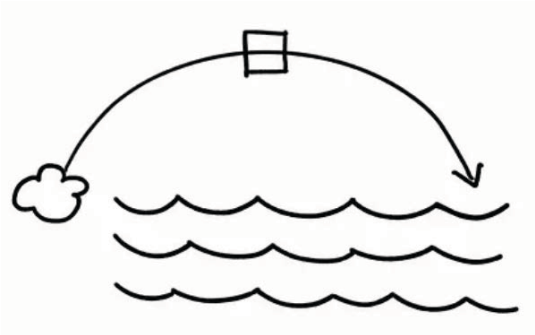


Figure 27. The Thinking Wave, Second Road (Jenkins, 2015)

When I encountered the 'Thinking Wave' at Suncorp, we used a version for design-innovation that had five phases: Problem Finding, Discovery, Invention, Prototyping, Implementation. Refer to the Second Road blog on Medium for references (Jenkins, 2015).

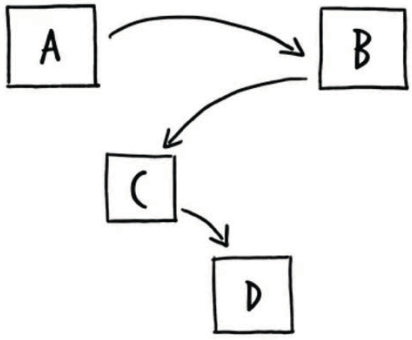


Figure 28. The AcdB Strategic Conversation Method, Second Road (Jenkins, 2015)

AcdB Strategic Conversations are used to support cross-functional groups to develop organizational strategies e.g., participatory strategy. The methodology brings together domains of strategy, design, dialogue, and philosophy through a structured, facilitated conversation. The strategy component of Strategic Conversations ensures that dialogue is grounded in context, establishes a vision to inspire teams, and anticipates implementation (planning). The design component ensures that there is time, space, and creativity applied to the challenge of identifying options and best pathways to bridge the gap between current state and future state. The discipline of dialogue and facilitated conversation, mixed with generative design tools and activities, is intended to help equalize power and create an environment in which people can surface and discuss (even debate) the situation and their genuine hopes, and co-create a shared vision for their future, including ideas about the way forward. Emphasis is placed on the importance of appealing to people's sense of logos (logic), pathos (emotion and empathy), and ethos (sense of ethics), from the philosophy of Aristotle. The four spaces of an AcdB Strategic Conversation are: A) Where are we now? B) Where do we want to be? C) How do we get there? D) What steps do we need to take? (Jenkins, 2015)

A case study of the AcdB methodology from Second Road's work with Suncorp can be found in 'Solving Problems with Design Thinking: 10 Stories of What Works' by Liedtka, King, and Bennett (2013, p. 35-56).

Action Research

As discussed in Chapter 3, this research is partly framed as Action Research, a form of researching by doing together. Action Research specifies four major moments, a 'spiral of cycles' of planning, acting, observing, and reflecting, in which plan includes problem analysis and a strategic plan,

and the process results in a systematic and documented study as well as change (Swann quoting Zuber-Skerritt, 2002, p. 55) (Figure 29).

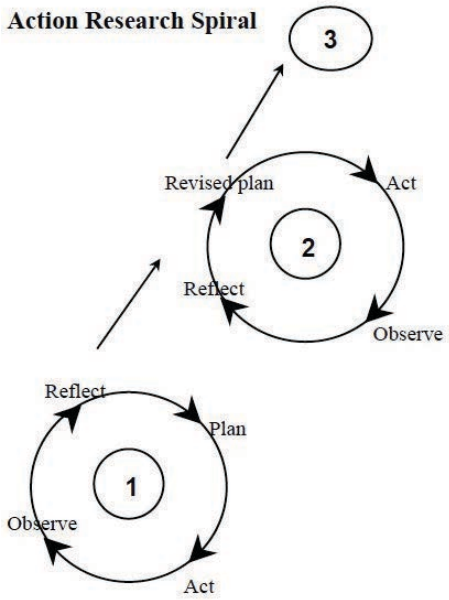


Figure 29. The Spiral of Action Research Cycles (Zuber-Skerritt, 2001)

Place-based Collective Impact Framework for Practice

Collective Impact was first outlined in an article by Kania and Kramer in 2011 as a synthesis of successful community development practice. It is a format commonly used/adapted for collective action. The description of place-based Collective Impact used here is based on an unpublished report developed for Save the Children Australia (SCA) by The Australian Centre for Social Innovation (2019).

Collective Impact is known for five foundational conditions that contribute to the likelihood of an initiative effecting change, which I share here slightly modified from the original five conditions (Kania and Kramer, 2011): a common agenda, shared measurement, mutually reinforcing activities, authentic community engagement and dedicated backbone support (SCA, 2019). Place-based Collective Impact (pbCI) is an approach to community development that brings Collective Impact together with place-based initiatives. The unpublished SCA report identified seven distinct phases for pbCI initiatives based on a literature review and analysis of case studies: Developing pre-conditions, Initiating action and convening, Organizing for impact, Experimenting and evolving (coordinated) actions, Renewal by learning, adapting and (potentially) growing, and Sustaining action and impact (Figure 30). This representation of process is informed by

Hanleybrown et al. (2010, 'Phases of Collective Impact') and the Harwood Group (1999, pp. 5-9, 'Five Stages of Community Life').

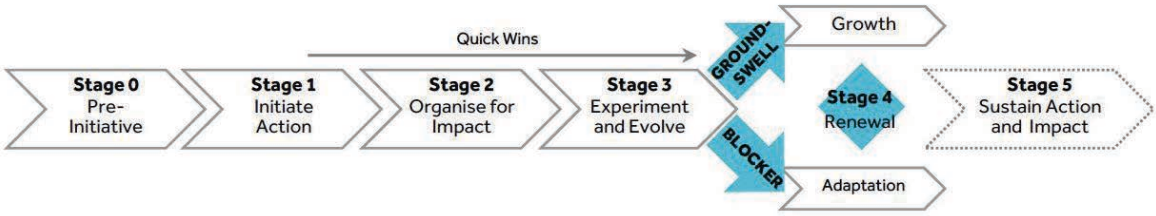


Figure 30. Place-based Collective Impact process (Source: SCA, 2019)

A 'good fit' for context is one of the defining characteristics of place-based initiatives identified in the SCA report. In the case of working with communities and/or stakeholder groups, fit for context could mean everything from adapting language, pace, building capability and capacity to participate, redesigning how activities are approached, rethinking expectations of what can be/should be achieved, and more. Processes require attention to sequence and pacing so that relationships can develop, particularly in the early stages. The lower the trust among people involved in the process, the slower you go. Depending on the situation, a mix of formal and informal interactions may be needed, whilst following cultural protocols.

As trust develops and mutual goals are identified, the process may move more quickly, if communications remain open and trust is not taken for granted. The principle operating here is that engaging people requires a relational way of working. Because relationships cannot be assumed or taken for granted, pbCI processes stress a phase for developing preconditions, including identifying influential champion(s), obtaining adequate financial resources, building urgency for change, and working where there is momentum (Hanleybrown, Kania and Kramer, 2012), as well as a phase dedicated to initiation and convening (SCA, 2019).

Transition Design approaches situated in social contexts can draw from these principles: a need to fit process to context, (Irwin, Tonkinwise and Kossoff discuss, 2015b; Juri et al., 2021); a relational way of working (Escobar, 2017); and the importance of time dedicated at the start of an initiative to assessing and fostering pre-conditions, initiating relationships and processes, and convening collaborations.

Collaborative Change Cycle (Collaboration for Impact)

Another process that builds on Collective Impact's approach is Collaboration for Impact's (CFI, n.d.) 'Collaborative Change Cycle'. The Collaborative Change Cycle includes five interlinked

phases: the readiness runway, building foundations for change, creating a shared vision, scaling up for systems change, and achieving transformation (Figure 31).



Figure 31. Collaborative Change Cycle (Collaboration for Impact, n.d.)

The Collaborative Change Cycle is notable here for its emphasis on Initiate activities. It reserves two phases, the readiness runway and building the foundations for change, for Initiating and Convening. The first phase, 'Readiness Runway' involves "cultivating urgency for change, having conversations and dialogue about the need for working differently, forming relationships, and building trust" (Readiness Runway Overview). The second phase 'Building the Foundations', involves "becoming more open to working together, building a shared understanding of the system, brokering agreement that business as usual is not enough to make large scale impact, and partnering with community as the foundation for change" (Building the Foundations Overview). In design language, the second phase involves both 'Initiating and Convening' and 'Discovery' or 'Situating' activities.

Collaboration for Impact also have a practice called 'Deep Collaboration', which focuses on Indigenous-led collaboration, and embedding approaches informed by culture into their work.

Protocols for Respect (Yunkaporta)

Although transition Design framers counsel respect for and learning from Indigenous wisdom (Irwin, Tonkinwise and Kossoff, 2015b, p. 17), it is not clear *how* to engage with Indigenous people, respect their wisdom, act in solidarity, and work in partnership. Building on the discussion above regarding collective action initiatives, it is firstly critical to allow time for Initiating and Convening activities. But that is just a start—it is one thing to reserve extra time up front and another thing to

work in culturally respectful ways. As a discipline, there is opportunity for Transition Design to establish protocols for working with diverse cultures, including Indigenous peoples.

There is an unbecoming history of research and programs in Australia and other colonized places that Transition Designers should be aware of. Linda Tuhiwai Smith (2012) describes this history and its significance in the introductory paragraphs of the book, 'Decolonising Methodologies: Research and Indigenous People.' I will quote Smith's outline of the history of research "from the vantage point of the colonized" at length for context:

> *From the vantage point of the colonized, a position from which I write, and choose to privilege, the term 'research' is inextricably linked to European imperialism and colonialism. The word itself, 'research', is probably one of the dirtiest words in the indigenous world's vocabulary. When mentioned in many indigenous contexts, it stirs up silence, it conjures up bad memories, it raises a smile that is knowing and distrustful. It is so powerful that indigenous people even write poetry about research. The ways in which scientific research is implicated in the worst excesses of colonialism remains a powerful remembered history for many of the world's colonized peoples. It is a history that still offends the deepest sense of our humanity. Just knowing that someone measured our 'faculties' by filling the skulls of our ancestors with millet seeds and compared the amount of millet seed to the capacity for mental thought offends our sense of who and what we are. It galls us that Western researchers and intellectuals can assume to know all that is possible to know of us, on the basis of their belief encounters with some of us. It appalls [sic] us that the West can desire, extract and claim ownership of our ways of knowing, our imagery, the things we create and produce, and then simultaneously reject the people who created and developed those ideas and seek to deny them further opportunities to be creators of their own culture and own nations. It angers us when practices linked to the last century, and the centuries before that, are still employed to deny the validity of indigenous peoples' claim to existence, to land and territories, to the right of self-determination, to the survival of our languages and forms of cultural knowledge, to our natural resources and systems for living within our environments.*

> *This collective memory of imperialism has been perpetuated through the ways in which knowledge about indigenous peoples was collected, classified and then represented in various ways back to the West, and then, through the eyes of the West, back to those who have been colonized…*
>
> *While it is more typical (with the exception of feminist research) to write about research within the framing of a specific scientific or disciplinary approach, it is surely difficult to discuss* research methodology *and* indigenous peoples *together, in the same breath, without having an analysis of imperialism, without understanding the complex ways in which the pursuit of knowledge is deeply embedded in the multiple layers of imperial and colonial practices (p. 1-2).*

In undertaking Transition Design, people may seek to be allies to Indigenous struggles, work in solidarity with Indigenous peoples, and build collaborative partnerships. Allyship, defined as acts of solidarity with Indigenous perspectives and struggles, is fraught with social, historical, emotional, and relational complexity (et al.) and is frustrated by the difficulty non-Indigenous peoples have in recognizing their own privilege, worldviews, and colonizing behaviors, and in identifying constructive behaviors and alternative actions (Land, 2015). In 'Decolonising Solidarity: Dilemmas and Directions for Supporters of Indigenous Struggles', Clare Land (2015) builds on the work of Smith, unpacking the difficulty of allyship—for lack of a better term—with Indigenous peoples as a non-Indigenous person, and "[provides] an urgently needed new framework for action by non-Indigenous people in support of Indigenous struggles" (p. 2-3).

To articulate the difficulties of allyship and solidarity, Land speaks to the work and experiences of Gary Foley, of the Gumbaynggirr Nation, who "gets asked a lot by fellow Kooris, 'Why does it often seem that some of our best white friends behave like some of our worst enemies?'" (p. 7).

Land cites the work of Jennifer Margaret, an activist and researcher who "has found…certain characteristics"—patterns fraught with pain—"of ally relationships in North America resonate with those in Aotearoa/New Zealand" and in Australia (p. 15). Land charts these fraught patterns in allyship as identified by Margaret: "Coalition as a microcosm of colonial relationships"; "Coalition as a site of learning and transformation…[generating] significant learning for those involved, particularly non-indigenous people"; and "Coalition as a site of pain" (p. 15).

Into this history of harm and pain encountered through colonialism as well as acts of solidarity, in the last chapter of Sand Talk, Tyson Yunkaporta (2019) offers a “process for working with Indigenous Knowledge in sustainable ways” (p. 273).

Originating in Aboriginal protocols of showing respect for culture and “sharing or producing knowledge on Country”, the sequence of activities identified by Yunkaporta are Respect [spirit], Connect [heart], Reflect [head], and Direct [hands] (p. 274). This process is referred to as ‘Protocols for Respect’ in this research.



Figure 32. Sand Talk, Table of Contents (Yunkaporta, 2019, p. 17)

Yunkaporta shares how research approaches can run counter to Indigenous protocols,

> *We had our own personal metaphors for describing this process of induction. I referred to it as spirit, heart, head and hands. Mumma Doris knew it as Respect, Connect, Reflect, Direct. She insisted on that order. She also identified that non-Aboriginal people seemed to work through the same steps but in reverse.*
>
> *She has observed interventions and programs imposed on her community for over half a century, noticing that they always begin with the last step—Direct. Government agents come into the community with a plan for change and they direct activities towards this change immediately. When it all fails, they go backwards to the next step, Reflect. They gather data and measure outcomes and try to figure out what went wrong. Then they realize they didn’t form relationships with community, so belatedly go to the next step, Connect. Through these relationships they discover the final step (which should have been the first), finding a profound respect for members of the community they ruined. They cry*

> *as they say farewell and return to the city, calling, 'Thank you, I have learnt so much from you!'*
>
> *Invert that process and you'll have something approximating an appropriate way of coming to Indigenous Knowledge and working towards sustainable solutions. (p. 274-275).*

Some of the implications of this history are that any Transition Design approach, community development initiative, or place-based project etc. that seeks to engage Aboriginal and Torres Strait Islander peoples will be more likely to progress where the approach works for Aboriginal and Torres Strait Islander peoples, according to their protocols, and does not perpetuate racism, bias, the harms that have already occurred, or the structural inequities and injustices already present. This emphasizes the role of allocating time and space for relationship building, initiation, and convening in Transition Design initiatives. It speaks to Action Research principles of building agency, capacity, and leadership, supporting self-determined action and participant-led projects. And it calls upon Transition Designers to do their own work relevant to their personal histories and identity, to grapple with the history of harm done, examine any forms of privilege they may inhabit, and develop their own ways of navigating racism, bias, allyship, solidarity, reconciliation, and (de)colonization.

I am on my own journey with cultural respect and solidarity. I started my PhD in 2017, six months after I began working in social innovation. As a designer coming from corporate contexts, at the time I had no knowledge of the history of research, nor did I identify as a researcher. In joining social innovation projects that involved Aboriginal and Torres Strait Islander peoples, I quickly found out that our work was understood as research whether I identified as a researcher or not, that our work and actions were viewed through the lens of that history, and we needed to find ways to enact allyship. The tension between Aboriginal relational ways of working and our government-funded, timeline-driven ways of working was clear from the start. We took measures to address these tensions in our plans, though we could never fully resolve these tensions.

Being from the American South and growing up with relationships where I had tried to act as an ally to African American people, I had experienced the complexities of allyship—but that experience didn't translate to the Australian context. I had no knowledge of the differences in how colonization had played out in Australia versus America, no knowledge of the many cultures and their cultural protocols, and no understanding of how act in solidarity with Aboriginal and Torres

Strait Islander people. The deeper history of harms, how that shaped how we worked together, and cultural respect all took longer for me to grasp—and there is still much I do not understand.

I am actively seeking to learn about Indigenous histories, worldviews, and protocols, while trying to avoid fetishizing Indigenous cultures, appropriating anything, and being a consumer of traditional wisdom. It's an ongoing journey for me.

Theory U (Scharmer)

Spiritual worldviews don't tend to show up in design processes and plans for collaborative initiatives but are foregrounded in many Indigenous cultures, whose worldviews are often based on the connection between all things, the alive-ness of all matter (what other cultures may denote as living and non-living), the rights of all beings (including rivers and forests, see Barcham, 2022), and protocols, behaviors, and rituals that honor and respect their deep connection to Spirit/Source, country, and culture. One group process that deliberately works with Source, the connection of all things, the wisdom around us, and how they manifest through self is Theory U (Scharmer, 2009).

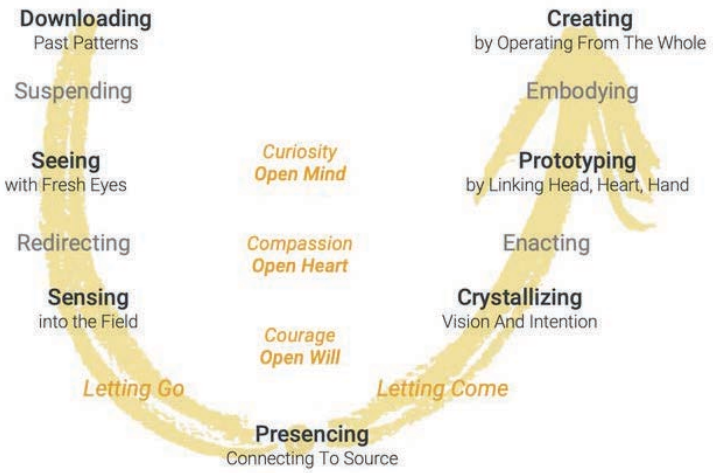


Figure 33. Theory U (Scharmer, 2009)
Accessed from https://www.u-school.org/theory-u

Theory U is a social process for shifting the structure of our attention to engage in transformational systems change. Scharmer emphasizes movements (rather than phases) as collaborative experiences in a sequence of Co-Initiating, Co-Sensing, Co-Presencing, Co-Creating, and Co-Evolving (Figure 33). Scharmer draws from methods that incorporate "phenomenology, dialogue, and collaborative Action Research" (p. 19). Theory U is the only process compared here

that reflects thinking from Action Research and design, social change processes, Indigenous worldviews, Transition Theory, and personal and societal transformation.

Like other design processes cited here, Scharmer holds lightly to the concept of sequencing. Scharmer cites holographic theory and the metaphor of 'dancing' to explain how in practicality each phase's activities is important unto itself whilst the capacity for all activities is always present, with the potential to be fluidly, seamlessly enacted together in one moment, echoing Schön's 'reflection-in-action' (p. 43-44).

Theory U—the 'bottom of the U'—is anchored in a concept called 'co-presencing', where 'presencing' is a "blending of the words 'presence' and 'sensing'" (p. 8). Presencing is the shared and individual experience of '[retreating] and [reflecting], [allowing] inner knowledge to emerge; [going] to the place of individual and collective stillness, [opening] up to the deeper source of knowing, and *[connecting] to the future that wants to emerge through you"* (p. 18-19). Like the Transition Theory models discussed earlier in this chapter, Theory U finds elements of the future present today. Echoing Indigenous worldviews and practices discussed in Yunkaporta (2019), it speaks to connection with Spirit/Source and all beings.

Theory U is one of the few processes compared here (even amongst the design-specific processes) that calls out prototyping specifically, as well as an 'ecosystem' of 'innovation initiatives', which are also called for in the Transition Design approach. In co-creating, Scharmer (2009) challenges us to develop "strategic microcosms" (p. 244): to "build landing strips of the future by prototyping living microcosms in order *to explore the future by doing*" (p. 18). In co-evolving, Scharmer pushes for us to "co-develop a larger innovation ecosystem and hold the space that connects people across boundaries" (p. 19). These "innovation ecosystems" may include "cross-sector innovation initiatives" (p. 19, 348).

It is significant to this research that Scharmer describes the bottom of the U process as 'regenerating' (Scharmer. 2009, p. 30) and emphasizes together with others (Schön, 1983; Bridges, 2004; Wahl, 2016; Capra and Luisi, 2014; and Eisenstein, 2013, to name a few) the role of personal renewal as it relates to designing, transformation and sustainability transitions. Theory U discusses "the evolution of consciousness and self" (p. 16), which links it back to the philosophical underpinnings in Irwin, Tonkinwise and Kossoff (2015b) and Wahl (2016). Theory U is a process that, like a crucible, can support personal and group transformation, and this is a key concept for Transition Design, particularly in laying the groundwork for ontological openness.

Cynefin Framework (Snowden)

The Cynefin Framework (Snowden and Boone, 2007) is a model for situational diagnosis and response that helps identify context and therefore relevant courses of action. The Cynefin Framework is based on the fundamental insight that there is a different "nature of the relationship between cause and effect" in different contexts (p. 2). It is intended to help "leaders determine the prevailing operative context so that they can make appropriate choices" (p. 2, 4). The same approach or process will not work in every context and the Cynefin framework helps us orient to the condition of a system to determine a suitable course of action.

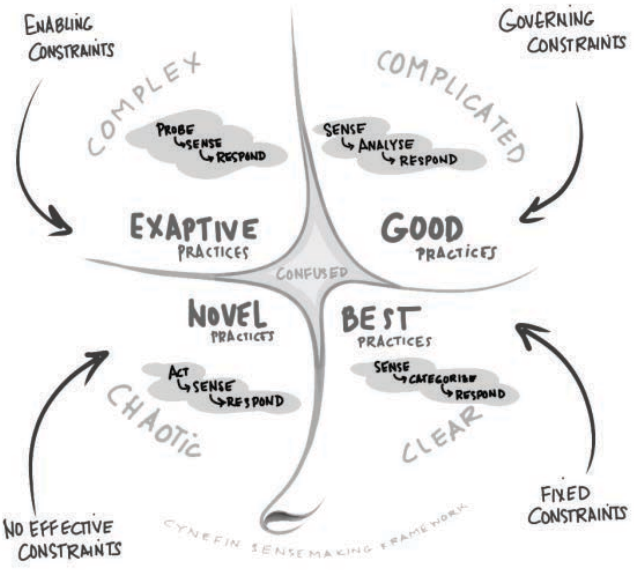


Figure 34. The Cynefin framework, Snowden
Accessed from https://thecynefin.co/about-us/about-cynefin-framework/

In the Cynefin framework, Snowden and Boone (2007) outline five system contexts—simple, complicated, complex, chaotic, and confused—and prescribes responses, 'Theories of Action,' for each context (Figure 34). Simple and complicated contexts call for straightforward responses, like categorization and direct action, or analysis and application of best practice. Complex and chaotic contexts, each with their own specific prescription, call for experimentation to navigate. The 'exploratory' mode named by Schön is related to the Cynefin framework's prescription for navigating chaotic contexts— "act, sense, and respond"—which helps to reveal the underlying structure of the situation (p. 7). For complex contexts, Snowden and Boone (2007) prescribe "probe, sense, and respond."

The difference between complex and chaotic contexts is the starting point: probe versus act. Discover, prototyping, and small-scale testing in design processes are means to "probe" in complex contexts. The prescription of "act" for chaotic contexts calls to mind the "build" starting point in Lean Startup. These distinctions reiterate the importance of developing fit-for-context Transition Design approaches. Snowden (2012) also emphasizes the need for "multiple parallel" "safe-to-fail" experiments that are "based on different and competing theories/hypotheses," which parallels to Schön's (1983) description of hypothesis testing in design, the many competing niche innovations in Geels' (2007) MLP, Scharmer's (2009) call for an innovation ecosystem, and Irwin's (2019a) ecologies of interventions.

Transition Management Cycle (Loorbach)

In his thesis, 'Transition Management: New mode of governance for sustainable development', Loorbach (2007) sets out a transition management cycle (Figure 35), which involves,

> *(i) problem structuring, establishment of the transition arena and envisioning; (ii) developing coalitions and transition agenda's (transition images and related transition paths); (iii) establishing and carrying out transition experiments and mobilizing the resulting transition networks; (iv) monitoring, evaluating and learning lessons from the transition experiments and, based on these, adjust the vision, agenda and coalitions (p. 115).*

Like others, Loorbach insists that, as a continuous and iterative process, activities intertwine, there is no fixed sequence, steps can differ in weight per cycle, and activities are carried out partially, completely, in parallel, and randomly (p. 115-6).

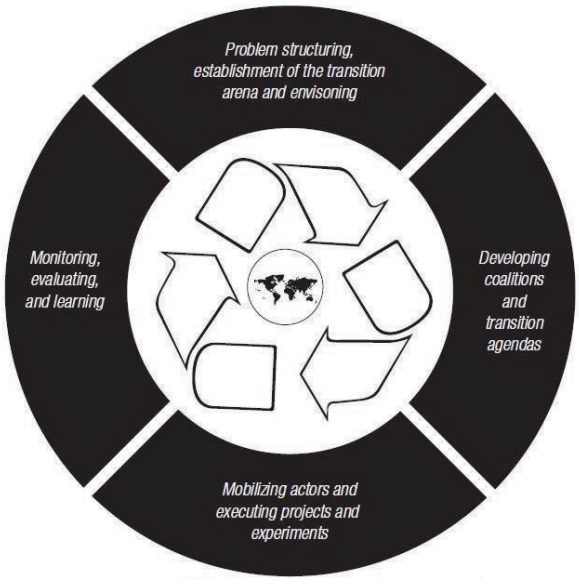


Figure 35. Transition Management Cycle (Loorbach, 2007, p. 115)

Loorbach's transition management cycle is the only model in this analysis, other than two Transition Design examples (to be discussed), specifically conceptualized for sustainability transitions. Loorbach positions Transition Management at the societal scale, calling for interventions at different levels of the system (strategic, tactical, and operational levels) particularly in terms of how they correspond to policy environments related to the transition arena (p. 116-123). Loorbach explicitly links to and seeks to build on the MLP.

Loorbach speaks to the dialectic between theory and practice, which calls to mind the role of divergence and convergence, how Schön describes reflective practice, and the concept of praxis in this research.

Frame Innovation (Dorst)

Frame Innovation, an approach to design innovation developed by Dorst (2015a and 2015b), draws upon deep insight into design. Frame Innovation has been used for complex challenges in contexts like defense, integrated living for mentally handicapped people, and public safety and crime. Dorst breaks away from common terms used to describe design processes, naming nine steps developing innovative solutions: Archaeology, Paradox, Context, Field, Themes, Frames, Futures, Transformation, and Integration (Figure 36).

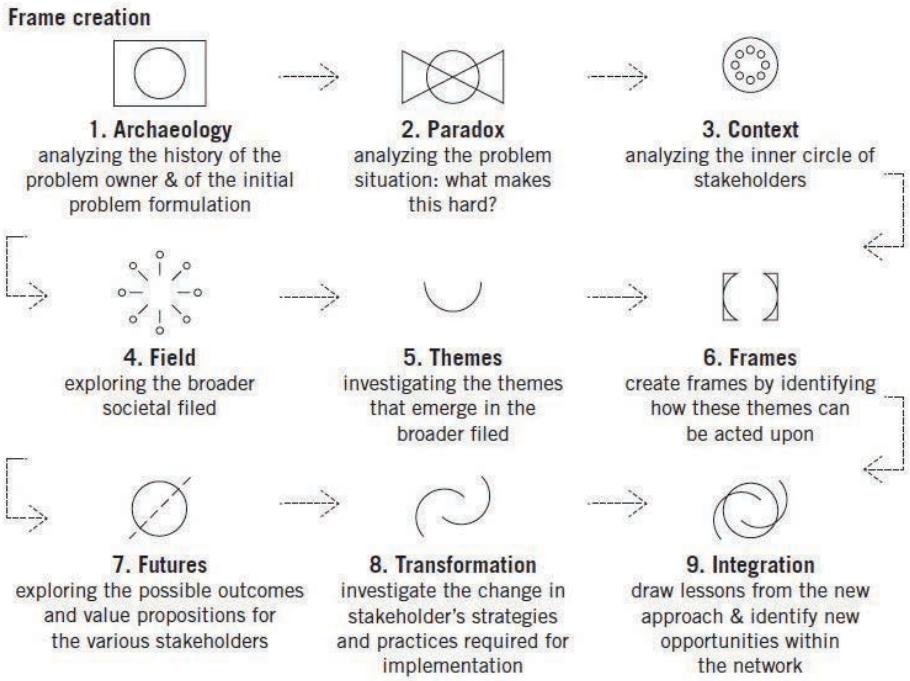


Figure 36. Frame Creation process, Dorst (Source: Willemsen and Watson, 2018)

The Frame Innovation approach contains a richness and depth of insight into process not always articulated by designers themselves. For instance, the habit of 'archaeology' situates the problem in the dynamics of organizations over time, including earlier attempts at solution (p. 74). Dorst names the practice of pinpointing 'paradox', which surfaces answers to "What makes this problem hard to solve?" and draws out complexity that inhibits solutions (p. 74-5). Dorst reveals that, surprisingly, designers then "turn away from the core paradox…and shelve the original problem" so that they might go about exploring context and ideas further (p. 76).

Most fundamentally, Dorst, like Schön, draws out the primary role of framing—which is implied but not explicitly called out in other processes compared here (discussed further in Chapter 7).

Transition Design approach (Irwin, Kossoff, and Tonkinwise)

Outlined in Chapter 2, Transition Design introduces the concept of "another kind of designing that is connected to long horizons of time and visions of sustainable futures" (Irwin, Kossoff, and Tonkinwise, 2015a, p. 3). The emerging approach includes three phases: 1) Re-framing present & Future, 2) Designing Interventions, and 3) Waiting and Observing (Irwin, 2018) (Figure 37).

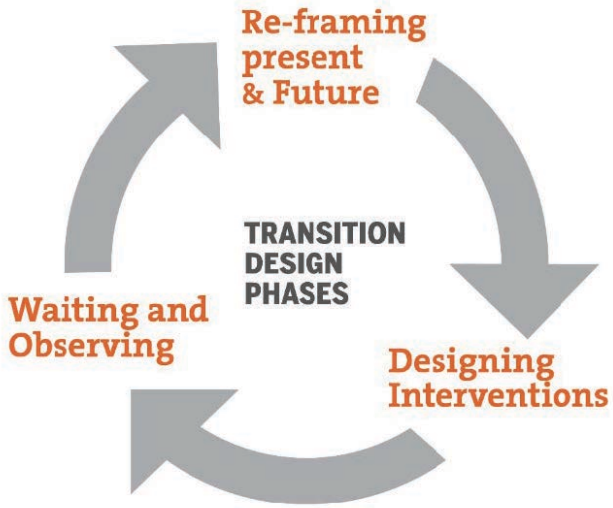


Figure 37. Transition Design phases (Irwin, 2018, p. 972)

Like the place-based Collective Impact process, Yunkaporta's Protocols for Respect, and Theory U process discussed earlier, Irwin (2018) describes the need to focus on relationships, involving all stakeholders, and collaborative/co-design ways of working to get to the heart of the social paradigms that hold the 'problematic situation' in place.

Irwin (2018) specifies that this "new, design-led approach should…enable stakeholders to arrive at a shared definition of the problem…identify stakeholder concerns, relations, expectations and

beliefs and factor them into both problem frames and designed interventions…provide a process for stakeholders to transcend their differences…[co-create] shared visions…frame wicked problems within radically large spatio-temporal contexts…provide stakeholders…with a palette of tools and methodologies useful in resolving wicked problems and seeding/catalyzing systems-level change…[and] provide a rationale for 'intervening' in complex systems and 'solutioning' over long periods of time" (p. 2) These specifications set out criteria for Transition Design approaches, whilst leaving it open to "a variety of practices and processes tailored to specific problems and contexts" within the three phases (p. 5).

So far in this comparison, the processes used for social design, community development, and transformation contexts have set us up to expect certain patterns of activities, including initiating and convening activities, respect for cultural practices, immersion in context, discovery, deep listening, sense-making, synthesis, (re)framing, futuring, visioning, developing ideas / interventions / responses, prototyping, testing, experimenting, iterating, implementation, scaling. These are also activities that appeared in the analysis of empirical cases in Chapter 2.

Of the activities we have come to expect to see through this comparison, the three-phase approach that Irwin specifies features reframing, futuring and visioning, and developing ideas / interventions / responses. It also specifies waiting and observing—which is not mentioned in any other process.

A word search of some of the texts from Transition Design framers reveals little to no discussion of some of the other activities, including time and space allowed for initiation, respect for cultural practices, immersion in context, discovery, deep listening, sense-making, and synthesis (Irwin, 2011; Irwin, Kossoff, and Tonkinwise, 2015a; Irwin, Tonkinwise, and Kossoff, 2015b; Irwin and Kossoff, 2017; Irwin, 2018; Irwin, 2019a; Irwin, 2019b). There is one mention of prototyping and some discussion of experimenting and testing.

These gaps are surprising to me and are the source of my research question about how to assemble a Transition Design practice. As will be discussed in Chapter 6, to reach the phases and activities specified in the emerging Transition Design approach, during my Case Study I relied on a broader range of design activities. In the process I put forward, I have elected to include the activities that have been omitted, arguing they are core to social and co-design practices for complex contexts as evidenced both by other process examples and the empirical cases.

Transition Design themes (Sides et al.)

The article, ‘Engaging with Theories of Change in Transition Design’ by Sides et al. (2022) came out during this research and is worth inclusion in this analysis of processes for two reasons: 1) it names changemaking ‘themes’ in Transition Design and 2) introduces the term ‘situate’, which I have adopted.

As context, once the ‘Transition Design Provocation’ (Irwin, Kossoff, and Tonkinwise, 2015a) had been launched into the world, academics, and practitioners (including myself) began the work of understanding how to enact this changemaking practice. To examine how change is produced in Transition Design, Sides et al. (2022) reviewed transition design and ‘designing for transitions’ literature from 2015 to the present. They draw out three themes within Transition Design that facilitate change: Situate, Reframe, and Intervene (Figure 38).

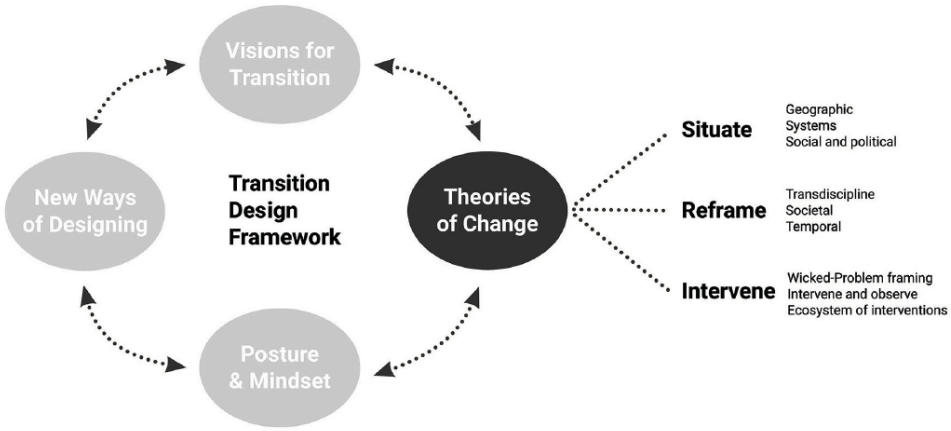


Figure 38. Situate, Reframe, and Intervene Themes (Sides et al., 2022, p. 146)

In these themes, Transition Design supports transformation by deeply orienting to context and developing an understanding of the dynamics at play (situating), developing visions of a viable future, and experimenting with perspectives (framing) to find productive ways forward, and developing responses (intervening) that introduce researched propositions for experimentation, testing, and iteration into the transition arena.

The concept of Situate as articulated by Sides et al. (2022) brings out a dimension that is not discussed in Irwin’s (2018) three phases but is common in the design, innovation, and community development processes cited here: the idea of ‘orienting ourselves within a system’ as part of the process. Sides et al. (2022) name three types of situating: geographic situating, systems situating, and social and political situating.

Over the course of this research, I have come to preference the term Situate rather than terms like ‘Empathize’, ‘Discover’, and ‘Inspiration’ for the way it provisions for the ‘Connect’ and ‘Reflect’

protocols advised by Yunkaporta (2019). Combining Sides et al. with other processes as well as my own practice, I came to define Situate as getting oriented to the situation, problem context, and place, including geographic situating, systems situating, social and political situating, to better understand the context and make sense of dynamics (to the extent that is possible).

I note that I find the conceptualization of framing problematic in Sides et al. (2019), Irwin (2018), and Dorst (2015a and 2015b). Sides et al. (2019) embed visioning into framing; Irwin (2018) attaches reframing to the present and future in the phase 'Reframing Present and Future'; and Dorst (2015b) offers framing as a single phase. By contrast, I conceptualize (re)framing following Schön (1983), as an activity that can occur at any point. The central role of framing will be discussed further in Chapter 7.

Process analysis

Among the generative processes compared in this discussion, no two are alike but there are recurring patterns of activities, including initiation and convening, respect for cultural practices, immersion in context, discovery, deep listening, sense-making, synthesis, (re)framing, Futuring, visioning, developing ideas / interventions / responses, prototyping, testing, experimenting, iterating, implementation, scaling, waiting, observing results, evaluating, and working with Source/Spirit. All these activities are mentioned in the empirical case analysis (Chapter 2), except working with Source/Spirit. Table 4 compares the processes described here by activities.

Table 4. Comparison of process examples by activities

PROCESS EXAMPLE (CITATION)	CONTEXT	PROCESS AS…	DESCRIBED AS LINEAR	INITIATION / CONVENING	CULTURAL PRACTICES	DISCOVERY / SITUATE	SENSE-MAKING / SYNTHESIS	FUTURING / VISIONING	ENGAGING SOURCE /SPIRIT	(RE)FRAMING	ITERATING / LEARNING	DEVELOPING IDEAS / INTERVENTIONS	PROTOTYPING	TESTING	EXPERIMENTING	IMPLEMENTATION, SCALING	WAITING, ELAPSED TIME	OBSERVING, EVALUATING
Transition Design (Irwin, 2018)	Sustainability transitions	Approach	N					Y		Y		Y					Y	
Transition Design (Sides et al., 2022)	Sustainability transitions	Themes and Patterns	N			Y	Y	Y		Y	Y	Y			Y		Y	Y
Transition Management Cycle (Loorbach, 2007)	Transition Governance, Policymaking	Activities	N	Y		Y		Y		Y	Y	Y		Y	Y	Y	Y	Y
Frame Innovation (Dorst, 2015a, b)	Innovation	Steps	Y			Y	Y	Y		Y	Y	Y						
Cynefin Framework (Snowden & Boone, 2007)	Complexity	Context-dependent sequences	Y			Y	Y				Y	Y	Y	Y	Y		Y	

Theory U (Scharmer, 2009)	Systems change	Sequenced movements	Y/N	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Protocols for Respect (Yunkaporta, 2019)	Working with Aboriginal peoples	Sequence	Y	Y	Y	Y	Y		Y			Y					Y	
Collaborative Change Cycle (CFI, n.d.)	Community Development	Cycle	Y/N	Y	Y	Y	Y	Y								Y		Y
Place-based Collective Impact (SCA, 2019)	Community Development	Sequence	Y	Y		Y	Y				Y	Y			Y	Y	Y	Y
Action Research (Swann, 2002)	Research	Moments, Spiral	Y/N			Y	Y			Y	Y	Y		Y	Y			Y
AcdB (Jenkins, 2015)	Strategic conversation	Spaces	Y	Y		Y	Y	Y		Y	Y	Y						
Thinking Wave (Jenkins, 2015)	Customer centered design	Wave	Y/N			Y	Y			Y	Y	Y	Y	Y	Y	Y		
Strategic Design (Miller, 2016)	Strategic Design	Learning Loop	Y/N			Y	Y	Y		Y	Y	Y	Y	Y	Y			
Double Diamond (Drew, 2019)	Service Design	Movements	Y/N			Y	Y			Y	Y	Y	Y	Y	Y	Y		
Lean Startup (Ries, 2011)	Business Startup	Feedback Loop	Y/N				Y			Y	Y	Y	Y	Y	Y	Y		Y
Human-Centered Design (IDEO, 2015)	Human Centered Design	Phases	Y/N			Y	Y			Y	Y	Y	Y	Y	Y	Y		Y
Design Thinking (Stanford dSchool, 2012)	Design Thinking	Modes	Y/N			Y	Y			Y	Y	Y	Y	Y	Y			

Process as meta-activities

Based on the comparison of processes, activities relevant for Transition Design can be synthesized into six meta-activities: Initiating, Situating, (En)visioning, Responding, Harvesting, and Reframing. Table 4 is organized and color coded by these meta-activities:

- **Initiating**—Initiation and convening, respect for cultural practices
- **Situating**—Discovery, situating, sense-making, and synthesis
- **Envisioning**—Co-creating futures and visions (alternate term: Visioning)
- **Responding**—Developing ideas / interventions / responses, prototyping, testing, experimenting, implementation, scaling
- **Harvesting**—Waiting, observing results, evaluating
- **Reframing**—Framing, reframing, and iterating; I have included working with Source/Spirit in the meta-activity of reframing as that is often the compass the facilitates reframing

Table 5 names and defines these six meta-activities in more detail.

Table 5. Meta-activities in the Transition Design approach

META-ACTIVITIES	DEFINITION	SUB-ACTIVITIES
 **Initiating**	Time and space for introducing the possibility of collaboration and forging working alliances	• Building relationships • Opening possibilities so that collaborations, initiatives, and opportunities to work together can emerge • Initiating, organizing, and convening stakeholders • Developing shared commitments to collaboration and co-creation • Establishing norms of respect for cultures and their protocols
 **Situating**	Co-developing a deep understanding of the context; co-sensing	• Getting oriented to situation, context, and place, including geographic situating, systems situating, social and political situating (Sides et al., 2021) • Immersion in context, deep listening, observation, discovery, and sense-making; Sensing, as described by Scharmer (2009) • Structuring the 'problem space'. Naming challenges, opportunities, and Leverage Points for influencing transition (see also: Framing). • Exploring the archaeology, paradox, context, and field to develop themes and frames (Dorst, 2015b)
 **Envisioning**	Co-creating visions of viable futures	• Identifying goals, outcomes, and shared agendas • Developing futures, visions, and strategies that have generative, desirable, inspiring, and energizing qualities. Putting shared knowledge, imagination, and creativity in service of the future that wants to emerge • Framing a Theory of Change and Theory of Action; Establishing assumptions—so that these can be reviewed, iterated, evaluated
 **Responding**	Developing and experimenting with responses	• Developing diverse responses (actions, strategies, experiments) that attend to multiple systems levels • Establishing an innovation ecosystem and 'strategic microcosms' (Scharmer, 2009) • Amplifying and connecting grassroots efforts and projects • Developing prototypes as well as responses, testing and observing feedback, iterating • Implementing and scaling—repeating design processes at every level of detail to embed change
 **Harvesting**	Allowing time; Gathering and sharing learning and impact	• Waiting, elapsed time (like any harvest) (Irwin, 2018) • Observing longer term results and evaluating; Drawing out findings • Acknowledging and sharing learning and impacts • Marking the end/transition of a major cycle, era, or horizon
 **(Re)Framing**	Experimenting with perspectives to find productive ways forward	• Exploring diverse alternative points of view/perspectives, ideas, responses, strategies, visions, and pathways • Synthesis, framing, and reframing in iterations—Collaboratively framing and reframing the 'problem' to be addressed, potential solution/ Opportunity Areas, desired outcomes, and roles that stakeholders play • Reflective practice; Learning and iterating. Adjusting *what* you do (Theory of Change) and *how* you do it (Theory of Action) —as you learn, and things change over horizons of time

		• Can be one or multiple distinct steps/stages in an end-to-end process, but also may be a behavior e.g., reflection-in-action. Framing as the central rhythm of the process, to be discussed in Chapter 7 • Presencing— '[retreating] and [reflecting], [allowing] inner knowledge to emerge; [going] to the place of individual and collective stillness, [opening] up to the deeper source of knowing, and [connecting] to the future that wants to emerge through you" (Scharmer, 2009, p. 18-19) • Relational decision-making—working with ecological, philosophical, First Nations, and spiritual traditions to locate perspectives and decisions within the overall wellbeing of the whole

Process characteristics

The process examples compared here together with Transition Theories also reveal core themes regarding how processes should be enacted e.g., characteristics for Transition Design approaches.

Non-linearity, iterations, cycles, and clusters of activities

Non-linearity and flexible sequencing—a looping, cyclical, and fluid dynamic—are characteristic of these processes. Many of the processes described here are visualized as linear but emphasized as non-linear (Stanford dSchool, 2012; IDEO, 2015; Drew, 2019). Some processes are described as cycles, particularly cycles involving feedback loops where problem, responses, and framing are iterated repeatedly (Ries, 2011; Miller, 2016; Loorbach; 2007). Some note that cycles can be entered at any point (Miller, 2016; Loorbach, 2007).

Linear chains of phases and tight cycles give way to movements (rather than phases) and "activity-clusters" (Loorbach, 2007) in sequences. Any combination of activities or phases could be present at any time. The specific activities of a phase are important, but elements of the other activities are likely present— "each component reflects the whole, yet in a very specific and particular way"—with the potential to be fluidly, seamlessly enacted together in one moment, "like dancing" (Scharmer, 2009). The design-based processes call for multiple rounds of divergent and convergent thinking, including considering options and deferring judgement (Drew, 2019).

It is emphasized that process must be fit for purpose and fit to context, and so approaches must be flexible to adaptation (Irwin, 2018; SCA, 2019). There is note of the dialectic between theory and practice e.g., praxis (Schön, 1983; Loorbach, 2007).

Relational and respectful ways of working

Irwin (2018) describes “stakeholder relations as the connective tissue” of collaboration. The social process examples highlight a need to build relationships, initiate collaboration, and follow cultural protocol (SCA, 2019; Yunkaporta, 2019). This indicates a relational approach, with attention to trust, pre-conditions, and learning what respect means for different cultures.

These activities begin with the meta-activity ‘Initiating’. Initiating activities signal intent to act, they take as long as they take, and will continue through the course of the project—underscoring the relational principle. Collaboration and engagement may require formal and/or cultural structures and sequences (SCA, 2019; Yunkaporta, 2019), even where conversations have been going for a long time. Relational activities can help ensure that an approach is co-designed where possible and set up in ways that do not perpetuate racism, bias, harms done, structural inequities, and injustices already present (Smith, 2012; Land, 2015; Yunkaporta, 2019).

Social engagement, including collaborative group/social processes focused on change, may require a structured stopping point and closure, or may need to draw a line under work after a length of time. This is part of Harvesting.

Building agency, capacity, and self-determination through process

The processes discussed here that focus on engaging diverse people go further than timing, relationality, and respect. Processes for community development and action research emphasize building agency, capacity, and leadership, supporting self-determined action and participant-led projects (Löfman, Pelkonen and Pietilä, 2004). The agency-building stance is fundamental to socially based generative design processes.

Timing—waiting time, relational time, change over horizons of time, and ecological time

Timing shapes social processes and is a factor of relational ways of working. Working in places with stakeholders (including nature as a stakeholder) requires to timing, including pace. Transition Theory frameworks discussed in Chapter 4 feature the role of time (Geels, 2002; Wahl, 2016; Bridges, 2009). Although Sides et al. (2021), Loorbach (2007), Yunkaporta (2019), SCA (2019), Snowden and Boone (2007), and Scharmer (2009) mention the role of time, Irwin is the only source cited here who inserts time into process, naming a ‘Waiting and Observing’ phase.

At a deeper level, designers talk about the rhythm and flow of process, which requires an orientation to timing and dynamics as well as to the “future that wants to emerge” (Scharmer, 2009). Timing plays a vital role in agriculture and ecological processes—bringing to the Case Study a respect for seasonality, waiting, observing, emergence, self-organization, synchronicity,

maturation, rest, and even a sense of epochs and geologic time. In fact, time in the form of 'rest' is named alongside other management tools in the holistic decision framework (Chapter 6). Viewing transitions as ecological processes, we can begin to conceptualize processes of social change in ecological time as well.

An ecosystem of diverse responses at multiple levels—ultimately for societal impact

The concept of 'ecologies of intervention' (Irwin, 2019a), which I refer to as 'Ecosystems of Responses', is fundamental in the transitions, systems, and complexity literature. Irwin (2018) specifies that, "In order to seed and catalyze change in complex systems and resolve wicked problems, multiple interventions, at multiple levels of scale, over multiple time horizons will be required" (p. 16). As discussed in Chapter 4 regarding Theory of Change, responses (interventions) should link to other responses occurring at different levels (e.g., grassroots, niche, dominant regime, and landscape) (Geels, 2002; Loorbach, 2007; Irwin, 2018). Whereas you and your collaborators may develop an Ecosystem of Responses, these should also seek to link into and amplify other Ecosystems of Responses. Linking Ecosystems of Responses can help catalyze "multiple changes (i.e., in policies, technologies etc.) to happen on the same temporal scale…the need for all the factors reinforcing unsustainability to be re-directed towards a sustainable trajectory simultaneously" (Conti, Zanello and Hall, 2021, p. 9).

To help create momentum for change and pluriversal futures, multiple processes compared here emphasize diversity (Loorbach, 2007; Snowden and Boone, 2007; Scharmer, 2009; Irwin, 2018; Sides et al., 2021), with "multiple parallel" "safe-to-fail" experiments "based on different and competing theories/hypotheses" (Snowden, 2012). The notion of exploring diverse ideas in an Ecosystem of Responses is echoed in Yunkaporta's protocols for 'sustainability agents' or 'complexity agents'— connect, diversify, interact, and adapt (2019, p. 98). Scharmer (2009) calls for developing 'strategic microcosms' as well as whole 'innovation ecosystems' to facilitate the development of changemaking conditions and propositions.

Experimentation in systems

Experimentation in systems is a means for materializing *and* catalyzing systems change. Curiously, the term 'experimentation' is not commonly used by the Transition Design framers, although they do discuss iterating interventions. Following the premise that "wicked problem resolution requires myriad interventions at multiple levels within extremely large spatio-temporal contexts" (Irwin, 2019, p. 163), the difficulty of intervening in a complex and self-organizing system

is seen to necessitate multiple, iterative interventions (Irwin, 2015, p. 237) that are modest and reflexive (Irwin, Tonkinwise, Kossoff, 2020, p. 76). To be clear, an intervention is not necessarily an experiment—an intervention could be an action, a project, a movement, a strategy, a provocation, etc. Drawing from Schön, I argue that the practice of iterating interventions, including waiting and observing over time, is a form of experimentation—specifically, *experimentation in systems*.

Schön describes how practitioners engage in several forms of experimentation (exploratory, move testing, and hypothesis testing, pp. 145-147), sometimes simultaneously and often 'on the fly', concluding that practitioners conduct a specific form of experimentation, which he names "reflection-in-action" (p. 49). I believe Transition Design practice calls for these forms of experimentation in the day-to-day of collaboration *and* over time horizons.

When it comes to addressing wicked problems with their many interdependent, self-organizing and complex properties, knowing that it's a long bow to draw between action, outcome, and change—and respecting the long tail of system constraints, barriers, and resistance to change—system experiments help us feel our way to workable paths forward, particularly where experiments are articulated and tested via a Theory of Change (Chapter 4). I argue that Transition Design practitioners and collaborators (need to) fluidly use a mix of system experimentation forms in a messy brew to materialize ideas and keep tinkering with ways to catalyze systems change. As will be discussed at the end of this chapter, experiments to bring about the future require a different set of criteria to judge potential (i.e., congruence or coherence, elegance, and generativity)—as contrasted with usability and context-fit criteria like desirability, viability, feasibility—because "what will be useful/usable in [a changed] system will be completely different to what seems useful/useable now" (C. Tonkinwise, personal communication, April 7, 2024).

In design, experimentation is often done through prototyping. Prototypes are defined as low fidelity, small scale, and/or rough simulations that give form to ideas so ideas can be tested; they represent hypotheses or hunches, and how hunches can be manifested in the thing at hand. As per Tonkinwise (C. Tonkinwise, personal communication, April 7, 2024), prototyping has a limited role in Transition Design as compared with other design practices, for instance usability testing. However, prototyping was mentioned in 10 of the 24 empirical cases sampled for this research, suggesting that prototyping—via participatory and co-creative practices—does have a role to play in materializing change in practice. Although prototyping is limited by existing materials and current mental models, by allowing interaction with our ideas (testing) it is one of the most useful

tools we have available to experiment with how a changed paradigm can be materialized (as noted in the discussion of objects of design, Chapter 4), and to learn what helps shift systems.

Prototyping and progressive, iterative experimentation can be a powerful tool of provocation. They demonstrate what's possible, making what previously seemed impossible look believable and do-able. Prototypes and/or experiments help highlight strategies with potential, fueling momentum in promising directions. Nimble and lightweight, easily modified in response to feedback, prototypes and experiments promote the *feeling* that things *can* change whilst demonstrating evidence of a desirable change made real; they are a signal, a proof-point that change is possible. Prototypes support micro-experimentation to materialize change and can have oversized impacts, but other forms of experimentation are also needed to shift systems.

What does experimentation in complex systems look like? It depends.

Experimentation can serve the function of discovery and sense-making at the scale of societal consciousness and conversation. Schön (1983) calls for professionals to facilitate the "process of social problem setting" i.e., the "struggle to define the situation" and our constructions of reality, through the "cumulative process of societal inquiry", "cooperative inquiry" and "reflection" (p. 347-352). Working at the 'landscape' level of the MLP (Geels, 2002) through highly visible acts of inquiry, framing, experimentation, provocation, and reflection, Transition Design can stimulate and facilitate new awareness, attention, focus, and effort at the collective level as a form of change. Working on public consciousness at the landscape level is potentially a pathway for enabling societal reflexivity, as called for by Lu and Sangiorgi (2021).

Iterating interventions could involve multiple parallel, safe-to-fail experiments (Snowden, 2012) at multiple levels, tracked by a Theory of Change, ultimately constituting "'ecologies' of linked projects" (Irwin, 2019, p. 172) and "ecosystems of innovation" (Scharmer, 2009, p. 345). Coordinated or aligned experiments require a vehicle or mechanism (format) for organizing and/or integrating, of which Labs (Living Labs; Social Labs) provide an example. Again, time is a factor— Irwin (2019a) stresses the role of (elapsed) time and qualitative change in systems experimentation, enabled by "periods of observation and reflection" like in "Chinese acupuncture" (p. 175).

For the purposes of this research, the *relatively* long duration and freedom of PhD research (this research occurred over seven years as compared with the timeframes of projects or workshops that typically occur over months) was considered important to help facilitate experimentation over time. It is noted that Transition Design aims for even longer timeframes e.g., work over

decades. To experiment at a number of acupuncture points and link ecologies of interventions (Irwin, 2019), I pursued involvement in multiple working groups acting on different Opportunity Areas within the Theory of Change. And as it turned out, the TransitionAg business experiment that I started as part of this research served as an essential vehicle for engaging in and obtaining funding for systems experimentation.

Process as a crucible for personal and collective transformation

Many scholars, academics, philosophers, and thought leaders of sustainability transitions highlight the interconnectedness of all things, and the role of deep connection to Spirit/Source, country, and culture in making transition possible (Yunkaporta, 2019; Scharmer, 2009; Wahl, 2016). Ecology and spirituality are conceptualized as "two sides of the same coin" (Wahl, 2016), where designing, decision-making, and governance can work in support of relational ways of being (Yunkaporta, 2021a, 2021b). Process becomes a crucible for (personal, group, and societal) regeneration and transformation (Schön, 1983; Scharmer, 2009; Wahl, 2009), and so the role of personal and collective journeys and working with Source/Spirit needs to be considered.

I note that not all Transition Design processes will be end-to-end group processes. Nor is safety or permission to engage in personal transformation a given in group processes. In professional practice I have observed that, if the process is to deliberately involve transformation, then people must knowingly sign up for a transformative process and time is required for building trust, openness, and commitment.

The locus of transformation within this research was myself; it required me to open myself up to be changed by what I encountered. I reflect on what changed for me in Chapters 7 and 8.

Summary of process characteristics

Table 6 summarizes characteristics that should be designed into Transition Design processes/approaches based on the analysis in the previous section. These characteristics guide how process is designed. Process is also informed by mindset, postures, and protocols, as discussed later in this chapter, as well as the need to lay the groundwork for ontological openness (discussed in Chapters 1 and 2).

Table 6. Process characteristics

PROCESS ELEMENT	CHARACTERISTICS

Cultural respect, agency, and self-determined action	• Respecting cultural protocols • Not perpetuating racism, bias, harms done, or structural inequities and injustices • Emphasis on building agency, capacity, and leadership • Supporting self-determined action and participant-led projects
Relational and transformative stance	• All projects begin with and require relationship building on an ongoing basis • Seek to engage and support diverse participation • Co-design approach including timing with participants and stakeholders • May include forming alliances and/or collaborations • Personal, group, and collective transformation considered in process design • Process as a crucible for transformation; process as (deep) purpose • Relational ways of working refer to relationships between people as well as relationality with all beings (living, non-living, human, and non-human)
Sequences of activity-clusters	• The process is not linear, whether drawn as a linear process or a cycle • Activities gravitate into clusters like binary stars and unfold in a sequence-y order. The process isn't fixed, but it doesn't work backwards or randomly. The process has a rhythm, a logic, and a looping, cyclical, fluid dynamic • Any of the activities can be present at any given phase, even if there is a predominant activity for that phase (e.g., there may be some prototype testing in discovery activities, and some discovery in implementation activities, etc.) • Process should be fit for purpose and fit to context; Inquiry may begin with any of the design-based activities (e.g., discover, build/make, evaluate, etc.)
An ecosystem of diverse responses at multiple levels	• Seeking out and amplifying elements of the future in the present • Exploring many different ideas to address the same challenge • Problem structuring and creating an ecosystem of innovations and responses aimed at various dimensions (strategic, tactical, operational) and levels (landscape, regime, niche, and grassroots), as represented in the Panarchy model, MLP, the Three Horizons Framework
Experimentation in systems through iterative cycles	• A messy brew of exploratory, move testing, and hypothesis testing; reflection-in-action • Undertaking multiple parallel, safe-to-fail experiments based on different and competing theories/hypotheses • Multiple rounds of moving between diverge/converge, theory/concept, and practice/implementation—deferring judgement, reflective and reflexive praxis • Prototyping and progressive, iterative experimentation to materialize change, demonstrate potential, build momentum and belief that change is possible, act as provocations, and facilitate societal dialogue and reflexivity • Figuring out how to embed a changed paradigm through objects of design • Seeking ways that prototypes and experiments can have outsized impacts • Structured testing and evaluation, building in feedback loops—as part of tracking, testing, and iterating a Theory of Change
Timing	• Waiting and observing, elapsed time • A sense of timing, pace, and synchronicity when engaging stakeholders • A sense of flow and rhythm in the process; moving with breath • Allowing self-organization and rest (at micro and macro scales) • Time as a tool, a strategy available to us • Taking a view over long horizons of time and moving with seasons

5.2 Protocols for collaborative practice

As noted previously, in the Transition Design Framework, Irwin, Kossoff, and Tonkinwise (2015a) outline the need for "[postures] and [mindsets]" suitable for "living in & thru transitional times." The actionable words they use to define postures and mindsets include openness, mindfulness, self-reflection, willingness to collaborate (trans-disciplines), 'optimistic grumpiness', self-sufficiency, "deep respect and advocacy for 'other'" (and all of life), working "within uncertainty, ambiguity, chaos, and contradiction", "a committed sense of urgency", and "optimism in the ability to change" (p. 7). These words characterize the stance and frame of mind that Transition Designers need.

All elements of practice are guided by the posture and mindset of the designer, and the ethos behind these. The ethos, or spirit in which the practices are framed and intended, guides not just *what* we do, but *how* we do it. That thread can easily be lost when packaging a practice into a process and a plan. Protocols offer a way to translate ethos into practice and make postures and mindsets more actionable. Protocols are cultural norms, filtered by values, ethics, and principles, that guide behavior, engagement, and communication.

Yunkaporta (2019) and others use the term 'protocols' to describe expectations in Indigenous cultures for behavior, and norms that help produce desired cultural outcomes, stable relationships, and consistency in how to interact across different cultures. Yunkaporta also uses the term protocols to prescribe behaviors for agents of complexity or sustainability—behaviors which assist people to navigate the brackish waters of intermingling ideas and cultures, make diverse connections, and cross-pollinate rich grounds for innovation and transformation.

Reflecting on my professional practice and the literature examined here to construct my own approach to practice, I have drawn out a series of protocols for collaborative practice (Table 7). These are by no means a definitive list—these are a list to guide my own practice. They are included in the Field Guide (p. 35) with a reflective question for readers about how they might see protocols play out in their practice, and what their own protocols might be.

Table 7. Protocols for collaboration

PROTOCOL	SOURCES
Relational. Start with connection, convening, initiating	SCA, 2019; Yunkaporta, 2019, 2021a, 2021b; Scharmer, 2009; Smith, 2012; Land, 2015; Lincoln, 1985; Cultural Survival et al., 2020; Brydon-Miller, 2009; Yee and White, 2016

Respect cultural protocols; Honor and bridge cultures	Yunkaporta, 2019, 2021a, 2021b; Smith, 2012; Land, 2015; Cultural Survival et al., 2020; Fassler, 2021
Learn what is needed to build trust and relationships over time	Lincoln, 1985; Brydon-Miller, 2009; Yunkaporta, 2019, 2021a, 2021b; Smith, 2012; Land, 2015; Blake, 2007
Honor gifts; strengths-based approaches	Department for Health and Social Care, 2019; Strengths-based social practice (body of literature and social sector practice norms)
Transparent, respectful, and open communication	Swann, 2002; SCA, 2019; Kania & Kramer, 2011; Barab et al., 2004; Brydon-Miller, 2009; Bryman, 2016; CCCH, 2018; Crabtree, Rouncefield and Tolmie, 2012; Creswell & Poth, 2018; Edmondson & Hecht, 2014; Genzuk, 2003; Hanleybrown, Kania and Kramer, 2012; Hassan, 2014; LeCompte & Goetz, 1982; Schön, 1983; Lincoln, 1985; Wolcott, 1994
Enable self-organizing, build on momentum, capacity, and capability	Scharmer, 2009; Hassan, 2014; Brydon-Miller, 2009; Blake, 2007; Löfman, Pelkonen and Pietilä, 2004; Gelling and Munn-Giddings, 2011; Swann, 2002
Interact and diversify. Engage with different people and groups	Yunkaporta, 2019; Scharmer, 2009; Hassan, 2014; Escobar, 2018
Tend to individual and group reflection. Keep experimenting, learning, and adapting	Scharmer, 2009; Eisenstein, 2013; Wahl, 2016; Schön, 1983
Take care of yourself, and check that others do the same	McKercher, 2020; Professional practice—wellbeing practices and distress protocols. See TACSI discussion on creating safe and brave spaces: https://www.tacsi.org.au/news-ideas/how-we-create-safe-brave-spaces
Know where the boundaries are; work within limits	Yunkaporta, 2019, 2021a

5.3 Approach

Living Systems principles and their relevance to the Case Study approach

In this section, I begin to crystallise the discussions so far in this thesis through criteria for my Case Study approach. Drawing from Irwin's (2011) descriptions of the relevance of Living Systems principles to design and my discussions of Transition Theory and process characteristics, my Case Study approach should provision for the following:

- Carefully study and orient to the dynamics of the system and webs of relationships
- Frame design problems within appropriate contexts and boundaries, with awareness that systems are embedded within systems and overlap / blur into other systems
- Establish a 'slow, thoughtful design process' and allow time for emergence (p. 1)
- Incorporate iterative experimentation through feedback activities and scanning for 'dissonance'

- Work in the role of 'catalyst for change', cooperatively and interdependently with others seeking to enable change
- Look to clues of 'solutions already present in the system' and how to amplify these
- See design activities as systems 'perturbations' for which outcomes cannot be predicted, but rather must be observed through feedback and over time
- Retain a posture of humility, sensitivity, and iteration
- Lean into and work with resistance to change, seek to understand and respond to opposition, grief and loss that comes with transitions, and navigate how proposed ways forward may be at dissonance with qualities that are valued within the existing system
- Build in sensemaking, feedback and evaluation processes over time.

Comparing five approaches to assemble the Case Study approach

As noted in the analysis of empirical cases (Chapter 2), projects require a mechanism or vehicle, or *format*, as well as a coherent method to be enacted, and together these comprise the approach. Although the empirical cases in Chapter 2 were not available to me in the time frame when I was scoping this research, I was not without relevant precedents. Informed by available empirical examples and the process comparison earlier in this chapter, which specified the types of activities that would need to be included no matter the format and method, I identified five potential approaches: the Ojai Water Case Study (Irwin and Kossoff, 2017a and 2017b); Cheryl Dahle's 'Future of Fish' Case Study (2019); The Australian Centre for Social Innovation (TACSI) systems change initiatives (2021); Theory U as formulated by Otto Scharmer (2009); Social Labs as articulated by Zaid Hassan (2014); and place-based Collective Impact approaches developed from the work of John Kania and Mark Kramer (2011).

A comparison of these empirically based approaches assisted me in conceptualizing an approach for my project relevant to the context.

Ojai Water Case Study

'Transition Ojai: A Water Security Workshop' was a 2-day workshop that brought together "a group of concerned Ojai citizens and faculty from the School of Design at Carnegie Mellon University to explore solutions aimed at ensuring long-term water security (Irwin and Kossoff, 2017a). The workshop [used] Transition Design as a framework for understanding the problem and

envisioning a future in which water related issues have been resolved." Acknowledging that "solving Ojai's water shortage problem will be a decades-long process", on the first day participants mapped the "'wicked' problem of Ojai's water security and identify root causes and consequences" across the areas of infrastructure and technology, politics and governance, economics and finance, environment and ecosystem, and social relations among stakeholders. On the second day, five months later, "diverse stakeholder groups [investigated] how they are affected by water-related issues and…where there may be conflicting goals and objectives as well as areas of common ground and alignment." They also "[engaged] in an exercise of 'long-term Futuring' to envision Ojai lifestyles in which water security has been achieved"; these "'glimpses' of Ojai's long-term future" were intended as "the basis for conceiving near-term projects and initiatives that serve as 'steps' in a transition toward co-created, desirable futures."

This example highlights the core practices of facilitating collaborative multi-stakeholder groups in co-creation, including building a shared picture of the challenges, grappling with the complex interplay of relationships that produce the current situation, developing visions for a sustainable future, and setting out a process of moving from problem framing to future visions and experiments at Leverage Points.

The Future of Fish Case Study

The 'Future of Fish' Case Study (Dahle, 2019) describes how "Nearly 10 years of applying design process to end global overfishing has led us to significant insights into methods…to drive widespread shifts in human and industry behavior." The Future of Fish approach involves "the use of design process to (a) posit a new theory of change; (b) select and incubate scores of entrepreneurial solutions and engage in "amplifying" support strategies to help those disruptive ideas gain traction; and (c) center system stakeholders as designers of their own futures" (p. 73). Future of Fish offers an example of how Systems Thinking and design methods can be used in combination to gain in-depth insight into a sector, develop a Theory of Change that includes Opportunity Areas and Objects of Design, and then amplify the work of collaborators through design and strategic business support, helping them build their own agency to impact change.

In the Future of Fish example, "change is driven by someone who has relatively little system power" through "addressing different 'stuck points' to [create] the behavior changes we want to see, at multiple levels" and amplifying the work of 'system catalysts' with the ultimate intent of supporting "the voices of those closest to the problem—those experiencing it and those on the

front lines of solving it—to have a stronger voice in deciding what solutions get created" (p. 221, 231, 227, 232).

The Future of Fish Process included the following steps, which felt workable for my project:

- Deep research to gain fresh insight into a domain area
- Workshop these insights across the sector
- Identify a Theory of Change for the sector and Leverage Points to target
- Find a small handful of collaborators
- Help collaborators to experiment by providing design, strategy, and business supports
- Observe what happened as these collaborators worked through challenges and impacted their sector.

TACSI systems change initiatives

In my work at TACSI from 2016-2022, I was exposed to a range of approaches for catalyzing systems change. TACSI approaches to systems change initiatives differ in format from project to project. TACSI's 'Future of Home' systems initiative was a long-term initiative (7+ years) in which design research was conducted to explore the context and a vision for the qualities of a desired future was developed. Engaging leaders and change agents in South Australia and across the country in this vision, TACSI tapped into a network of diverse system actors to initiate projects and experiments to figure out how to create the conditions and social responses that would embody those desired qualities of the future system. This work is summarized in a book that "illustrates what our future housing system could look like and showcases the innovations and innovators who are already beginning to shape this new future" (TACSI, 2021).

Theory U and Social Labs

As discussed earlier in this chapter, Theory U is a technology, a social process, and group method for shifting the structure of our attention to make changes in the emerging future—to create change in the world by changing the self, changing what we pay attention to. Convening a Theory U initiative was not practicable, but the movements (co-initiating, co-sensing, co-presencing, co-creating, co-evolving) (Scharmer, 2009, p. 19) have parallels in designing and could help structure my approach.

Social Labs, as described by Zaid Hassan (2014) and developed by Reos Partners, give a container to Theory U processes. Social Labs are social, experimental, and systemic initiatives convened to

address complex challenges through a diverse, transdisciplinary team and group of stakeholders using an iterative process within a novel space or "lab." Labs were popularized by entrepreneurship, design, and social change initiatives, and have become an acceptable format—a known space for engaging in future-looking, change-making activities. The concept of a "lab" is useful here, and eventually becomes an inspiration for the TransitionAg business experiment.

Place-based Collective Impact

As discussed earlier in this chapter, place-based collective action initiatives bring together Collective Impact and place-based approaches. Some of the key considerations I drew from this body of work are listed here.

Five foundational conditions – Referring to design literature, Yee and White (2016) outline the "'just right' conditions for design to achieve impact in public and third sector projects", summarized as "community building, capacity, and leadership." The conditions set out by Yee and White have strong parallels in the five foundational conditions of Collective Impact (a common agenda, shared measurement, mutually reinforcing activities, authentic community engagement and dedicated backbone support—modified from the original) and the characteristics of successful Action Research approaches noted in Chapter 3. This points to key enablers of success for working on collaborative initiatives in complex social contexts, no matter the discipline.

Pre-conditions - In the Collective Impact literature, four pre-conditions—required prior to the establishment of an initiative—were also identified: influential champion(s), adequate financial resources, urgency for change and operating momentum (Hanleybrown, Kania and Kramer, 2012). These conditions are also picked up in the CFI (2023) 'Collaborative Change Cycle.'

Defining characteristics of place-based initiatives – Place-based initiatives require local ownership, capacity building, and a 'good fit' for the context and scale. My Case Study would certainly have to fit these characteristics, and this is consistent with Action Research and Transition Design literature.

Philosophy and ethics – Place-based, collective action initiatives call for a philosophical stance and ethical approach that promotes equity and furthers self-determination, which is consistent with Action Research, feminist, and sociological traditions, and the relational, respectful, and agency-building characteristics of process named earlier in this chapter.

Stages – The early stages (Stages 0-2—developing pre-conditions, initiating action, convening, and organizing) are captured in Initiate activities in the process analysis would be required for my Case Study.

Working with goals rather than visions and futures

Although Visions for Transition are one of the four areas of knowledge, action, and self-reflection that Transition Design identifies as essential for addressing complex, wicked problems (Irwin Kossoff and Tonkinwise, 2015a, p. 7), as noted in Chapter 2, it wasn't appropriate to start my research with visioning and futuring, nor was it feasible during this research for me to convene visioning workshops. I needed to build relationships as well as the conversation around the problem and possible solution spaces first. I also note that, in the sampling of empirical cases, just 15 of the 24 cases—many of them but not all of them—mention some form of futuring and/or visioning. My experience has been that interest in visioning can be a matter of time, opportunity, and fit for context.

The model set out by Dahle (2019) provided a way to get started by operating with a goal: how might uptake of Regenerative Agriculture be increased, by design? This goal—rather than a vision—was used throughout the project, and to anchor the Theory of Change. However, as I will discuss in Chapter 7, I eventually arrived a different framing. By the end of the Case Study, I wanted to explore how all of agriculture could be regenerative. Also, I felt it was finally appropriate and timelier to for me to ask questions about a plurality of possible visions.

Envisioning a project approach

Comparing the five precedents in searching for an appropriate project format, I conceptualized my project as a system change initiative, like a TACSI systems initiative but more closely aligned to the Future of Fish Case Study. I assumed time and deep relationships would be required to get to the type of facilitated systems convening described in the Ojai Case Study, but that the Ojai workshop example could serve as a goal / intention. From place-based collective action, the five foundational conditions, pre-conditions, defining characteristics of place-based initiatives, philosophy and ethics, mindsets, and Initiate stages all felt relevant. However, as compared to the large-scale collaboration of place-based collective action and the group-based systems

experimentation of Social Labs, the Future of Fish format for impacting acupuncture points by supporting influencers within a broader, goal-based Theory of Change felt like a workable scope. The Future of Fish Case Study combined design research and experimentation at a sector systems level, demonstrating how a small but strategic design role can have an impact. Dahle (2019) directed effort at awareness building and capacity building, and this promoted social change and shifted the sector via a small number of changemakers.

Comparing these project formats with Irwin's (2011) implications of Living Systems principles for design, I envisioned an approach for my project in which the core activities of my research would likely feature *iterative cycles* of the activities set out in Table 8, as time and scope allowed.

Table 8. Core Case Study activities

ACTIVITIES	DEFINITION
Relationship building and initiation	• Getting to know sector stakeholders • Putting out an 'ask' for collaboration • Allowing time for relationships to develop and opportunities to emerge • Co-convening collaborations and initiatives
Situating	• Deep Immersion e.g., immersion in the context, culture, and life 'to see familiar settings as 'anthropologically strange'" (Genzuk, 2003, p. 3) • Semi-structured interviews to identify barriers, constraints, and opportunities for transition • "Co-sensing: [going] to the places of most potential; observe, observe, observe; [listening] with your mind and heart wide open (Scharmer, 2009, p. 18) • Sensing, Sensemaking, and Synthesis, Identifying patterns and themes • Participatory engagement and research to build (shared) understanding
Framing and reframing	• Identifying Opportunity Areas for responses through Framing • Developing frames (Schön, 1983; Dorst, 2015b) or frameworking (Baskerville & Myers, 2015): Arriving at different ways to see the 'problem' or the opportunity, the situation and its dynamics based on sensing and sense-making; Playing with multiple frames to test their potential; Iterating frames over time
Developing responses and experimenting	• Developing ideas into responses or amplifying existing ideas; Elaborating, refining, edit and reinterpreting ideas • Collaborative design experimentation through 'working groups' • Supporting and amplifying the work of change-makers • Engaging in sub-projects to develop prototypes and experiments with collaborators—to test ideas, as design provocations, and with an eye to enabling societal inquiry and reflexivity

Testing, learning, and iterating	• Packaging project findings into useful outputs, sharing findings, validating with those who have contributed • Testing and reflecting to learn; reflective and reflexive practice
Envisioning	• Creating and testing a Theory of Change and Theory of Action • Looking for opportunities to develop visions for a Regenerative Agriculture

Figure 39 presents Case Study activities in three phases 1) Initiate and Situate, 2) Reframe, Respond, and Envision, and 3) Harvest.

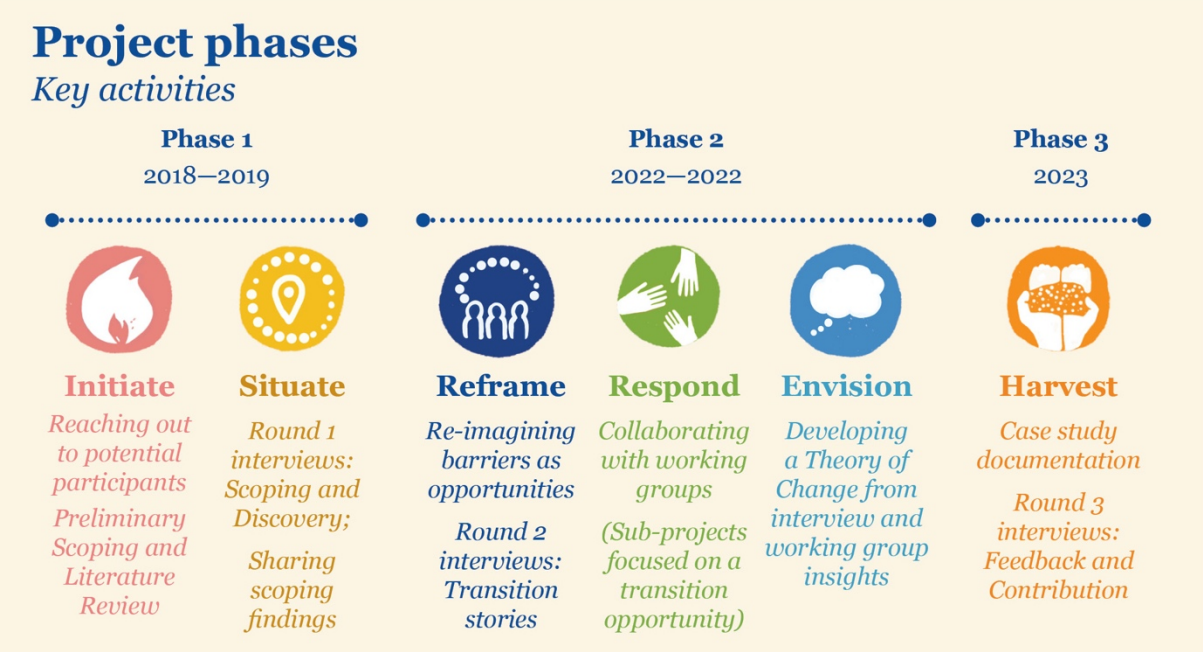


Figure 39. Summary of the Case Study project phases

5.4 Testing and iteration

To assess the quality, impact, and value of the Case Study as a design project implies to me, as a designer, undertaking testing and validation of results.

Defining the term 'testing'

Design-based testing approaches have their own protocols and measures. The concept of 'testing' or 'validation' in design approaches signifies a process of sharing thinking, ideas, and results with participants (previous and new) to get feedback that will assist in assessing potential. The feedback that is provided will validate or invalidate what is presented, help establish what is valued, and thus inform the next iteration or direction. The concept of testing serves a dual role in this research: it is used to guide the unfolding Transition Design project and to inspect research validity and value resulting from this research.

Factors for testing

In qualitative, sociological, Action Research, and design-based approaches, the ultimate assessment of validity and value comes from participants. But there are a range of factors, from both the academic and practice perspectives, that I can attend to as researcher-designer that will contribute to the validity and the value of this research, as discussed in Chapter 3, and summarized in Table 9: Rigor in process; rigor in reporting, and transferability of value. These factors also help clarify what to look for when testing for validity and value.

Table 9. Factors that establish the validity or value of qualitative research

CATEGORY	FACTORS THAT ESTABLISH VALIDITY AND/OR VALUE OF THE RESEARCH
Rigor in Process	• Thoroughness of planning, undertaking, and reporting the research • Choosing appropriate research and design methods • Agreement to methods from participants • Rigorous implementation of methods
Rigor in Reporting	• Disciplined – Reporting includes disciplined project documentation and identification and discussion of themes • Internal validity – research documentation is consistent, ideas are congruent

	• External validity, reliability, and 'Interpretivist' objectivity – research documentation is consistent with the information that has been provided and can be validated externally. Research captures the words and intent of participants, as validated by participants, in an 'Interpretivist' manner Multiple perspectives represented faithfully • Social Constructivism - Respects local, contextual knowledge and expertise; Respects how others see reality whilst holding that reality can be shaped • Avoids claims that the research findings can be transferred, generalized, or applied any further than is realistic and practicable • Acknowledges the researcher's own perspective, bias, and values • Pragmatist and Critical Realist – Looking for what works, for whom • Credibility, dependability, and confirmability of the research – The extent of the trustworthiness of the study and the quality of the understanding gained
Transferability of value	• Usefulness of the insight • Identifying insights, theories, and interventions which participants feel have the potential to contribute to Regenerative Agriculture transition • Transferability of research to other Transition Design projects and Transition Design theory more broadly • Work is generative — it leads to other work, ideas and thinking, it creates energy

Design practice offers factors that can help assess early-stage ideas or concepts for value and validity. In design school I was taught to analyze work, like ideas for logos and ad campaigns, and discuss what was and was not working about each fledgling design. Through the critique process—called a Design Critique or Crit—we would discuss the designs or design elements that seemed to be working. Strong ideas had a habit of standing out, people gravitated toward them. A peculiar language emerges when people discuss why designs do (or don't) have potential. For instance, you might encounter comments like: "I think this one has legs", "it's like the design is making itself", "that's so simple, but powerful", or "it just feels like a bunch of different bits smooshed together", and so on.

In the critique process I was taught three factors which express the *potential* value of design concepts in early stages: congruence, elegance, and generativity, as defined in Table 10. Concepts that pass these tests often go to the next step; concepts that don't pass these tests get reworked and ultimately may be tossed out. These tests help to gauge potential value early on, directing investment to ideas that demonstrate potential even before viability, feasibility, and usability

tests can be conducted, and long before there is quantifiable evidence that the ideas or concepts will address real world challenges.

Table 10. Three early-stage factors to assess *potential* value

TEST	DESCRIPTION
Does the design—idea, vision/future, concept, response, frame, etc.—have…	
Congruence	Does the design have: • Fidelity to itself, internal coherence? It follows its own logic and algorithm, its own pattern language. Consistency, harmony, compatibility. Self-similarity, cohesiveness, coherence. All the parts belong together. • Congruence with intentions? It is honest to its own ethic. • Congruence with existing mental models? Or it introduces a new mental model, or frame that revises existing mental models in a way that adds new insight and works better in reality. It reveals patterns. In university, when our work didn't have congruence, Professor Ronald Arnholm would ask us: "Did your brother come visit this weekend?" When answered with confusion ("But I don't have a brother"), the professor would cheekily reply, "Well it looks like two different people worked on this." He had a few variations to flag congruence issues.
Elegance	Does the design have the following qualities: • Aesthetically pleasing, beauty? • Deceptive simplicity? The idea may look like it is simple but holds complexity and works at many levels. Contradictions and requirements are well resolved. In Permaculture this follows the principle of one thing doing many jobs. • Completeness, wholeness, balance. No niggles. And no hair out of place, even if it is a deliberate disheveled mess. Adding more or removing more would disturb. The center holds; it has a durability and its own gravity. It is satisfying. • In "flow", working in tune with what's going on. Does it feel like somehow it existed already, or needed to exist?
Generativity	Does the design have: • Energy and momentum? Do people get excited? Is it desirable? Does it give life to other ideas and manifestations? Do people attribute positive energy to it? Does it feel life-giving? • A life of its own? Does it "have legs?" Do you show an idea to someone and then a rough printout turns up proudly taped to their notebook? Do you say something and then hear it repeated everywhere? Does the design, "appear to be making itself" (Schön, 1983, p. 102)? Does the idea get stolen? Is the frame "fruitful"—does it lead us to productive thinking and action (Dorst, 2015b, p 78).

	• A fractal quality? Can you see it replicated, reworked in many ways for different purposes? Does it spawn a million memes? Can it scale up and down and sideways? Does it contain the seed of many other promising ideas, a seed of the future? • A way forward? Because of this design, I/we can move forward, next steps are visible. It inspires new action, opens a door, lights a path, propels us into the future, compels the future forward—it draws out the future that wants to come into being.

These three factors to assess potential value—congruence, elegance, and generativity—perhaps have an esoteric tinge to them. But the ability to feel out potential is critical for reflection-in-action and decision-making processes when assessing appropriate methods and responses. The concept of feeling for the way forward, sensing, is highlighted in Theory U.

Over the course of the Case Study, the validity and value factors together with these factors for assessing potential helped me make sense of participant feedback through testing cycles.

Instances of testing throughout the project and research

The validity and value of a practice approach depends heavily on the validity and value of the project findings, as noted in Chapter 3 and Table 9 above. If project findings are not valid or had no value, this would invalidate the approach taken and raise questions e.g., about Transition Design. In this research, much weight is given to this interdependence, and the perspective of project participants and stakeholders was vital to assessing value throughout the process.

This research was tested with agricultural stakeholders in many ways throughout the Case Study. The research scope and approach were tested through qualitative interviews during the scoping / discovery phase. The framing, accuracy, and value of findings from the discovery phase were tested by asking for feedback and edits from participants. Gaps in the market and transition support needs of farmers were tested through a TransitionAg survey. Barriers, opportunities, transition insights, and a definition of Regenerative Agriculture were tested for resonance in 8 workshops across NSW. Working group relevance was tested through working group activities. The overall validity and value of this research and the Field Guide were tested through a final round of interviews with 18 people, including members of working groups, agriculture changemakers, and sustainability transition / design practitioners. The Field Guide and Transition Design framework were iterated based on this feedback.

Chapter 6
Case Study

About this chapter

This chapter further introduces Regenerative Agriculture, and then narrates the Case Study project as it unfolded. It notes design methods used, and how key developments (e.g., events, findings, and reflections etc.) influenced any (re)framing of the approach and responses along the way. The narrative focuses primarily on process, and then dips into context for key discussions. For further immersion into Regenerative Agriculture, refer to the Field Guide. Scoping Findings are also available for download on the TransitionAg website: https://transition-ag.com/projects-and-research.

6.1 Regenerative Agriculture—further context

Jumping into a contested context

I selected Regenerative Agriculture as a focus for this Case Study project because it was perceived by scoping phase participants as holding real potential to impact sustainability at scale if successful transition increased in the near to intermediate future. The extent to which regenerative approaches to agriculture may or may not contribute to global sustainability is being researched and debated around the world, as highlighted in Chapter 4. This debate is tied to the contested definition of Regenerative Agriculture, which proved to be a key theme of the project and this research. This discussion will be visited multiple times over the course of this Case Study, and in the Field Guide as well.

Regenerative Agriculture definition and practice

Regenerative Agriculture has emerged amidst the contestation and complementarities among four prominent sustainable agriculture narratives, namely organic agriculture, conservation agriculture, sustainable intensification, and agroecology (Bless, Davila, and Plant, 2023).

Regenerative Agriculture draws from these areas of agriculture and origins include First Nations practices, which is a particularly sore point (to be discussed later in this chapter). Farming practices associated with Regenerative Agriculture include but are not limited to continual ground cover, multi-species cover cropping, limited or no tillage, high density rotational/ration grazing, using natural/biological inputs like compost, vermicast, fish emulsions, biochar, etc., increasing biodiversity above and below ground, natural pest control, low stress/stress-free stockmanship and self-herding, repairing hydrological function, and more. Participants stressed that there are potentially an unlimited number of practices that could contribute to regeneration and participants underscored the need to leave room for innovation in any definition.

Outcomes participants referenced include building soil health, increasing biodiversity, capturing carbon, improving the water cycle, promoting ecosystem function, delivering holistic benefits, contributing to farmer and community health, reversing climate change, etc.

Because the definition of Regenerative Agriculture is contested, I will preference the definition that came from this research.

Listening to farmers, Regenerative Agriculture was defined as a holistic approach to agriculture that achieves regeneration and production by working with the self-renewing qualities of nature.

Definitions as a rule try to avoid using the word that is being defined in the definition. In the case of Regenerative Agriculture, there is significance to breaking this rule: regeneration is the goal, and that goal is achieved through regenerative means. Outcomes are achieved where the means and ends are congruent. The question, ‘Is it regenerative (agriculture)’? is answered by, ‘Is it helping regenerate?’ The capacity for and quality of regeneration is the basis of agricultural production. This definition asserts that agriculture as a sector has a responsibility not just to exploit but also to contribute to regeneration. In this definition, regeneration applies across scales—micro, meso, macro, and meta—and does not just refer to environmental/ecological regeneration but to social and economic regeneration as well. Some argue that Regenerative Agriculture isn’t regenerative unless it is holistic (socially, economically, environmentally, and spiritually), unless it sits within regenerative and just cultures, and if it does not pay respect to and acknowledge the First Nations cultures, worldview, and practices that informed Regenerative Agriculture. Several participants emphasized that the definition should be open enough for

regeneration to be a journey and to make way for a plurality of approaches, meanwhile facilitating accountability for outcomes.

6.2 Overview of the project approach

Project approach

In Chapter 5, the project approach was described in three phases: 1) Initiate and Situate, 2) Reframe, Respond, and Envision, and 3) Harvesting. As an overview of the Case Study, Table 11 details the activities and methods used during each phase.

Table 11. Case Study project—Activities and methods by phase

TIMING	PHASE	ACTIVITIES	METHODS
Mid-2017 - 2019	Phase 1. Initiate & Situate	**Framing**—Iteration of the research question and project topic; Scoping the research	Literature review; Semi-structured interviews; Testing the research and project topic; Reframing
		Discovery—Scoping the project and sector immersion	Visual systems mapping; Semi-structured interviews; Ethnographic immersion into the sector
		Discovery Validation—Testing discovery findings with participants	Development of a written findings report and highly visual findings presentation (illustration, graphic design, systems mapping); Identification of barriers and Opportunity Areas; Testing, validating, and iterating discovery findings with participants
		Building relationships	Initiating conversations, inviting collaborations
2020-2022	Phase 2. Reframe, Respond, and Envision	**Working groups and business experiment—**Joining or forming and participating in multiple change making projects	Analysis and synthesis; Visual synthesis; Workshop design and facilitation; Generative tools; Prototype testing; Iteration and reframing of barriers and Opportunity Areas; Prototype testing; Lean startup; Business model canvas; Value proposition testing; Visual communications; Ethnographic immersion into the sector
2023	Phase 3. Harvesting	**Final project output—**Project synthesis and development of final project output, the	Personas, Theory of Change, Design provocations, Visioning, Visual communications

		'Designing Regenerative Transitions' Field Guide	
		Final testing—Testing and iterating the Field Guide	Testing via evaluative semi-structured interviews; Reframing and iterating

Participation

Over the course of this project, 511 people participated in various design activities that I supported or convened as part of interviews, working groups, and/or a business experiment, as described in Table 12.

Table 12. Summary of Participants

PHASE		ACTIVITIES WITH PARTICIPANTS	NUMBER OF PARTICIPANTS			
			INTERVIEWS	COLLABORATORS	WORKSHOPS/EVENTS	
1	**Initiate & Situate**	Interviews: Scoping and Discovery	32			
2	**Reframe, Respond & Envision**	Interviews: Transition journeys	8			
		Working groups		27	10 collaborations	
		Compost Buddy and Transition workshops			8 x in-person workshops 5 x Facebook Live events	160 193
		TransitionAg			Survey and prototyping	29
		WWF Local Learning Labs			3 x in-person Labs	~65
3	**Harvest**	Field Guide Feedback Interviews	20 *(9 new)*			
Totals		TOTAL: 511 people engaged	49	27 *(12 also interviewed)*	16 events	445

Semi-structured interviews—49 participants

Semi-structured interviews were conducted over the course of the project in three rounds, with a total of 49 people (12 were also collaborators). Each round of interviews took a different focus: 1)

one round during research scoping, sector immersion and discovery for barriers and opportunities at the beginning of the project (32 interviews), 2) a deeper dive into transition stories to complement working group activities (8 interviews), and 3) an evaluative round at the end of the project to review impact and further potential (18 interviews total with 9 new). Stakeholder categories included:

- Innovators / early adopters advocating change – 8
- Regenerative / ecological farmers – 5
- Farmers in transition or working toward transition – 8
- Skeptics – 2 (spoke to more but they declined interviews)
- Consultants and advisors – 7
- Ag extension, research, and evaluation – 4
- Educators and academics (2 also regen farmers) – 5
- Supply chain – 2
- Advocates of ag change / regen ag – 2
- Social / design / transition innovation practitioners – 6

Working Groups

Over the course of this project, I initiated and/or contributed to 10 different collaborations e.g., working groups (27 people total), including: a project to grow the market for source separated recycled organics, an advocacy cooperative, a research and knowledge hub concept, an idea for a course focused on the financial and business side of transition, a group working to scale landscape and hydrology repair, and a class redesigning a 20-hectare section of a city park. Many of the collaborations progressed, some did not. Working groups are discussed later in this chapter.

Workshops

Two working groups involved workshops.

For the source separated recycled organics working group, 160 people participated across 8 workshops (in-person), contributing via group discussions. An additional 193 people participated via 5 Facebook Live events once COVID prevented in-person interaction. Of the 160 in-person workshop participants, roughly 35% had already transitioned to Regenerative Agriculture, 40% were in transition, and 25% were potentially interested but had not yet transitioned. Of the total, roughly 10% were actively working to promote or support Regenerative Agriculture.

Approximately 65 people participated in the WWF Local Learning Labs.

TransitionAg

Unexpectedly, this research led to a business experiment, TransitionAg. As part of informing the development of TransitionAg, I conducted a survey to test offers and better understand farmer transition support needs. A small handful of farmers and potential advisors participated in live prototyping of TransitionAg referral services.

6.3 Phase 1 - Initiate and Situate

Steps of the Initiate and Situate phase

The Initiate and Situate phase for this project involved four major activities:

- Framing the research— Iteration of the research question and project topic; Scoping the research
- Discovery— Scoping the Transition Design project and immersion in the sector
- Validating discovery—Testing discovery findings with participants
- Building relationships

Framing the research

As is standard process, framing the research began in the PhD application stage. My topic took several twists and turns before I finally settled on Transition Design practice as an area of research and Regenerative Agriculture transition as a project focus. The literature review took two major directions: 1) literature relevant to Transition Design practice including existing empirical cases and 2) literature about agricultural transition, including the uptake of innovation in agriculture.

My first line of research led to the concept of governing ecosystem services e.g., collaborative management of the ‘services’ that the landscape provides such as water, temperature control, wind and weather protection, climate regulation, etc. Preliminary research revealed there were a few regions in NSW that might be ready for such an approach, but I needed to validate the feasibility with relevant stakeholders. I prepared research questions and materials for a phase of fieldwork, specifically semi-structured interviews, and obtained ethics approval mid-2018.

Participant responses in the first interviews didn't invalidate the idea of governance of ecosystem services, but they turned me to a more direct route to influencing sustainability in agriculture: increasing the uptake of Regenerative Agriculture. Regenerative practices in how they are *currently* practiced in agriculture have been around for 20-30 years—millennia if acknowledging the First Nations practices that informed them—and are growing in popularity. It was frustrating to participants that more farmers had not transitioned their properties earlier/faster to what they felt was a more ecologically and financially sustainable approach, and participants sensed that growing interest that might lead to change. I was urged to take this question on as a focus.

With this shift, I went back to the ethics committee and obtained approval for a revised approach to scoping in the first weeks of 2019.

Scoping Research

With ethics approval for a revised approach, I commenced a full discovery process (scoping research) for the Initiate and Situate phase beginning in early 2019. I traveled around my state, New South Wales (NSW), in a rented campervan named 'Fish'. I visited 12 properties, 8 of which used regenerative methods. 32 people were engaged, and 25 agreed to participate in the semi-structured interviews. Because I was unknown to the sector, many people wanted to meet me first, hear about the research in person, and then decide if participation was right for them. Often interviews could only be scheduled once people knew I was going to be in the area.

My interviews sought farmers who were interested in or on the journey of transitioning to Regenerative Agriculture, or proponents who had a perspective on what works to enable transition. This is a relatively small number of people in NSW, Australia. Finding participants relied heavily on relationships and the small network here, and on finding people with whom the ideas of Regenerative Agriculture resonated at the time. Contacts were obtained from previous research e.g., participants who had given permission to be contacted for future research, via snowball sampling, through outreach to the growing Regenerative Agriculture Facebook group, and occasional 'cold calling'.

Interviews were analyzed and coded thematically based on sociological traditions, as were all rounds of interviews in this research (Gray, 2004; Saldaña, 2009; Guest, MacQueen and Namey, 2012; Miles & Huberman, 2012; Bryman, 2016; Braun et al, 2018-9).

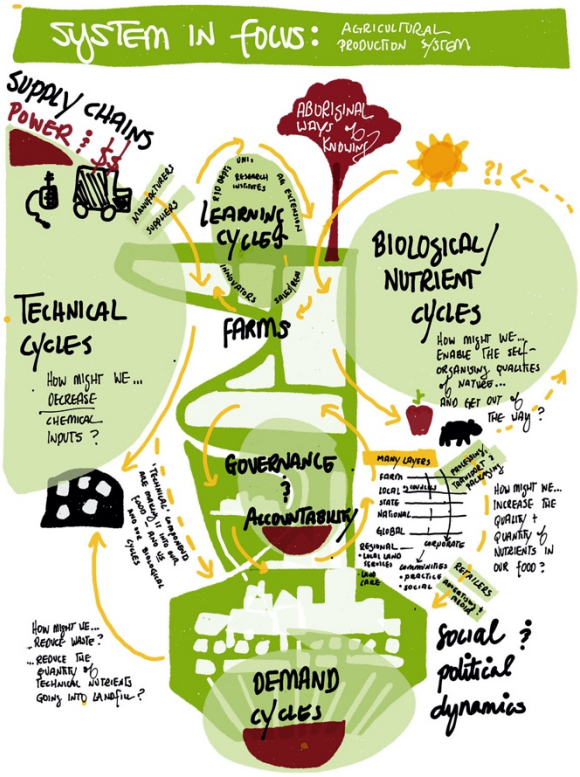
I also used a generative tool, a map of our agricultural production system, during the interviews. As described in Chapter 2, Generative tools are interactive, co-creative activities conducted with

participants to stimulate thinking, spark ideas, and build agency (Irwin, Tonkinwise and Kossoff, 2015b). During generative activities, participants collaboratively add to knowledge, surface ideas, and develop responses.

At the start of the interview process, I had a basic, illustrated map of the agricultural production system. Participants were asked to consider if the map was a complete representation of the agricultural production system, and then the map was used to stimulate thinking about the barriers and opportunities for transition. Each participant's contributions were layered onto the map successively, building a shared picture of the system.

With each interview, participants added more detail. After a half dozen or so interviews I reached a saturation point—participants did not have further additions or edits. The before and after maps are shown in Figure 40.

Before Scoping interviews (11-09-2018)



After Scoping interviews (11-02-2020)

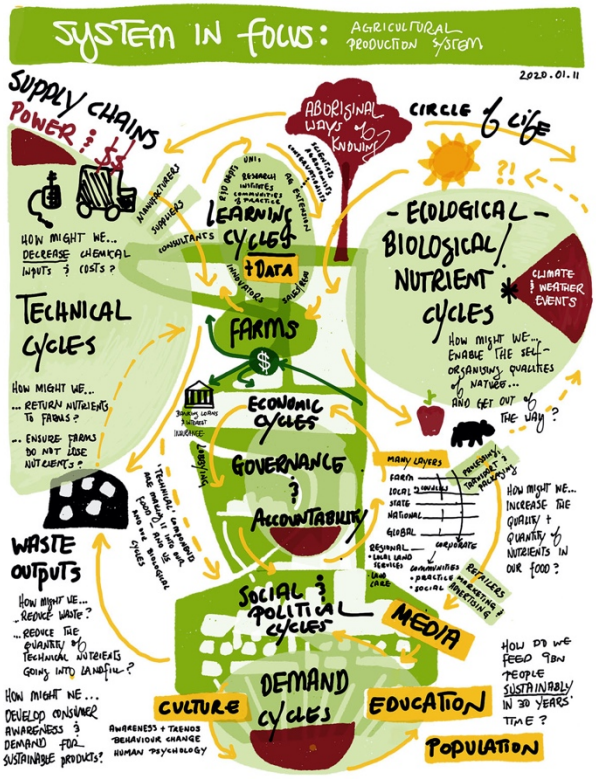


Figure 40. Iteration of the 'System in Focus' map

In the interviews, I acknowledged to participants that there are many other ways to represent the agricultural production system.

In the process of co-creating this map, participants described barriers and enablers in terms of cycles that impacted them and how those systems are linked—weather cycles, political cycles, market and consumer cycles—and so the map is drawn based on the concept of many cycles impacting farmer choices, their leeway to make change on-farm, and the exchange of value in the form of products from farm to consumer and (ideally) back to the farm (e.g., as payment but also through waste cycles). This version centers the farmer perspective, embedding (maybe burying) the farm—like the earth beneath our feet—underneath and overlapped by other layers, showing how interrelated cycles (ecological, technical, social, consumer, political, and economic cycles) interact with and impact farmer decision-making.

One participant suggested to revise the map to preference the ecological perspective, which would be a next logical iteration aligned with a 'regenerative' mindset and would provide a comparative counterpoint to the human-centered perspective.

Scoping Validation—Second round of testing

Once I had analyzed the interviews, I developed a detailed, long-form findings report and a highly visual summary presentation, as is consistent with my professional practice. The report and the presentation discussed interview themes in detail, and the presentation offered a synthesis of the project up to that point. Both the detailed findings report, and the presentation are available on the TransitionAg website, https://transition-ag.com/projects-and-research.

In a first round of testing the scoping findings (also referred to as validation), interviewees were invited to provide feedback on the themes, quotes in both documents, and overall findings. As per qualitative methods, sections where participants were quoted had been de-identified so that they could be assured that I would protect their identity. Individuals were provided with their own participant codes and sections where they were quoted so that they could ensure I had represented their perspective according to their wishes. They requested edits and we discussed what they hoped would come across in what was conveyed.

Participant feedback was rich and involved some robust, lively conversations to unpack key topics. Both the report and the presentation were updated multiple times. The process provided assurance that the research had appropriately documented the many different perspectives and conversations—at a point in time, among these participants. The themes and the synthesis then provided a basis for Opportunity Areas, an emerging Theory of Change, and the next phase.

The validation stage overlapped with a second round of fieldwork and start of the Reframe, Respond, and Envision phase in January 2020, just after the devastating bushfires that ripped through the states of New South Wales and Queensland in Australia. Travelling in another campervan (sadly with less panache than the Fish), I met participants who were interested in discussing the findings. I also spoke with new participants to discuss their transition stories.

Reflections on the Initiate and Situate phase

Iteration of barriers, Opportunity Areas, and strategies that enable farm transition

Holding the goal of increasing uptake of Regenerative Agriculture, I took a systems-shifting approach in which I looked for ways to enable transitions from a systems perspective and to amplify the work of changemakers already involved in the sector. In interviews, that meant I firstly looked to identify barriers to transitions, opportunities to support transition, and known transition strategies—not just for individual farmers but also at the level of the sector and social awareness, narratives, and visions. These correspond with the idea of looking for ways to enable transitions across the systems levels of the MLP. Secondly, working with the systems change incubation strategy from Dahle (2019), I sought to amplify the work of known changemakers by looking for opportunities to collaborate with them in their work (working groups).

Barriers, opportunities, and transition strategies were identified iteratively over the course of the Case Study project, through successive layers of literature review, scoping interviews, deep dive interviews, and working groups, including in workshops. The iteration continued all the way through the development of the Field Guide at the end of the project, and I anticipate that iteration will continue after this research has concluded.

Table 13 reflects this iteration. Themes are loosely ranked, and that ranking was predominantly influenced by Catalyst as a Compost workshop participant feedback and TransitionAg survey response inputs. Some additions/distinctions are based on workshop input, like ‘markets and distribution’ and ‘scale and distance’. Some of the items have been re-worded, for instance ‘big money and big power’ is now described as ‘vested corporate interests.’ I note the influence of the work of Iles (2021), particularly the paper ‘Can Australia transition to an agroecological future’, in articulating structural lock-ins and massification strategies. I also note the influence of First Nations discourses, ally perspectives, and social justice criticisms of Regenerative Agriculture and sustainability transitions (Smith, 2012; Suchet-Pearson et al., 2013; Land, 2015; Movement

Generation, 2016; Hawken, 2017; Cultural Survival et al., 2020; Yunkaporta, 2019, 2021a, and 2021b; Fassler, 2021).

These themes are discussed in the Case Study in the Field Guide (pp. 48-102).

Table 13. Iteration of themes across phases (Barriers and Opportunities)

ITERATION	1	2	3
PHASES	**Initiate and Situate**	**Situate, Reframe and Respond**	**Envision, Reframe and Respond**
TIMING	After Scoping Interviews	After Interviewee feedback and incorporating Deep Dive Interviews focused on Transition Stories	After working groups and associated workshops
THEMES			
Barriers—holding the status quo in place	Social pressure Financial preparation On farm choices Succession The financial attraction of conventional farming; Big money and big power Farmer's identity and pride Controlled trial methods	Definition of Regenerative Agriculture Financials and planning Constructing your own management approach Measurement Supply chain Succession Social pressure Fit for small/medium sized farms The financial attraction of conventional farming; Big money and big power	Definition of Regenerative Agriculture Education, constructing your own approach Markets and distribution Scale and distance Policy and regulation Supply—relevant equipment and natural inputs Financials and planning Measurement and science Succession Social pressure Vested corporate interests Climate History of settler colonialism Current agricultural paradigm: Featuring practices of European (not local) origin; Reductionist, extractive, and productivist cultures
Opportunities—how we might create the conditions for transition	Supporting farmers to transition—*how* to transition (Re)Designing education Linking farmers to mentoring Developing policy Promoting demand-side mechanisms Supporting different people or groups Taking a 'strategic extension' approach	Supporting farmers to transition Developing shared framing (Re)Designing education Linking farmers to mentoring Creating suitable supply chains, Developing policy mechanisms Promoting demand-side mechanisms Taking a 'strategic extension' approach Creating opportunities for connection to land and	*Ordered by Opportunity Areas* **(C) Narratives, Discourse, and Cultures** The definition of Regenerative Agriculture Reconciliation, reparation, and relationships Consumer awareness and demand (**B) Sector Capacity** Science, measurement, and research Finance, investment, and insurance Supply, retail, processing, and distribution Local, global markets

	Creating opportunities for connection to land and learning from Aboriginal ways of knowing	learning from Aboriginal ways of knowing	Governance, incentives, and policy Collaborative regeneration initiatives
Transition strategies—known steps individual farmers can take to transition	Not identified at this point	Holistic decision-making Building ecological literacy Improving landscape/ecosystem function and design Address system barriers Building the toolbox A regenerative definition of Regenerative Agriculture	**(A) Farmer Transitions and Capability** Education, Extension, and Support—inclusive of agroecological skills, ecological literacy, and building the toolbox Landscape Repair Transition Pathways

Validation as a process that supports relationship building

Seeking participant feedback and iterating findings is not exclusive to design, but the practice of testing is an essential element of the design stance (as discussed in Chapter 5), particularly for human-centered or user-centered practices. In this research, testing and iterating scoping findings was a critical enabler of the project from start to finish.

At the beginning of the Case Study project, I didn't have any relationships in the sector. I found that participants who engaged with the scoping interviews were genuinely interested in the research, often had an ethic of 'giving back', may have spoken to me based on the good word of someone else they knew, and—I speculate—may have seen potential for benefit. At the point of completing interviews no one was willing to participate further—yet. There was an air of 'let's wait and see.' The process of conducting interviews was not enough to build relationships that would support collaboration.

Going back to participants for their feedback on a detailed findings report, as described in the previous section, was essential to building relationships that would support collaboration. Participants did not have to engage in the feedback process, and some did opt out at that point. Ensuring people are represented as they choose, working transparently, and inviting ownership of their contribution helped to build trust. From there, it was the robust conversations we had around their feedback that opened the opportunities for collaboration.

Based on the outcomes of the validation conversations, participants were asked if they would consider collaboration opportunities, or be willing to point me in the direction of potential collaborations. Once some participants opted into further discussion or connected me with their

contacts, we worked through the potential for collaboration over time. Planning for that elapsed time in the project plan was a necessity.

In this way, the validation activities helped serve the purpose of ‘Initiation’. Without this phase of validation, the rest of the project would not have been possible.

Holistic Decision Framework

My very first on-farm interview was a bit of luck. An interviewee ended up not being able to meet me and, by way of apology, introduced me to a friend. This other friend was a well-known early adopter of what later came to be known as Regenerative Agriculture. The farmer generously gave me—an unexpected visitor—a tour of his property, master plan, and grazing charts, orienting me to what I was seeing. When I asked about how farmers can be confident in their decisions, he stopped the ute, opened the glove box, and pulled out a well-creased copy of the ‘Holistic Management Framework’, originally from the book ‘Holistic Management: A New Framework for Decision Making’ by Allan Savory and Jody Butterfield (1999).

During the project that happened three times. Figure 41 shows the Holistic Decision Framework that participants shared with me, which is comprised of eight elements: The ‘Whole under management’, Holistic Goal, Ecosystem Processes, Tools, Testing Questions, Management Guidelines, Planning Procedures, and Feedback Loop (Savory and Butterfield, 1999).

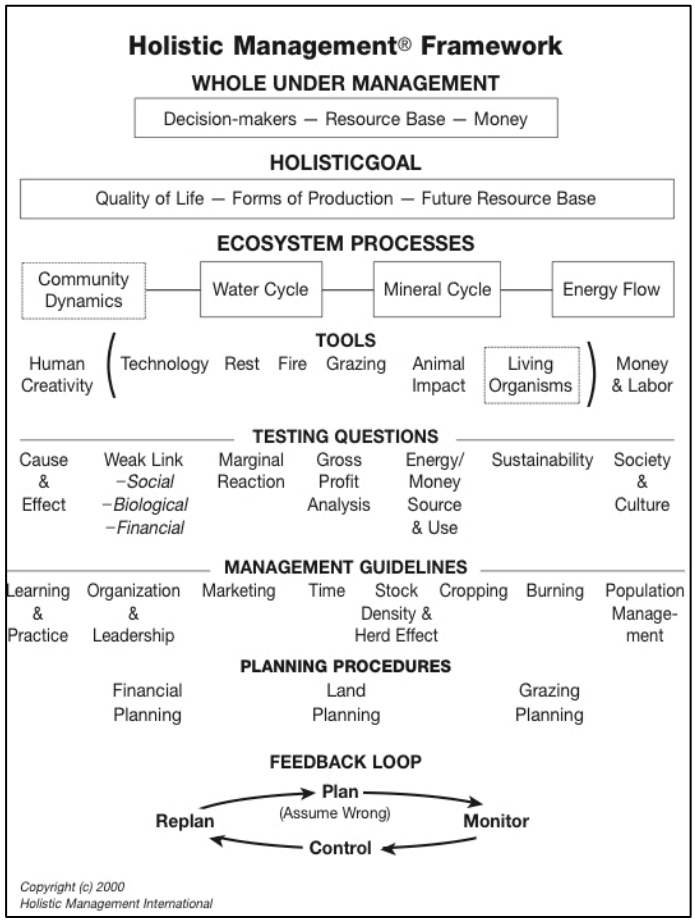


Figure 41. The Holistic Management Framework (Savory and Butterfield, 1999, p. 51)

Participants spoke extensively about the importance of having a framework for decision-making e.g., the Holistic Management Framework, or Holistic Decision Framework as it is sometimes called. Some suggested that the decision framework was perhaps even more valuable to them than the farming practices taught in Holistic Management. The extensive discussion of the value of holistic *decision-making* signifies that building farmer skills for navigating on-farm choices is a key enabler of transition to Regenerative Agriculture.

Through a 'Feedback Loop', the Holistic Management Framework provisions for experimentation, even if not all proponents use it that way. The feedback loop follows a process cycle that may be repeated until desired results are obtained: plan (assume wrong), 'act' is implied, then monitor, control (roughly, evaluate and assess), and replan. It has echoes of Shewart's 1939 plan-do-check-act (PDCA) cycle (Dubberly, 2005). The language comes from a different generation, but there are clear links to design processes as discussed in Chapter 5. On the Holistic Decision-Making website developed by the late Dan Palmer (2018), there is a version of the holistic decision feedback loop that uses language designers might better recognize in a cycle that calls to mind the Lean Startup process (Ries, 2018).

There are numerous examples of the Holistic Management Framework being used beyond grazing, for instance in Permaculture (Bradley, 2010, 2018; Palmer, 2018). But applications go further than food and fiber production. In the same way that Bradley and Palmer discuss, participants in this research talked about using the framework not only for management decisions, but for life decisions and to aid important family discussions. Interestingly, I found that I could better explain design to farmers and land managers by relating it to the Holistic Management Framework.

There is opportunity to further research how holistic decision-making may be adapted for Regenerative Agriculture transitions as well as for other transition initiatives, including Transition Design. There is a brief discussion of how it might translate in the Field Guide (pp. 36-37).

6.4 Phase 2 – Reframe, Respond and Envision

The Reframe, Respond, and Envision phase began with the completion of a first round of scoping interviews (January 2019) and Stage 1 assessment (July 2019). At that point, I had begun getting feedback on the scoping findings report (late 2019), initiated a second round of interviews (transition story interviews starting January 2020), and had put out the offer to participants to collaborate on transition projects. Because I had added interviews specific to understanding what supported transition and had a lot of feedback to work through, this stage began with iterating project findings based on feedback and drawing out new insights. Over the course of that time, the 2017-2019 drought had broken in NSW, only to be followed by horrific bushfires from the end of 2019 through early 2020, the onset of the COVID-19 pandemic, and then three cycles of La Niña, which resulted in some of the worst flooding the state has seen in recorded history. The lockdown phase of the pandemic was the period when I was working through my next ethics application, and so there was some delay related to the pandemic but, overall, the timing still worked. My ethics application for Stage 2 was approved in February 2021, and I was able to contribute to in-person collaborative activities during a window of time when lockdown restrictions eased for people living in remote and rural areas. As a result of the pandemic, many of the collaborative activities were conceived for online-based approaches, like online tools, learning, and coaching.

Where and how to Intervene—Reframing Barriers into Opportunity Areas for Responses

As discussed in Chapter 4, Transition Theory as well as design practice provide rationale for where and how to intervene in a system to influence change and to have the most impact—whilst also redesigning the many elements of a system simultaneously. For transition to occur, we must create the conditions, capabilities, and capacity for system transition.

Creating conditions for transition is not just a matter of supporting farmers to transition, it also involves strategies to shift the existing regime. As Transition Theory anticipates, some conventional farmers and agricultural stakeholders were already responding defensively to Regenerative Agriculture:

> *There is real social unacceptability of the regenerative approach or natural farming. It almost pits neighbors against neighbors. To me, if you are able to explore the social blockages, why it hasn't been taken up, that would be helpful…*
>
> *Incredibly strong well-resourced departments are undermining it. It's a threat. No wonder it's almost become an underground movement. I think to explore why is there so much negativity – when a farmer does something different on his farm – would be helpful. When a farmer doesn't take traditional best practice advice and still achieves as good or better outcome, why does that agent see it as criticism? There is a lot of stuff bound up in it (120 Holistic Management consultant).*

For transition to occur, several participants felt that I/we needed to find ways to engage constructively with difference and to find ways to promote a plurality of approaches (discussed later in this chapter). As a route to constructive engagement, I was directed to appeal to what is shared, to avoid shaming, and to emphasize the focus on long-term viability of farming. I was urged to use language and take a social approach that was positive, non-judgemental, and non-threatening. This was based on a conviction that "there is a green core in just about every Farmer" (126 Organic Farmer and Academic), that current choices are limited by a need to survive, and that farmers will make different choices when they have the capacity to do so:

> *Most of our farming families love their land and want to look after that and they–mostly–recognize the mistakes of the past. But we are pushed by survival. We can't complain or b*tch about it. We [just have to] keep pushing, keep learning (108 Industry entrepreneurs & former farmers).*

Theories of complex systems and transitions, as discussed in Chapter 4, describe how decisions to make changes are personal and social, based on capacity, capability, and systems conditions. One

participant shared their approach to building capacity in four steps: 1) Positive engagement 2) Building understanding around the topic 3) Practice skills and 4) Decision-making ability (129 Agroecologist and Extension Consultant). They explained more about their approach and how it supports transition:

> *Once people have got to that stage in a safe way they'll make a decision, a change…*
>
> *I don't talk about [negative impacts] …I would rather work on a more constructive approach: 'Be more profitable, more sustainable, better soil' etc. It just so happens that by building your capacity you are able to make a change…If you don't want people to change [then] scare the hell out of them…I could have come in with new ideas, but I didn't try to challenge the old paradigm…Trying to present info in a neutral non-judgmental way this is the key in how psychology is applied when challenging a paradigm…You can't expect people to change from the inside…Challenge people's understanding…in a non-threating way…*
>
> *Underneath it all you're building social connection, a social learning base, and peer to peer. That's how you influence beyond one setting. Humans are social. Unless you use that tactic, you won't get change (129 Agroecologist and Extension Consultant).*

In seeking out where and how to intervene to support Regenerative Agriculture transition, I combined this advice from participants with complex systems and transitions theory that underpin this research. Based on the process for identifying where to intervene set out in Chapter 4, I took the following steps:

1. Re-imagine barriers as opportunities
2. Identify nested but discrete systems layers following the Panarchy model
3. Cluster opportunities by system layer
4. Carve out Opportunity Areas by analyzing discontinuities across system actors, looking for areas of control, influence, and overlap. Include any disruptive frames
5. Define specific goals or Objects of Design named by participants or identified through analysis. These may include known enablers of transition that might be amplified
6. Iterate as needed.

The MLP/Panarchy analysis produced three systems layers by actor's sphere of control and influence: A) Farmer transitions and capability (Farmer's sphere/niche), B) Sector capacity

(Agriculture stakeholder sphere/regime), and C) Narratives, discourse, and cultures (Societal sphere/landscape). Over many iterations, opportunities were clustered into twelve Opportunity Areas:

- **A) Farmer Transitions and Capability**—Education, Extension, and Support (inclusive of agroecological skills, ecological literacy, and building the toolbox); Landscape Repair; Transition Pathways
- **B) Sector Capacity**—Science, measurement, and research; Finance, investment, and insurance; Supply, retail, processing, and distribution; Local, global markets; Governance, incentives, and policy; Collaborative regeneration initiatives
- **C) Narratives, Discourse, and Cultures**—The definition of Regenerative Agriculture; Reconciliation, reparation, and relationships; Consumer awareness and demand

Figure 42 shows how the Opportunity Areas relate to the system map, which is color coded by theme (System Layer).



Opportunity areas by theme

(A) FARMER TRANSITIONS, CAPABILITY	1	Education, Extension and Support
	2	Landscape repair
	3	Transition pathways
(B) SECTOR CAPACITY	4	Supply, processing, distribution, retail
	5	Finance, investment and insurance
	6	Science, research and measurement
	7	Local-global markets
	8	Governance, policy, and incentives
	9	Collaborative regeneration initiatives
(C) NARRATIVES, DISCOURSE AND CULTURES	10	The definition of regenerative agriculture
	11	Reconciliation, reparations, and relationships
	12	Consumer awareness and demand

Figure 42. Opportunity Areas by system theme (system level)

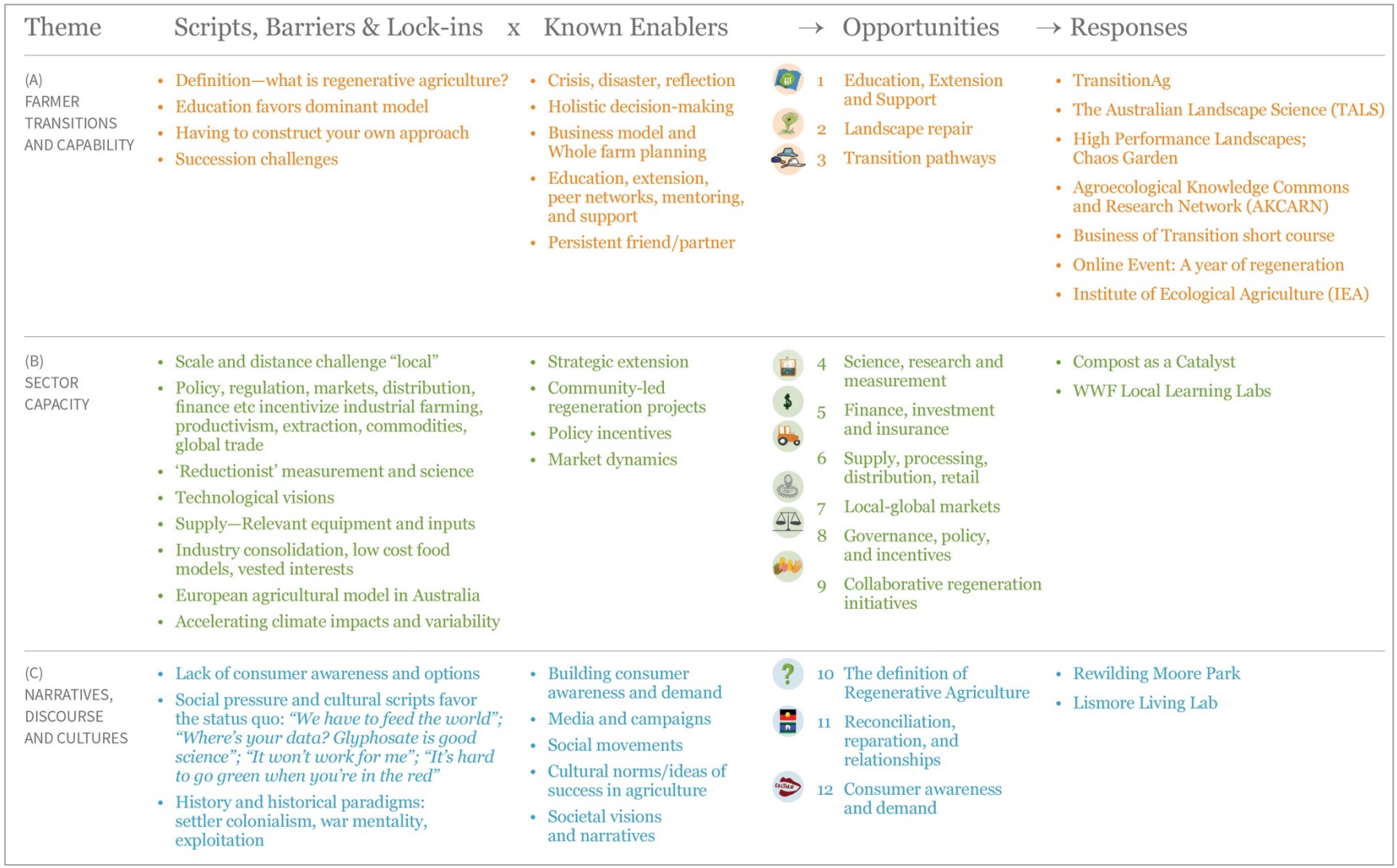


Figure 43. Reframing from Barriers to Opportunities and Responses (Field Guide, p. 67)

With Opportunity Areas established, I could begin the process of identifying suitable collaborations/working groups (Responses) to pursue. Following the logic of developing an 'Ecosystem of Responses' across multiple layers of the system, I felt it was important to undertake a diversity of collaborations and that there should be at least one Response for each systems layer. Figure 43 from the Field Guide (p. 67) tracks the relationship between barriers (inclusive of scripts and lock-ins), known enablers, opportunities, and the responses that I engaged in over the course of this project. The process of identifying suitable working groups is discussed next.

Collaborating with Working Groups to develop interventions

Collaborating with working groups made it possible to contribute to experiments that impacted different Opportunity Areas with the people from the agriculture sector, and so the working groups were a primary vehicle for changemaking in this Case Study.

In this section I will accordingly primarily discuss the development and contribution of the working groups to this research. I establish the role of working groups, how they were identified, and narrate the chronological unfolding of the working groups. The groups are described briefly, and I note their purpose, my role in the groups, and the extent to which they progressed. The discussion then moves to four working groups that progressed to a level of depth and led to ongoing collaboration/work in the immediate term—Compost as a Catalyst, Rewilding Moore Park, TransitionAg, and WWF Local Learning Labs.

The working groups, taken together, form my emerging portfolio or Ecosystem of Responses, which I hope to nurture over many more years and link with many other Ecosystems of Responses.

The role of working groups in facilitating transition

A change agent has available to them any number of ways of working to promote change. They may invent solutions, influence opinion, facilitate collaboration, procure investment, etc. In surveying the many ways to promote change available to me for this transition project, considerations were made for ways of working most relevant to the project (e.g., the transition need), most feasible for me within the scope of a PhD project, and most likely to promote change.

Facilitating collaboration through working groups dedicated to changemaking was chosen as a key form of intervention for this project because it fit the named criteria AND this way of working is associated with the potential to harness collective action to achieve systems-shifting change.

Taking a working group approach is an important choice for action in this research because ability to create impact is linked to both *how* we work (Theory of Action) and *what* we work on (Theory of Change). Working groups address an opportunity within a Theory of Change, may be formal or informal, and tend to come together around a cause or objective, creating change through a series of actions—which might include initiatives, projects, events, campaigns, a movement, etc. Collaborative working toward a specific outcome is well-evidenced for its *potential* to harness collective action to achieve change and the conditions that affect that potential, as documented in bodies of literature including (Participatory) Action Research and Collective Impact. This potential and the conditions are being documented in design as well. For instance, Yee and White (2016) discuss the 'Goldilocks conditions' for successful design in public and third sector projects. Collaboration with change-makers who are already deeply a part of the context (as per Dahle, 2019) helps contribute to the conditions that Yee and White outlined as being essential to the success of design activity: "community building, capacity, and leadership" (p. 7). This was key to my strategy—aligning with people who were already changemakers in the sector.

Collaboration with a working group is a way to support sustained change efforts over time, to a level of depth, as well. As such, I sought to identify working groups—either existing collaborations that I could join or groups I could help convene—focused on developing practical interventions to support transition to Regenerative Agriculture.

Defining 'working groups'

For this research, I defined a working group as people who agree to collaborate to progress a change agenda i.e., Regenerative Agriculture transition. They may collaborate as part of an initiative, a project, a business, a grant, etc. Because teams that work well together tend to stick together over multiple initiatives, collaborations often span multiple activities and develop multiple responses.

Working groups require participatory action-based principles, mindsets, and practices, but the design-based approach places further emphasis on looking for ways to include the role of form-giving, co-design, and co-production. New working groups could be formed as part of this project, or I could be invited to join existing working groups. I could take a range of roles in the working groups, including facilitator, co-designer, convenor and/or project lead, and coordinator, etc.

Working group topics identified based on Opportunity Areas in the Theory of Change

The topic area of the working group—not just the format—is also critical to the ability to effect change, and so I was looking for working groups focused on topics that related to the Opportunity Areas and emerging Theory of Change. To make an impact on the ability of farmers to take up Regenerative Agriculture e.g., to shift systems, I was looking for working groups that focused on at least one if not more of the systemic barriers or opportunities named in the Opportunity Areas.

Design processes also require an 'Object of Design'. Considering the nature of the opportunities and barriers that participants named in the scoping interviews, I identified the following possible 'Objects of Design':

- **Contributing transition insight** —Through ethnographic design research in combination with industry expertise, work together to go deeper into the farmer's experience to understand what is needed to enable and support farmers to transition, at scale. The Personas in the Field Guide are an example.
- **Creating the innovation ecosystem** — Envisioning and developing elements of the innovation 'ecosystem' needed for regen ag to become mainstream (potentially specific to a bioregion). The Compost as a Catalyst sub-project is an example.
- **Creating transition strategies** — Creating visions, strategies, pathways, and key messaging to support to transition to regen ag at scale. The 'Landscape Repair' Opportunity Area in the Field Guide is an example.
- **Developing and testing transition support programs or businesses** — Supporting a working group to research, design, test and iterate their program or business idea to increase the uptake of Regenerative Agriculture systemically, strategically, and at scale. TransitionAg and the WWF Local Learning Labs are examples.

Putting out the invitation

With these criteria for working groups in mind, a shared Scoping/Discovery findings with participants and I put out an invitation to opt-in to further participation. Options for further participation included:

- Further interviews – to go into more detail about what supports transition.
- Workshops and group conversations – to address topics related to transition.
- Working groups - to collaboratively pursue projects or initiatives.

Once I had put out the invitation, it took some time for opportunities for collaboration to take shape—which is quite normal for collaborations. By mid-2020, working toward ethics approval, I had connected with a handful of potential collaborators and more interviewees. Multiple conversations had ensued from those invitations, and the following working groups emerged with the potential to impact one or more of barriers and Opportunity Areas I identified:

1. **Developing a Research Network** – creating academic, scientific, and farmer collaboration to progress a field of research around a shared body of knowledge.
2. **Supporting an organization** to articulate the work of an innovator, and to promote the uptake of their approaches not just among farmers but in landscape decision-making and policy.
3. **Business of Transition seminar** – to provide training and mentoring focused on financial planning and business options to support transition.
4. **Working for an innovative and change-making farmer** – supporting their systems-changing projects.
5. **Developing a business** – to directly support transition efforts. Though this is not what I had in mind for a working group, I approached it as a working group and an experiment.

Developing the working groups

With the initial set of five working groups, I began working to forge collaborations. Getting started in any instance took several rounds of conversation. For some working groups we spent time sharing our ideas about what we wanted to do, then to conclude that we would need funding. Other working groups were already up and running and so it was a matter of diving into the work and finding diverse ways to put my skills and capabilities to use.

Over the course of the project (2019-2022), I got involved with additional collaborations—beyond the original groups listed above. Just like the first set of working groups, some progressed, some did not. These ‘ethnographic’ opportunities included participating on the board of the Institute of Ecological Agriculture (IEA), hosting an online event with a regenerative farmer called ‘A year of regeneration’, contributing to WWF Local Learning Labs as part of my work with TACSI, and supporting my partner to develop a couple business ideas, High Performance Landscapes and Chaos Garden.

As I mentioned, some working groups progressed more than others, and some didn't even get out of the starting blocks. The COVID-19 pandemic dictated what could and couldn't be done during a significant component of the research time frame. The AKCARN, Business of Transition seminar, Compost as a Catalyst project, Year of Regeneration webinar, and TransitionAg all either had to shift online or were primarily conceived of as online offers due to the pandemic.

Even though some of the working groups did not progress, I found that there was more opportunity than I could support. Eventually I ended up focusing on one working group at a time. Still holding onto the intention to demonstrate how a designer might develop their own Ecosystem of Responses by nurturing an interrelated series of projects that facilitate cumulative benefits over time and link into broader Ecosystems of Responses through collaboration, I reframed the sequential reality of working groups as a way that developing and connecting with Ecosystems of Responses can be manageable with a limited scope but build and layer over the course of years.

This work is highly relational work, as highlighted in Initiate and Situate activities. The collaborations formed required trust, and that took time. The relationships that were developed mostly still hold. Some collaborations are more intensive than others, but the relationships keep presenting further opportunities. By the end of the research, I had been involved in 10 different working groups. Of those 10, 5 have led to further work in the near term, and it is not out of the question that opportunities from the other working groups and the relationships formed there may present additional opportunities at some unknown point in time in the future.

The working groups are summarized in Table 14.

Table 14. Summary of working groups

	WORKING GROUP (In alphabetic order)	DESCRIPTION	OPPORTUNITY AREA	RESEARCHER ROLE	PROGRESS	# PPL
1	**Agroecological Knowledge Commons and Research Network (AKCARN)**	A research and knowledge hub concept	Farmer learning	Co-designer	EXIT Applied but did not secure funding; adopted by AFSA	3
2	**Business of transition seminar**	Financial and business training focused transition	Farmer learning	Co-designer	PARKED Concept stage. Both collaborators ran out of capacity	2
3	**Compost as a Catalyst**	A project to grow the market for source separated	Practical farm transition tactic	Contributor Facilitator	ONGOING Completed 8 workshops; 5 Facebook Live events; an online resource and advice tool	3

		recycled organics				
4	**High Performance Landscapes and Chaos Garden**	Landscape repair consultancy; Mini-market garden	Ecosystem function; Demonstration sites	Contributor	ONGOING COVID effects and climate conditions stalled efforts.	2
5	**Institute of Ecological Agriculture (IEA)**	An advocacy cooperative	Advocacy	Member	EXIT Group is ongoing but researcher stepped out due to capacity	8
6	**Online Event: A year of regeneration**	Webinar tracking post-drought recovery on a regen farm	Farmer awareness	Co-designer	COMPLETE Case Study and webinar completed. Response was ok but did not lead to more, perhaps due to experiment design or simplicity of value proposition	2
7	**Rewilding Moore Park**	Class redesigning 20 ha of a city park	Public awareness	Co-teacher	ONGOING Class involvement in the project over 2 terms. Project to redesign Moore Park approved by City of Sydney and park management. Collaboration is ongoing	2
8	**The Australian Landscape Science (TALS)**	Scaling landscape repair capacity	Ecosystem function	Facilitator	EXIT Group is ongoing but researcher stepped out due to capacity	6
9	**TransitionAg**	Consulting to build transition capacity	Farmer and sector capacity	Owner	ONGOING Experimented and iterated value propositions. Next steps TBD post-PhD	3
10	**WWF Innovate to Regenerate - Local Learning Labs**	2-day workshops for local regen ideas	Regen entre-preneurship capacity	Co-designer Co-facilitator	COMPLETE How to materials available online.	6

Four working groups are described in detail here (Compost as a Catalyst, TransitionAg, Rewilding Moore Park, and WWF Local Learning Labs). Additional working groups are then briefly described.

Working group: Compost as a Catalyst

Overview of projects

One of the working groups that emerged was an opportunity to support the work of innovator, farmer, and educator Bruce Maynard. In learning about my quest for collaborations, he invited me to support a couple projects he had underway, Compost Buddy and Compost for Conservation Cropping, as coordinator and facilitator. My role was to co-design and co-facilitate eight regional workshops with him, design and facilitate five Facebook Live sessions with featured experts, produce the events including coordination and social media advertising, support reporting, and

update a compost advice tool and develop content for the compost website based on soil scientist advice and participant feedback. The projects were made possible by grants from the NSW EPA under the Waste Less, Recycle More levy.

The Compost Buddy project centered on an online compost advice tool with information, videos, and case studies for compost and soil health, and workshops to test the tool, share information about compost, and gather land manager questions. To build awareness and demand for compost and to test the Compost Buddy, we co-designed and co-facilitated eight of ten originally intended half-day 'Compost as a Catalyst' workshops (due to COVID lockdowns) in different locations across NSW. I developed the second round of website and advice tool content with soil scientist advice and based on participant feedback.

Recognizing compost as a potential starting point, one pathway, for transition, we added another half-day to the workshops, making the workshops full day events for those interested. The second half-day focused on 'Making the Transition to Regenerative and Resilient Agriculture', with Bruce Maynard and I both speaking. Drawing from my research, the second half day included:

- The contested definition of 'Regenerative Agriculture'
- Building a toolbox for regeneration
- Sharing Bruce Maynard's 30 years of evolving his farming practice
- Quick tips for transition
- In small groups, discussing what is needed as a sector, community, and local economy to support transition, using the systems map I had iterated during interviews as a generative tool. These small group discussions were then shared back with the larger group.

The Compost for Conservation Cropping project included a compost demonstration study, field days, and online events during the COVID-19 pandemic. Before my involvement, thirteen on-farm events had been conducted featuring agroecology and agronomy workshops as well as a demonstration of compost spreading across different broadacre crop and pasture types. I came onboard during COVID to facilitate five extension webinars on Facebook Live, providing Australia-wide and even international access to experts on compost use and biological inputs. The Facebook Live series attracted 193 participants across the five events, and 4,199 views. The recordings are accessible online via Facebook and the project website.

Why compost?

Recycling organics e.g., via the composting process, is an opportunity to close the loop, to return nutrients and fertility back to farms and the landscape. Compost is a recognized catalyst for landscape and soil regeneration and increasing farmer use presents a significant opportunity to reduce waste. Both projects in this collaboration were aimed at increasing the overall market demand for high quality recycled organics. Furthermore, compost helps create a pathway to optimize and reduce fertilizer use and could be an enabler of Regenerative Agriculture transition if barriers to adoption are addressed.

Compost brings a range of benefits when used in agriculture:

- Source of nutrients, fertility, organic material, and biological organisms
- Increases nutrient availability and efficiency
- Increases water infiltration and retention – acts like a sponge AND builds the capacity of soil to work as a sponge
- Improves soil structure
- Increases root depth
- Provides protection against soil and plant disease, and insect attack
- Builds soil quickly
- Improves carbon sequestration.

Once implemented, use of compost helps to reduce reliance on chemical fertilizers, which are an expensive input sourced off farm. In some cases, farmers make their own compost, further eliminating input costs. For an agricultural system to be fundamentally ecological and regenerative, it needs to keep cycling organic materials, nutrients, and fertility. ‘Closing the loop’ by returning organics to farms formed part of my emerging Theory of Change for Regenerative Agriculture transition, with relatively low barriers to transition and numerous benefits.

Outcomes

Between these two compost projects, the outcomes were modest but exceeded our expectations. Given the uncertainty of COVID and starting from a small social media audience at the outset, workshops were decently attended. Fluctuating based on remoteness of location, workshop sizes ranged from 12-25 participants, with 50 participants being the largest workshop group. Several people drove 3-4 hours to attend. Participants confirmed that there is more demand than supply of high-quality compost, that there is room to grow the awareness and demand for compost and biological inputs, and that they are interested in knowledge about how to make and/or finish compost on farm. A quick show of hands let us know that all attendees had some form of interest

in compost, many already make some form of compost or biological inputs themselves (31%) and, surprisingly 52% of attendees were interested in making compost on farm.

Most attendees attended both the compost and transition sessions, which was a surprise—we had expected to find some movement between the two half days. For us, this validated our hunch that there was specific interest in the topic of transition, as well as an interest in hearing Bruce Maynard share his story. The discussion of the definition of Regenerative Agriculture was robust, with good questions. In the largest workshop (over 50 people), a few participants protested the idea of nailing down a definition. As facilitator I encouraged the debate but also asked about the risk of leaving the definition open—to which one participant answered that resisting a definition would contribute to greenwashing. The room silent. Several participants mentioned that they appreciated hearing the different sides of the debate, and the reaction to the definition I presented was generally positive including a standing ovation from one group (to my shock).

I held a discussion of barriers to transition using the systems map (Figure 8) and documented all group notes. These inputs helped to validate, enrich, and prioritize the barriers and opportunities raised during interviews. Table 15 sets out the list of most significant barriers to transition as prioritized by workshop participants.

Table 15. Most significant barriers to transition as named by workshop participants

# OF MENTIONS	# LOCATIONS (of 8 total)	TOPIC	SUBTOPICS (# OF MENTIONS)
24 mentions	Mentioned in 8 locations	Education	Often unspecific e.g., “Education.” Other topics: Education for transition (7); Mentoring (2); Getting the message out to farmers (2); Outdated education and data (1); Bringing the many practices together (1) for organic (1), resilient (1) outcomes; Blending conventional and new approaches (1)
22	8	Markets	Competing in (cheap) commodity markets (8); Access (4); Size of farm/price taking (2); Unable to meet minimum orders (e.g., birds min order 1000) (1); Variability of prices (1); Middleman (1); Getting premium prices for regen products (1); Primary producers paying retail for inputs and getting paid wholesale for their outputs (1)
14		Consumer demand	Discussed as both an opportunity and a barrier. Consumer sentiment, arising from awareness, education, culture, and connection to provenance, were seen as a driving force of demand for regeneratively / ecologically grown / nutrient dense foods. Thus, a major enabler or barrier to transition: people to demand and then buy regeneratively grown product en masse.
13	6	Regulation	Amount of compliance (paperwork) and over-governance (6); Opportunity to develop the concepts and philosophy within government, regulators, and authorities (3); No governance of unmanaged grazing (2); Specific rules /governance as roadblocks to

			adoption of specific practices (1); Standards for regulation for compost / soil (1)
12	7	Finance	If you don't already have land, the cost to begin farming is high (4); If you need to shift your infrastructure, there are costs associated (3); Cost barriers too high for large farms (1); Grant availability (1).
6	5	Compost and biological inputs	Amount of waste a grievous problem (1); Difficulty of getting quality compost (2) or inputs (1) for composting; Opportunity that composting and biological inputs brings (2).
5	5	Abattoirs	Lack of suitable abattoirs for regenerative products as a barrier to product differentiation. Looking for on farm abattoir (1) or home kill options (1).
5	5	Climate	Climate-related weather challenges named as opportunities for forward planning but also barriers in the future (5)
5	3	Time	Having the time / making the time to plan it out and do it amongst the rest of life (5)
4	4	Input/ equipment supply	Finding appropriate supply for regen inputs/equipment (4)
4	4	Indigenous wisdom	Cool burning (1); Connection to Country (3).
4	3	Science, data, and measures	Discerning fads v science (1); Reductionist science as a barrier (1); Need for indicators / measures (2)
4	4	Social pressure	Neighbors (1), negativity (1), culture (1), active disruption from conventional farmers (1)
Other themes: Distance (3 mentions in 3 locations); Fear (3 mentions in 2 locations); Conflicting advice (2 mentions); Need someone for succession (2); Transparency (2); Working in the face of existing damaging practices (1); Need for demonstrated examples (1); Insurance (1); Broader landscape repair as an opportunity (1); Allowing non-natives into the Landcare mix (1); Building the sector network (1); Subsidies (barrier/opportunity) (1)			

For me, one of the most powerful insights from this working group was the *potential* for compost (recycled organic matter) to support drought resilience. I will briefly explain. Before I joined the C4CC project, the team had conducted a series of field days and two rounds of compost application at demonstration sites. Compost application took place during severe drought and, after a very stressful and disappointing year in terms of yields (some farmers got no crop at all), many of the farmers who participated were frustrated with their results. I joined the team when it was time to gather and analyze data for reporting. Many participants were hesitant to discuss the project with me, and case studies were out of the question. However, a comparison of the final data yielded some compelling results. Initial application of compost resulted in better crops from the start – with farmers observing better germination rates and growth as compared to the control paddocks. The farmers said that the paddocks with compost applied “looked better to the farmer’s eye.” When they went to harvest, however, the crops sometimes “weren’t there” due to extreme drought conditions. Farmers then had the option to graze these crops. Farmers who were

able to get a crop reported between 5-30% increase in yields for the paddocks with compost application, consistent with agronomic expectations pre-application. There was one potentially significant outcome: for some participants, the use of compost during drought meant the difference between getting a crop and not getting a crop AT ALL. We recommended further research into this phenomenon as it could be vital for farmers during drought.

Reflecting on the collaboration for both Compost as a Catalyst projects, and considering the challenges we encountered, Bruce Maynard observed:

> *Magnificent result. Hard to imagine we would have got that without you as a contributor…It was an absolute joy, and I can't imagine [that it would have been as] wildly successful in a time of great challenge with COVID and all that jazz and seasonal...I was humbled by the response in pretty short order and your skills in making that happen.*

This collaboration is ongoing.

Working Group: TransitionAg

TransitionAg is an experiment in providing transition and systems-change support that emerged during this research.

Origins of the business idea

From the research, one of the pieces of the emerging Theory of Change was a gap in the support for transition. There were many ad-hoc supports in the sector at the time, often focused on teaching new techniques. Some offers went farther, providing guidance on the business of farming with expert and peer-based mentoring to help them solve management (and other) problems. Between 2017-2020, there emerged several new types of coaching offers, a new regen ag degree, a wave of investment and alternative financing models, etc. However, farmers typically still needed to assemble their own end-to-end regenerative management approach, together with financials, planning, on-farm transition, supply chain, marketing, and distribution. Participants described there being more demand for support than supply. Offers were out of reach financially for some.

During my second round of interviews and scoping report feedback discussions in 2019, a few participants remarked that they felt that my research held a business for supporting transition.

Without a depth of expertise in agriculture, I didn't necessarily feel this was my role nor did I feel that my research was ready, but from a research perspective, it was worth testing. I had a hunch that in developing a business idea, as a (transition) design response, I could also use it as a design provocation to help catalyze change. I decided to "give it a go." I applied and was accepted to the 2020 Wild Idea cohort. Charlie Arnott and Bruce Maynard acted as my advisors. The incubator stepped us through lean startup and business model development activities in weekly coaching sessions with peers. Taking an entrepreneurial, Lean-style (Ries, 2011), business model innovation (Osterwalder and Pigneur, 2010) approach, I set up TransitionAg as an LLC and stood up a website (https://transition-ag.com).

Value proposition testing

During the incubator, I fleshed out the idea and launched it through Instagram and Facebook with a website, blog, and a survey. I began by testing offers like coaching, peer support, online learning, resources, and referrals focused on transition. My role was conceptualized as "holding the network", bringing together various experts to support the offering, and providing insights into transition through research.

As noted, the preliminary survey drew 29 responses from a very diverse set of farmers, including grazing, cropping, viticulture, and horticulture. I considered this a strong signal considering it was my second week in the market. I published a summary of the survey responses on my blog. The responses helped me to iterate the business idea as well as my understanding of transition barriers and opportunities.

In the responses, how to profitably transition to Regenerative Agriculture was the most common request. Synthesis of the available information and practical plans/steps to transition were mentioned. The need for technical support came through strongly. Specific mentions included how-to guides (especially video) for methods and quick problem-solving, case studies, working with weeds, soil testing and improvement, information relevant to a specialty or biome, etc. In terms of support format, there was interest in online small group /peer sessions – IF alongside "boots-on-the-ground" support.

For participants willing to be contacted, I followed up and tested a referral offering—assessing needs, identifying supports, connecting them to advisors. I tested business model options like farmer pays or referred advisor pays. Neither party were averse to paying, but I leaned toward farmer pays to assure independence. In design this is referred to as *live prototyping*, and it required very little effort to set up and test.

The breadth and depth required to meet these requests speaks to a whole market of support—not just one business. Technical in-person support, peer mentoring, business model development, financial advice, whole farm planning, training, self-guided learning with videos, and more, are all needed. My advisors and I theorized that the need was even broader than farmers – there was also market to support transition across the sector, including transition among suppliers, distributors, and retailers. As mentioned, I found it tricky to be involved in more than one project at a time. Ultimately, I put the value proposition testing on pause to focus on working groups.

Meanwhile having a business proved vital: having a business meant that I could validly join certain collaborative efforts to address needs and gaps in the market and could be paid. Part of this research is about demonstrating how existing initiatives like projects and grants can be used—thoughtfully—as vehicles for change and shifting systems. Drew, Robinson and Winhall (2021) discuss the challenge of funding design-based 'systems-shifting' work, including the need to find ways to "be there for the long haul" (p. 47), the "mismatch between current business models and the kind of longer-term engagement that works for system change" (p. 56), and invites speculation into new forms of design roles, jobs, and commissioning (pp. 74-79).

Participating in the working groups, in turn, enabled me to build awareness of the concept of transition and grow social media reach and impact. Having an online platform allowed me to talk about this research. Putting ideas into the market enabled TransitionAg to serve as design provocation—an instigator of change. And so, another value proposition for TransitionAg emerged: it was also a means to influence change through the brand and social media presence, normalizing the idea of transition, highlighting the need for transition support, and demonstrating how that could work.

Meanwhile, collaborating with working groups, I watched the market for transition support grow. The more people were talking about *transition* and needs for coaching, training, and education, it seemed, the more people would likely work on that challenge and find ways to address that gap themselves. The growing market of support also demonstrates the role of Transition Design in developing experiments. As discussed in Chapter 5, sometimes making an idea seem possible – making it visible, tangible, discussable, editable – is what makes it possible. Tangible experiments change people's awareness and thinking, altering perceptions of reality and what is possible.

Watching the growth of coaching and training offers in the market and reflecting on what I had hoped to work on, I began to reframe TransitionAg. I went back to how I had originally framed the PhD research and the project itself: understanding what it takes to transition for

individuals/farming families and as a system, creating a Theory of Change, building sector awareness and capacity, and supporting the collaborative development of responses. I looked at fundable approaches to systems change that I was aware of, like those named in Chapter 5.

I felt that TransitionAg needed to be more in line with the systems change / Social Lab concept that I had originally started with—dedicated to 'systems shifting' as named by Drew, Robinson and Winhall (2021). TransitionAg could focus on difficult systems changes requiring collaboration, like those identified in the Opportunity Areas.

Recognizing the additional value proposition of TransitionAg itself as a vehicle for influencing systems/scale change, I updated the website to better reflect transition collaboration offers, including Case Study information from this project. At the time of this writing, I have iterated the business concept in a significant way three times.

I will decide about the next iterations post-PhD. www.transition-ag.com

Working Group: Rewilding Moore Park

Rewilding Moore Park is a live project with The City of Sydney, Lord Mayor Clover Moore, and former NSW Premier Bob Carr that was opened to a UTS architecture and landscape design class to develop ideas for what that could look like. I was invited by UTS Professor Martin Bryant to co-teach the 2022 studio class focused on this topic. The City of Sydney and former Premier Bob Carr have been in active discussion with Moore Park management for a few years. Students were challenged to reconfigure the 45-hectare golf club site to provide the public with access to 20 hectares of green space, thus introducing more public parkland into an area that will continue to

The concept was to offer an experience of wildness and regeneration, build ecological awareness among the public, increase local ecosystem function, and serve conceptually as a counterpoint to other parks in the city. Beyond agriculture, building ecological awareness among the public is part of creating the conditions for transition. Urban design and development have a role to play in transition. Design choices that green urban areas not only provide environmental, economic, and social wellbeing benefits, but also are an opportunity to educate the public about the ecological health of the landscape.

UTS Professor Martin Bryant held design studios for architecture and landscape design students in 2021 and 2022 to generate creative ideas for the site. The 2021 class went for the bold idea of introducing Regenerative Agriculture and food production to the site, and I was invited to

milestone critiques. The 2022 class, which I co-taught, pursued rewilding, as a point of difference with other local parks and to offer environmental benefits like increasing animal habitat, foliage density, and wetlands alongside the golfing amenities.

Students, working in groups, were asked to develop their own concept of rewilding. Each group anchored their design around a different idea, for instance: key species, like eels and birds; diversity of habitat and spaces; wild journeys; and a refuge from the city nearby. To help the class conceptualize their work as promoting social dialogue and transitions, through my part of the teaching I emphasized how to influence change through their design process, presentation approach and materials, and design concepts.

In addition to providing an avenue to build public awareness of ecological wellbeing, this example raises the role that primary, secondary, and tertiary education have in building awareness of Living Systems, Complexity Thinking, and design for transitions.

Transition projects move on their own timelines. At the point in time when the class finished up, the political cycles were not conducive to pushing the Rewilding Moore Park project forward. A year after the class finished, Martin heard from Bob Carr, who had found an opportunity to put the project in front of a politician who wanted a project that will have legacy, for which we put together a brief presentation of the student works. Bryant remarked that in doing these projects, there is “something about the political cycle that one needs to know,” alluding to the need to be savvy about political will and timing, and to play the ‘long game’. At the time of the submission of this thesis (2024), the project has been agreed between the City of Sydney and Moore Park management, and public consultation processes have begun to inform the design.

The collaboration with Martin Bryant is open-ended and has included support of a living lab in Lismore, NSW.

Working Group: WWF Local Learning Labs

In 2020, following horrific bushfires in Australia, WWF-Australia embarked on a listening campaign around Australia to listen to communities and understand their vision for the future. That listening campaign sparked the Innovate to Regenerate Program (https://wwf.org.au/what-we-do/help-regenerate-australia/innovate-to-regenerate), which was a three-pronged program that followed on from a short film set in 2030 entitled *‘Regenerating Australia’*, produced by Regen Studios with WWF-Australia. The film can be viewed here: https://theregenerators.org/regenerating-australia/.

For the first component of the Innovate to Regenerate (I2R) program, WWF-Australia offered screenings of the film around Australia, followed by a short community vision workshop to help participants process the film and 'cultivate the soil' for action. Then, WWF-Australia set up a $2 million I2R Challenge for grant funding, to host capability building workshops for shortlisted ventures, and to provide coaching support. Thirdly, WWF-Australia partnered with The Australian Centre for Social Innovation (TACSI), where I was working, to develop and pilot an approach for Local Learning Labs in regional communities. The Labs were two-day workshops intended to build local regen-entrepreneurship capabilities whilst growing local innovation ecosystems.

The Labs fit with the sector shifting area of my emerging Theory of Change. Firstly, the Labs were targeting regional entrepreneurs, which includes land managers, farmers, and Indigenous rangers amongst other eco innovators. Secondly, when participants in this research discussed what Regenerative Agriculture requires, they talked about attracting people back to farming and regional communities—and that will require an ecosystem to support local entrepreneurship.

The WWF and TACSI working group included four core team members, two from each organization, and additional project sponsors from each organization. The team worked intensely collaboratively, but with distinct roles. On the WWF side, one team member led the project and worked to steward community building; one team member produced the events, looking after the experience of participants. On the TACSI side, one team member helped to facilitate working group processes and reflections; whilst my role was to lead the co-design of the lab activities, including through co-design processes with community members. Together, the team co-designed and co-hosted labs in Eurobodalla, Gippsland, and the Adelaide Hills and Fleurieu Region. Labs were co-designed with community participants, and we experimented with the design over the course of the three labs. As an output of the Labs, we developed resources to support communities to design and host their own Labs, which are available for download at https://wwf.org.au/what-we-do/help-regenerate-australia/innovate-to-regenerate/learning-labs/.

Over the course of the two days of the Learning Labs, participants engaged with ideas of environmental, economic, and social regeneration. The labs included a Walk on Country led by a local elder, and we engaged local Aboriginal elders or representatives in advisory for the labs. We introduced the following tools and methods: working with regenerative principles, developing a Business Model Canvas (based on the work of Osterwalder and Pigneur, 2010), and doughnut economics (Raworth, 2017) to explain how regenerative local economies can work but also to link

local and global efforts. Participants had opportunities to share their own work with each other, connect, and discuss their needs—but also to identify what they could give.

Participants deeply appreciated and were profoundly impacted by the chance to be led on a walk in Country with local elders and representatives, and to learn from them. This experience, and the awareness it generated, influenced the tone and topic of many of the conversations that unfolded. Participants appreciated learning about Business Model Canvas, which we paired with questions to help identify ways their business could contribute to regeneration, thought it was not exactly easy to learn. The idea of regenerative principles was hard to relate to tangible actions—despite our best efforts to provide examples. We iterated how we used these. Participants were fascinated and excited by the idea that a regenerative economy could be possible through something like Doughnut Economics, by the idea that their businesses could contribute to global regeneration, but some also responded with overwhelm at the idea of linking global and local efforts. Participants LOVED the chance to share their work with each other, which we facilitated through a fast-paced marketplace activity. They appreciated sharing their needs with each other but were also invigorated by connecting and letting others what they had to offer. The labs made the power of local visceral and inspired the working group in return.

Dimity Podger, Regenerative Communities Project Manager for Innovate to Regenerate, observed the transformational result that occurred because of the way we engaged First Nations leadership, working to build respect, awareness, and relationships:

> *Sustainability requires healing and we can't have healing if we're not in the same spaces together...so many [participants] said that was such an important value for them.*

As an example, we engaged Elder Cheryl Drayton as advisor in Gippsland, and her presence demonstrated what's possible. Dimity reflected:

> *The power of character – that moral leadership, spiritual, sacred leadership, presence and grace, long term perspectives, commitment to a positive future for all, spirit of collaboration...that, I think...the work that we did together, holding space for that kind of leadership to be there...It wasn't trivial what we were doing. The sense of gravitas began with the Welcome and the Walk on Country… What do we mean, 'foregrounding' [First Nations leadership and wisdom]? [It's] power, deep respect, [their] content, [and people, leaders being in their] rightful place...*

> *obviously there is a whole other level we could have gone to, [but] it was more than I was imagining and more than I had experience with. It's a truth and a reality I cannot unsee.*

Summary of additional working groups

Agro-Ecological Knowledge Commons and Research Network (AKCARN)

The goal of this working group was to convene a network for academic, scientific, and agricultural practitioner collaboration to build a shared body of knowledge and research for agroecology in Australia. The starting point was an online literature database tool for Regenerative Agriculture developed by Serenity Hill, available at https://ofnaus.gitbook.io/regenerative-agriculture-literature-review/. The preliminary task was to identify a small group that could focus on designing a collectivist structure and format that could support a network of collaborators in pursuing shared research goals. We put in a grant application, but the opportunity was not a perfect match, and we were not successful. At that point the already-busy collaborators needed to put attention to other things— like managing farms and growing organizations through COVID. Because the initiative required funding, resourcing, and an owner, we merged it with an initiative of the Australian Food Sovereignty Alliance (AFSA), reframed as the Agroecological Action Research Network (AARN).

Business of Transition seminar

The topic of cost and risk of financial loss as barriers to farmer transition was raised in interviews. There are support offerings focused on helping people afford to buy farms and there are grants for some practices, but support to plan and manage the financial and operational undertaking of transition do not seem to be available. One collaborator and I were interested in how we might:

- Seek to enable farmers to understand and make use of the support that is available
- Support farmers in their financial planning for transition
- Help farmers identify their key barriers and solutions
- Potentially influence decision-making around investment, financial sector responses, and policy (grant) offerings, etc.

We developed the idea for an online seminar series, which might develop into a mentoring group, focused on financial planning and transition support. The curriculum would potentially include:

- Financing and investment options; working with investors, banks, and insurers
- Transition planning, including financial and farm management planning; Creating financial models and projections for transition e.g., a transition budget
- Evaluating, redesigning, and transitioning business models – before, during and after transition
- Grants and funding
- Measurement frameworks and ecological accounting

My collaborator's primary business (which also contributes to Regenerative Agriculture transition) began growing rapidly about the time we were considering seeking funding for the development of the course, so we parked the idea. At the time of this writing, there still appears to be a gap in the market for this type of offering, but it would require an investment in scoping, design, and coordination to obtain funding.

High Performance Landscapes and Chaos Garden

My partner is experimenting with the use of ecological approaches to landscape-scale and garden-scale applications. I supported him to develop and launch Chaos Garden, a chemical-free, micro market garden founded on agroecological, syntropic, organic, and Natural Sequence Farming principles. I also supported him to launch High Performance Landscapes for the repair and regeneration of landscapes through design and implementation of Natural Sequence Farming, which is an approach to landscape stewardship that mimics the unique characteristics of a healthy, functioning landscape. Both are long-term endeavors in their early stages and faced setbacks due to too much rain during the growing season in the first year and COVID. These gave me another opportunity to work on communicating and marketing regenerative, agroecological approaches and products—and opportunity to do the physical work too.

Institute of Ecological Agriculture (IEA)

The IEA (formerly AIEA), led by Kerry Cochrane, is an advocacy co-operative committed to transforming agriculture by encouraging ecological and holistic thinking. Some of the board members of the IEA were extensively involved in developing the Regenerative Agriculture degree at Southern Cross University and delivering the courses. I participated on the board of the IEA for two years, one year as a guest and the second year as a board member. The IEA provided a chance to be involved with an advocacy group, observing for instance the complexities of introducing (highly popular, oversubscribed) education and providing input during the early days of an accreditation scheme. Both interventions have been demanded by the market and will help

increase capacity for the uptake of regenerative, ecological approaches to agriculture—but challenge the status quo and so face difficulties, nonetheless.

Online Event: A year of regeneration

Two participants in this research agreed to keep a photo diary of the regeneration on their property alongside their normal record keeping once the drought broke in 2020. From the photos and data, I developed a Case Study that visually tracked regeneration month-on-month, across the seasons, for a year. George Hamilton, known as Farmer George and who has been a long-time vendor at the Carriageworks Markets in Sydney, agreed to host a Facebook Live event to walk people through what regeneration looks like on a regeneratively managed property, including rainfall, stocking rates, seasonal variations, role of weeds, signs of resilience, etc. The event was attended by 31 people. George and I had no idea what to expect, and the event was generally received well. George reflected,

> *The webinar we hosted was really fun…I have sent it to a lot of friends who were interested and engaged. Not many people have done a photographic over 12 months. It just happened to be at the right time – grass grew – and [you can] see [the comparison] with neighbors. I found it really interesting. I've sent it to people who weren't friends as well. Their comment: 'I wish I had done that' The benefit is that it shows it works.*

We discussed that the study could have been even better if it had included additional ecological monitoring (e.g., beyond soil or carbon monitoring), records of fodder, stocking rate, time grazed, a map of the property, and weather/conditions (we did track rain). Ideally the study would include data farmers could capture quickly.

The Australian Landscape Science (TALS)

Through my partner's work, I had the opportunity to meet and informally contribute to some of the work of well-known Australian innovator Peter Andrews and The Australian Landscape Science institute. For instance, as part of collaborative efforts, I supported work to frame and communicate ideas, helped design a field day, facilitated a couple of working group conversations, and led the facilitation of a couple field days. At that time, the working group was focused on:

- Articulating landscape science insights and approaches for farmers and land managers (particularly via field days and videos)

- Gathering the scientific evidence around the insight and approaches
- With other organizations, influencing decision-makers e.g., policy and investment
- Identifying and delivering landscape repair projects, particularly large-scale projects.

The COVID-19 pandemic put a pause on field days and most events for quite some time. The working group shifted gears and moved to online events, while working on a range of priorities. I began to feel the pinch of too many working groups. Meanwhile, my partner turned his focus to setting up a landscape repair consultancy (High Performance Landscapes, above).

Reflecting on the working groups

In putting out the invitation for working groups—*if* I could get any going—I was expecting emergence, stops and starts, dead ends, and surprises. Like any initiative or project, progress is determined by timing, relationships, and the right elements coalescing at the right time. I had expected working group would not be static, that they would keep responding to the context over time. I had also expected that how I contributed and/or how collaborations conceived their role in enabling transition would become more nuanced over time. Each of these assumptions played out. I was genuinely surprised at the interest in this work as well as the ongoing collaborations, which speaks to a need for the types of support I was testing and the focus on transition. But more than anything, I am excited by the response to the work – the working groups, the research, the conversations that lead to more conversations. There is a real appetite for a focus on transition and, although I was juggling work and PhD, the project felt life-giving to me. This is the 'generative' quality designers look for—when one thing leads to another (Chapter 5).

6.5 How Regenerative Agriculture is defined will impact sustainability transitions

Because I undertook a Transition Design project, I was looking for pathways to achieving sustainability. Regenerative Agriculture was the promising pathway I chose to help amplify. Whilst actively seeking to increase the uptake of Regenerative Agriculture, I held loosely to Regenerative Agriculture as a potential pathway, always watching for what might compromise Regenerative Agriculture's ability to impact sustainability. As it turns out, the definition of Regenerative Agriculture—which is highly contested—could constrain or enable sustainability transitions.

Developing a definition from farmer interviews

One of the first tasks of this project was to understand what Regenerative Agriculture is, and what that means out in the paddock. What makes Regenerative Agriculture work, how do regenerative outcomes come about? Looking across a fence that divides two paddocks with two different management practices, the difference in outcomes you will see emanates not just from the practices but also from the paradigm behind the practices.

In this project, participating farmers discussed a series of mindset shifts required for them to manage regeneratively, for example: managing for ecosystem, animal, human, and social wellbeing; viewing the landscape rather than the product (for example livestock) as the primary asset to invest in and steward, inclusive of soil, plants, and hydrology; preferencing natural and biological approaches rather than synthetic chemical approaches; decreasing off-farm inputs and minimizing intervention; viewing soil health, ecological life, and biodiversity as resilience; stimulating biology and fertility; working with beneficial insects (like dung beetles and certain types of wasps), seeking the adaptive strength of plants, especially perennials; seeing weeds as a sign of needs in the landscape; valuing quality, like nutrient density, together with quantity; managing for profitable production and long-term viability rather than yield at any cost. These practices were described as “getting out of the way” so that the self-renewing properties of nature can operate (122 Regenerative Farmer).

For some practitioners, taking a regenerative approach has led them to get to know more of the history of their land, meet their Aboriginal neighbors and community, and appreciate traditional custodians and their knowledge in ways they had not previously (102 author and regenerative farmer; 141 Farmer in transition).

Several participants also discussed how regeneration connects to spirituality and ideas of holism, which is a detractor for some (135 Agroecological manager).

Participating farmers stated repeatedly that Regenerative Agriculture works because they took a mindset of “working with nature.” By that, they are describing nature’s life-giving, self-healing, renewing, self-organizing, perpetuating properties—the regenerative qualities inherent in nature.

Farmers identified that they were achieving ecological and human wellbeing, climate resilience, and production by working with the self-renewing properties of life itself, in the way that nature works. In how farmers described it, there is congruence between the means and ends: the approach to farming works with the capacity for renewal, and so yields regenerative outcomes. To

restate that, Regenerative Agriculture is successful because it achieves regeneration *and* production by working with the self-renewing qualities inherent in nature. This makes it paradigmatically distinct from conventional agriculture.

Regeneration, as a property of living systems, has nested, fractal, and interdependent qualities. Taking this concept further, we can ask the question 'Is it regenerative?' at different scales. Farmers can test whether their management is beneficial at micro, meso, macro, and meta levels. For example, regeneration can be observed at the scale of the:

1. Plant, animal, individuals, microbiology, and soil
2. Family, herd, paddock/field, riparian zone, and block of land (e.g., multiple paddocks/fields)
3. Local watersheds, regions, and communities
4. Planetary boundaries

Redefining the farmer's pride and joy

Rather than pitting production against conservation, the regenerative mindset brings the two together. Furthermore, regenerative management provided ecological resilience during times of stress, as one farmer described:

> *In a drought if there's no green leaf there's no farm—you have no production...*
> *(125 Regenerative Farmer)*

The implication of this, however, is profound and profoundly painful: climate stresses like drought have been made worse by our approach to managing landscapes. And this is why Regenerative Agriculture is seen as an avenue for farmers to contribute to ecological resilience: agricultural management impacts climate resilience. Participants shared how they perceived that taking up Regenerative Agriculture has afforded far reaching benefits for the landscape, for themselves, their families, and their communities. There is reason to believe that taking up Regenerative Agriculture at scale has potential to be a significant contributor to creating climate resilience at the scale of planetary ecosystem health (Hawken, 2017).

All of this adds up to a completely different view of success in farming. More than a different way to manage a property, participants described an entirely different agricultural paradigm that redefines what a farmer takes pride in: stewardship of health, wellbeing, and resilience across many dimensions for long term viability of production.

A contested definition

Although there was consistency in how the farmers participating in this project spoke about Regenerative Agriculture, the definition is contested. There is debate among researchers as well as institutions, industry stakeholders, and farmers. To encapsulate the discussion: at one end of the spectrum, definitions begin with "soil conservation as the entry point to regenerate" (Giller et al., 2021, p. 17) and then name practices; meanwhile at the other end of the spectrum, agriculture on the whole is asked to draw upon holistic, ecological, and systems approaches in order to not only "transition the agroecosystem to a state of increased health" (Grelet et al., 2021, p. 7), but also to regenerate the environment, our society, our economy and our spiritual wellbeing as an ultimate goal (Gosnell, 2021). Effectively, the question being debated is: Should we define "Regenerative Agriculture [as] an end, or a means to an end?" (Giller et al., 2021, p. 17). After listening to farmers, I would argue that Regenerative Agriculture works when it is regenerative in means and ends.

On one hand, Regenerative Agriculture may be framed by associated practices like continual ground cover, multi-species cover cropping, no or low tillage, high density rotational/ration grazing, natural/biological inputs like compost and vermicast, increasing biodiversity above and below ground, natural pest control, repairing hydrological function, and more. Examples of definitions that feature a list of practices: Burgess et al., 2019; Hawken, ed., 2017, p 54. Participants felt there could be an unlimited number of regenerative practices and they underscored the need to leave room for innovation.

On the other hand, some definitions emphasize outcomes or attributes of Regenerative Agriculture: building soil health, increasing biodiversity, capturing carbon, improving the water cycle, promoting ecosystem function, delivering holistic benefits, contributing to farmer and community health, reversing climate change, etc. Examples of outcome or attribute-oriented definitions: Regeneration International (n.d.); Rodale Institute (2014); Syngenta Group (n.d.); and Grelet et al. (2021) argue that Regenerative Agriculture is unquestionably outcomes focused.

There are risks at both ends of the practices versus outcomes spectrum of definitions. Definitions at the "soil conservation as an entry point" and practices end of the spectrum have been criticized as making the term 'Regenerative Agriculture' vulnerable to green-washing—vulnerable to being co-opted to represent the status quo rather than increasing adoption of a truly different approach to agriculture. In these definitions, anyone who focuses on soil conservation without attention to ecological outcomes can use the term 'regenerative'. This end of the spectrum also whittles outcomes down to single measures like soil organic carbon, which risks focusing on carbon at the

expense of the whole system. Measures like carbon sequestration are also easily parlayed into a technology problem, e.g., driving investment in pursuit of the ultimate soil organic carbon molecule, microbe, and product, etc.

Critics of this form of definition perceive it as side-stepping the contentious use of chemicals and serving corporate and political agendas. But others warn that a too-familiar definition risks watering down the potential for making a difference in agriculture, as Gordon, Davila and Riedy (2021) observe, “Regenerative Agriculture cannot be understood differently if the language still frames it within the conceptual confines of industrial–productivist thinking” (p. 820). Some reject the idea that Regenerative Agriculture can fit within the existing paradigm without being extensively compromised. The article, ‘Regenerative Agriculture needs a reckoning’ (Fassler, May 3, 2021), summarizes issues that are structurally and philosophically interlinked with the existing dominant food production system, including: “forces that compel farmers to focus on yield at the expense of everything else” (in discussion with Zach Ducheneaux), and the financial model that keeps farmers ‘[yoked]’ to chemicals and conventional agriculture, commoditization, subsidies that incentivize overproduction, resource intensive, fossil fuel-driven methods, and more. The conclusion is that the current paradigm and its many interlocked issues is difficult to shift but is also incompatible with a sustainable future.

On the opposite end of the spectrum, a definition that calls for holistic outcomes that include the transformation of agriculture and a farmer’s worldview may further alienate those who already are inclined against Regenerative Agriculture, risking slowing down or impeding the growth of adoption. In a 2020 policy brief from the Menzies Institute (Hyett 2020), the authors chose to go with the term ‘Resilient Agriculture’ because they felt the term ‘Regenerative Agriculture’ was “divisive” (p. 3).

It is worth further understanding the extent to which the debate over the definition poses a problem to the adoption of Regenerative Agriculture. Does the definition need to be more amenable to a broad audience right now for adoption to increase and to become mainstream? To what extent do different definitions compromise the potential for regenerative outcomes?

A regenerative definition for a Regenerative Agriculture

Listening to farmers, Regenerative Agriculture was defined as a holistic approach to agriculture that achieves regeneration and production by working with the self-renewing qualities of nature.

Definitions as a rule try to avoid using the word being defined in the definition. In the case of Regenerative Agriculture, there is significance to breaking this rule: regeneration is the goal, and that goal is achieved through regenerative means. In Regenerative Agriculture, regeneration is the basis of production. Furthermore, regeneration applies across scales—micro, meso, macro, and meta—and does not just refer to environmental/ecological regeneration but social and economic regeneration as well. This definition asserts that agriculture has a responsibility to contribute to regeneration. Is this definition open enough for regeneration to be a journey, for there to be a plurality of approaches, and meanwhile to hold accountability for outcomes?

The potential to transform agriculture

Beyond the goal of growing the uptake of a regenerative farming system, some stakeholders see a much bigger opportunity to transform the whole of the food and fiber production system e.g., an entirely new agricultural paradigm. Fassler (2021) interviews Silvia Secchi, who expresses concern that she sees a movement increasingly focused on small improvements— “fiddling at the edges”—and how, by not addressing the underlying dynamics of the food production system, Regenerative Agriculture could become “a massive deflection” that enables the existing paradigm to keep operating without making sufficient changes to deliver the regenerative outcomes that people would expect from Regenerative Agriculture. In discussion with Fassler, Secchi attributes this dynamic, at least in part, to the penalties of challenging the existing system, citing a need to “keep…funding flowing” and instances of “political retaliation for scientific findings that were unfriendly to big agribusiness.” They argue that, if regenerative approaches were implemented throughout the food (and fiber) production system, it would represent a radical transformation. Secchi declares, “regenerative ag—if it’s true—should rock the fricking boat.”

The risk of defining Regenerative Agriculture too closely to the status quo or without any accountability for outcomes, is that it will fail to engage agriculture in addressing human impacts on our planetary boundaries and perpetuate an unsustainable future. If there is to be a viable future for humans, agriculture must play its part. Transforming human impact on the planet calls for a transformed agriculture, and the way in which Regenerative Agriculture is defined determines the extent to which it will contribute.

6.6 Social Justice Blindspot

The debate over the definition of Regenerative Agriculture is not just about practices, outcomes, or the extent to which it differentiates from the dominant paradigm of agriculture. The debate over the definition of Regenerative Agriculture is also about who gets to decide the definition, who is involved in Regenerative Agriculture, and the extent to which Regenerative Agriculture is truly holistic, contributing to social justice, healing, and reconciliation.

Issues of inclusion, equity, diversity, food sovereignty, access to land, and dispossession of land impact the extent to which we can regenerate our environment. Critics are adamant that the "lack of recognition of inequities in the agri-food system risks helping to drown out, rather than empower, the marginalised voices" (Bless, Davila, and Plant, 2023, p. 14), thus perpetuating and reinforcing the status quo. The agricultural sector—and therefore Regenerative Agriculture—can help address these issues. To realize this potential, however, requires a broader understanding of the interdependence of social justice, Regenerative Agriculture, and transitions.

Is social justice within the purview of agriculture transitions?

In discussing transition to Regenerative Agriculture, many participants in this project mentioned how important it was to learn from Aboriginal wisdom and land management. Some participants mentioned that many ecological land management practices have origins in First Peoples practices. A small number of the participants have formed relationships with local Aboriginal people. One participant has engaged in land sharing with a local Aboriginal family.

Social justice and racism were discussed as part of social issues in Australia, but not named as a barrier to the uptake of Regenerative Agriculture. As will be discussed in this section, critics of the movement see these issues as a barrier to the spread of Regenerative Agriculture at scale, a barrier to all of agriculture having a regenerative affect. I have seen the question raised on Regenerative Agriculture social media forums as to whether issues of social justice are within the purview of agriculture. For those participants who advocated social justice, the general sense is the role of addressing questions of social justice belongs to government and society at large, but that there is still a role that individual farmers, communities, and sector stakeholders can play.

Exclusion

During this project, various international leaders voiced protest at the exclusion, whether intentional or unintentional, of black, Indigenous, and people of color (BIPOC) from leadership

and representation in the global Regenerative Agriculture movement. They voiced concerns about a lack of consultation of First Nations wisdom in the development of the movement, the erasure of First Nations history, origins, and knowledge in the stories and practices of Regenerative Agriculture, and the potential for a Regenerative Agriculture that avoids issues of social justice, access, and equity—and thus reinforces the status quo.

As an example, in November 2020, a letter titled 'A Whitewashed Hope' set out by 10+ Indigenous leaders and organizations (Cultural Survival et al.), directed to the Regenerative Agriculture (Regen Ag) and Permaculture movements, circulated through discussions on social media and in other forums. Identifying that Regenerative Agriculture and permaculture movements "claim to be the solutions to our ecological crises", the letter presents a series of direct criticisms. Regen Ag and Permaculture are characterized by Cultural Survival et al. as borrowing agricultural practices from Indigenous cultures while they "leave out our worldviews and continue the pattern of erasing our history and contributions to the modern world." The letter argues that practices cannot be holistic if history is not considered; leaving history out is identified as another tool of exclusion and an ongoing barrier to healing.

In 'Regenerative Agriculture needs a reckoning: Why avoiding uncomfortable conversations about equity, race, and access threatens to spoil a nascent movement's environmental promise', Fassler (2021) underscores the pain of exclusion felt by BIPOC peoples. Fassler observes the meteoric rise of the Regenerative Agriculture movement, and discusses the fuzzy, contested definition of Regenerative Agriculture in detail. He highlights criticisms from Native communities, Indigenous societies, agroecologists, and farmers of color. The article raises the backlash against the film Kiss the Ground, its "scientific oversimplification" of how we "heal our planet", and the "systemically racist culture that produced it", resulting in an exclusion of BIPOC leadership, perspectives, or engagement in the Regenerative Agriculture movement, echoing the frustration of erasure and marginalization underlying the 'Whitewashed Hope' letter.

M. Jahi Chappell, interviewed by Fassler, describes a twice-wounding and a "breathtaking...arrogance at play" — first in taking land, culture, and practices, and then in using those very practices as solutions without involving the people who created them and have been using them all along. Fassler offers Angela Dawson's reflection:

> *Black and Indigenous farmers have been practicing this form of agriculture without any specific title or performative acknowledgment for generations. This is the way I learned to farm from my grandparents.*

The ‘Whitewashed Hope’ letter touched a nerve, the criticism stung. I observed reactions on social media that ranged from humble and self-searching, grieving, worried, confused, and frustrated, to angry, defensive, and dismissive. The UK Permaculture Association posted the article online in full and held discussions; Permaculture originators Bill Mollison and David Holmgren reputedly have admitted the use of First Nations practices in developing permaculture.

By the reactions on social media, it appeared that proponents of Regenerative Agriculture who didn’t immediately dismiss the criticism may have gotten an unexpected and, by the range of reactions, painful glimpse into their positionality with respect to the global social justice dialogue. For my part, I had mixed feelings about the public and acerbic nature of the criticism. Firstly, I was aware of the global social justice dialogue and the decolonization discourse in Australia, I had heard Permaculture practitioners as well as some of my interviewees pay respect to First Nations peoples and practices while discussing agriculture, worldview, and necessary change in similar terms as used in ‘Whitewashed Hope’, and I was committed to finding ways to facilitate ontological openness through my practice. I observed proponents of Regenerative Agriculture working to communicate regenerative and agroecological ideas to conventional farmers in ways that they would be heard—even in the face of social ostracization, bullying and threats. I acknowledge, however, that I don’t frequently see discussion of Regenerative Agriculture practices in the same spaces with social justice and land rights issues—though they may be discussed by some of the same people. So, the criticism felt broadly right, but not fully accurate.

I would have expected that BIPOC peoples were more likely to find allies in agriculture among Regenerative and Permaculture practitioners than among conventional farmers, and so the rationale of attacking your most likely allies so publicly was initially puzzling and somewhat jarring—but it was important. I resolved to wait and see how that played out over time. Perhaps a direct and public criticism early in the growth of the Regenerative Agriculture movement was a necessity to broaden the view of the movement. Time will tell.

The criticism offered in ‘Whitewashed Hope’ is fundamentally a criticism of western culture and systems (for lack of a better term). Despite any intentions of permaculture and Regenerative Agriculture, despite the worldview and practices of farmers and land managers applying these approaches, or the extent to which proponents of these movements may perceive themselves allies of BIPOC peoples, the letter points out how mainstream and colonial culture still manifests in movements—resulting in ongoing, painful exclusion of BIPOC peoples.

Interestingly, those who have lodged these criticisms against Regenerative Agriculture seem to perceive it as a unified movement—whereas many proponents of Regenerative Agriculture in Australia don't perceive Regenerative Agriculture as a monolithic movement at all. Fassler (2021) describes a sense that "the process of defining 'Regenerative Agriculture' [in America] had been largely led by prominent foundations, think tanks, and corporations" and had been "launched by thought leaders", and ignored older, parallel, collaborative, and well-evidenced movements like agroecology. Permaculture is recognized as a distinct movement with two founders. Agroecology is defined in part as a social movement, and there are organizations like La via Campesina that offer a focal point and voice for many—but they do not represent everyone within the agroecology movement. In a point of contrast, the participants in this project perceived Regenerative Agriculture in Australia as growing from grassroots efforts, broadly taking the shape of a movement but with no locus of control and being co-opted by corporate interests as it grows in popularity. There are many different innovators in Australia or innovators whose practices are being adopted here, but none of them represent the entirety of Regenerative Agriculture. Perhaps the situation is different in the United States. As the time of this writing, however, it was unclear who might answer the criticisms pointed at the Regenerative Agriculture 'movement'.

Whether Regenerative Agriculture is a movement or not (and I do use that term in this thesis), the trend seems to be heading in the same direction in Australia as it is in the United States: Proponents are warning of greenwashing and co-opting of the regenerative movement by corporate interests who, for instance, may be able to claim environmental outcomes like carbon sequestration without having to demonstrate carbon neutrality or resulting ecological and climate benefits. To put it bluntly, 'regenerative' turns out to be a good marketing term and, proponents warn that, if we are not careful, eventually that is all it might stand for—marketing—rather than representing an approach to agriculture that regenerates the landscape and contributes to protecting the long-term viability of farming.

Holistic means holistic

A key point that 'Whitewashed Hope' authors make is that "holistic" is inclusive of social, economic, environmental, and spiritual dimensions—and that regeneration of one element is linked to regeneration of the others. Fassler (2021) reiterates this point and ties the limits of Regenerative Agriculture's potential to impact climate change directly to its ability to reckon with and address issues of social justice.

Ecologically holistic

As an example of what ecologically holistic means, Fassler (2021) challenges the idea that 'cows can save the planet.' Regenerative Agriculture in Australia has also been criticized for an over-emphasis on cattle. Fassler, like others, identifies how different ruminants and grazing animals may be better suited to a given environment, providing ecological and business model diversity, and doing a better job than cattle of repairing a particular ecosystem. Without "ecological logic" behind the focus on cattle, Fassler concludes that the status quo remains unchanged. Fassler describes monocultural productivist landscapes, whether cropping or grazing, as "nearly abiotic spaces, crowded and yet mostly devoid of life" and myopically focused on the single principle of yield, with negative consequences even for beneficial species like bees.

Socially holistic

Fassler (2021) and Cultural Survival et al. (2020) argue that Regenerative Agriculture should be socially holistic as well. Interestingly, as noted earlier, Regenerative Agriculture is endorsed for its social as well as ecological and economic benefits in some of the literature, and the social benefits of Regenerative Agriculture were emphasized to me by most participants in this research (Massy, 2017; Gordon, Davila and Riedy, 2022; Gordon, Davila and Riedy, 2023; Grelet et al., 2021). But what are 'social benefits', exactly? As it turns out, 'social benefits' may refer to many things: reduced social isolation (e.g. through communities of practice (Gordon, Davila and Riedy, 2021), social learning (Gosnell, 2020; Gordon, Davila and Riedy, 2023), human health (Schreefel et al., 2020), farmer and employee mental wellbeing and physical health, enjoyment of work, family wellbeing (e.g. through holistic planning and their holistic context), quality of life and the social wellbeing of the individual [farmer](Gordon, Davila and Riedy, 2023), farmer self-efficacy (Brown, Schirmer and Upton, 2022) and empowerment, community support (Gordon, Davila and Riedy, 2023), social license (Grelet et al., 2021), regenerating farm families, adaptive and regenerative farm enterprises (Schreefel et al., 2020), community wellbeing (e.g. communities growing and thriving because farming is thriving and ultimately more people may be able to work in farming again) and community resilience (as a result of improved ecosystem function, environmental condition, and community thriving) (114 Regenerative Farmer). As a subjective measure, Brown, Schirmer and Upton unpack farmer wellbeing into "hedonic, evaluative and eudaimonic measures" (p. 4). Grelet et al. (2021) defined social wellbeing as,

> *Good physical and mental health of farmers and employees. Enjoyment and fulfilment from work. Healthy food. Thriving rural communities and jobs. Urban*

> *and rural communities engaged with farming. Consumers connected to food (p. 11).*

Outside of Regenerative Agriculture discourse the concept of 'social benefits' has numerous other meanings, including operating within an ecological ceiling and a social foundation in order to create a safe and just space for humanity (Raworth, 2017), social fairness (Burgess et al., 2019), a 'fair share' (setting limits to population and consumption, redistributing surplus) (Mollison, 1988, PermaculturePrinciples.com, 2023, Perkins, 2019), equality (Hawken, 2017), power, equity, racial parity (Movement Generation, 2016; Gosnell, 2020; Gordon, Davila and Riedy, 2021; Gordon, Davila and Riedy, 2023; Fassler, 2021), social capital, social welfare, social organizing (Iles, 2021), sustainable food supply and food security (Schreefel et al., 2020), food sovereignty, democratic participation in food systems (Power, Penny and de Castro, 2023, for AFSA; Gordon, Davila and Riedy, 2023), ensuring just transitions (Movement Generation, 2016), regenerating the social system (Schreefel et al., 2020), regenerative cultures (Wahl, 2016), cultural re-appreciation, respect, and diversity (Yunkaporta, 2019, Schreefel et al., 2020), social justice (Schreefel et al., 2020, Gosnell, 2022) including decolonization, healing, reconciliation, and reparations for past harms of colonialism, land rights and access to land (Land, 2015; Smith, 2012; Yunkaporta, 2019), spiritual wellbeing (Rodale, 2014), worldviews rooted in holistic and ecological wellbeing, and (social) identities based on oneness with nature—caring as country (Suchet-Pearson, 2013)—a rekindling of whakapapa, mātauranga and tikanga (Grelet et al., 2021). The concept of social fairness, as defined in Rodale's regenerative organic certification scheme and based on the USDA's certified organic standards (Burgess et al., 2019), includes law and code compliance, labor standards, harassment, abuse, and discrimination, wages and benefits, health and safety, and buyers and supply chain (Burgess et al., 2019; RegenOrganic.org, 2021). This concept of social fairness is central to the Just Transitions movement (Movement Generation, 2016; Climate Justice Alliance, n.d.). The social aspect of Regenerative Agriculture also refers to the nested, fractal nature of systems and how critical it is for Regenerative Agriculture to exist within regenerative cultures for it to truly deliver regenerative ecological results (Gordon, Davila and Riedy, 2021). In another article, Gordon, Davila and Riedy (2023) call out the absence of a discussion of power, equity, and racial parity, citing Fassler and others.

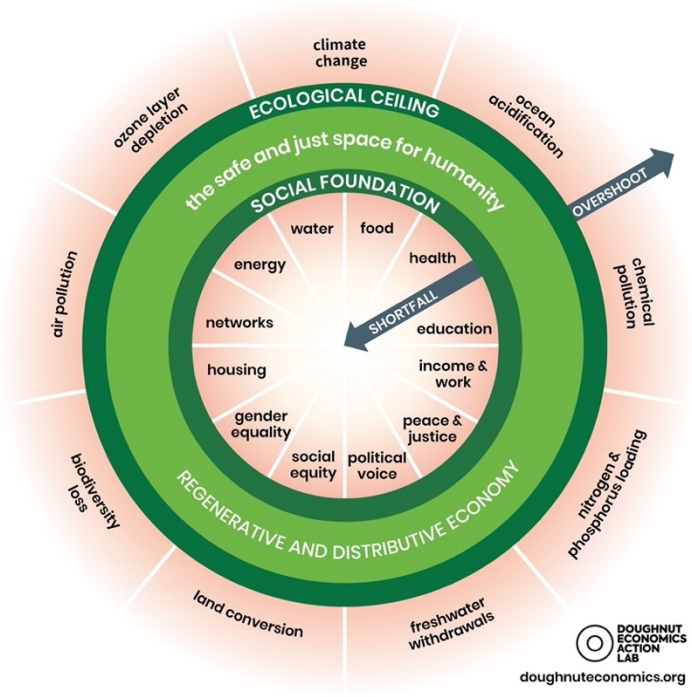


Figure 44. Doughnut economics (Raworth, 2017)

Download versions via https://doughnuteconomics.org/tools/doughnut-diagrams-in-25-languages)

Economically and politically holistic

Drawing together the many different ideas of 'holistic', Doughnut Economics (Raworth, 2017) offers a vision for economics that is ecologically, socially, and economically holistic (Figure 44). Raworth sets the ecological ceiling and social foundation required for a safe and just space for humanity, calling for a regenerative and distributive economy and echoing the Just Transitions movement (Movement Generation, 2016; Climate Justice Alliance, n.d.) as well as ideas from Permaculture (Mollison, 1988). Within the upper and lower limits of the ecological and social boundaries defined by Raworth (2017), agriculture has a role to play from macro to local and societal to planetary scales.

The idea that Regenerative Agriculture needs to be nested in regenerative cultures for it to thrive, and that agriculture has a role to play in protecting both the local and planetary ecological ceiling and social foundations, brings us back to the contested definition of Regenerative Agriculture and the risk that it's potential benefits will be watered down to protect the status quo.

It is along these lines of a much broader, much more inclusive definition of 'social benefits' and 'social wellbeing' that Fassler (2021) and Cultural Survival et al. (2020) criticize Regenerative Agriculture. When discussing Regenerative Agriculture, farmers may be thinking of themselves as

individual farming practitioners and enterprises, standalone entities unto themselves, but it is clear through these ideas of 'social' that others see them—perhaps more in aggregate—as landholders, business owners, employers, and as such representative of existing social, political, economic and power structures, as perpetuating ongoing colonization, and as the frontlines of people responsible for the wellbeing of our environment and our planet.

Fassler (2021) discusses the chronic omission of "the importance of addressing social and political issues as part of the regenerative ethos." Fassler's interviewees felt that "conversations around Regenerative Agriculture often grew uncomfortable—even antagonistic—when issues related to power, access, compensation, and equity were raised. Fassler reiterates that "holistic approaches to agriculture" aren't holistic if decoupled from social and political contexts:

> *Make no mistake: In this, something crucial is being negotiated. The debate over what Regenerative Agriculture means, and who gets to decide...touches on our changing relationship to science and technology, on access and antitrust reform, on workers' rights and racial injustice, on conceptions of the natural world and our place in it. It's a conversation that forces you to draw a bigger circle, only to realize that circle isn't big enough.*

Fassler's discussion of holistic approaches to agriculture evokes the nested layers in the Panarchy model (Gunderson and Holling 2002), Wahl's (2016) 'regenerative cultures', and Raworth's (2017) regenerative and distributive economy.

Equitable access to land was identified as a barrier to transition by participants in this project. Firstly, population decline in farming communities has been occurring in Australia for decades. It is attributed to several factors, including the industry economics driving farmers to keep scaling, to get bigger and bigger, to turn a profit. Bigger farms reliant on machinery means fewer people working in farming, and fewer people in farming communities.

Regenerative proponents have noted that Regenerative Agriculture may create opportunities for families to come back to farming, for farming communities to grow again—and that takes more people, as noted in the discussion of the WWF Local Learning Labs. In Australia, the cost of land can be a significant barrier to entry for even middle-class wage earners, and cost pressures mean farmers often require off-farm income. If Regenerative Agriculture does not concern itself with issues of economic access and equity then, Fassler argues, it erodes the very workforce it will depend upon:

> *Plenty of new farmers, many of them people of color, want the opportunity to work the land. They're simply hitting up against a system that rejects them.*

Land prices have continued to rise in Australia, and people leaving cities during COVID-19 has raised land prices even more. People getting into farming find it harder and harder to afford land. As the boom-and-bust cycles of agriculture turn and as the effects of COVID continue, some farmers find it hard to find workers and some workers find it hard to afford working in farming.

Furthermore, dispossession of land resulting from colonization in Australia is an ongoing trauma for Aboriginal and Torres Strait Islander peoples. Among cascade of many related challenges, it means that they are often cut off from managing landscapes using their traditional practices as well as from the economic opportunity that land management and production present.

In newer developments, Fassler tracks how mechanisms like carbon credits are already disenfranchising new and small farmers — a dynamic that is occurring in Australia as well as the US. The growth of carbon credit schemes without provision for equitable access risks worsening social inequality, increasing land prices, further consolidating land ownership, and more environmental degradation, which are correlated.

Advocates of social justice make the argument that, without a focus on social justice and without addressing social, economic, and environmental regeneration, Regenerative Agriculture cannot claim the term 'holistic' or anything beyond a thin definition of "regenerative" (Fassler, 2021; Gordon, Davila and Riedy, 2021; Movement Generation, 2016; Yunkaporta, 2019, 2021a; Cultural Survival et al., 2020). Regardless of how Regenerative Agriculture proponents see themselves and their role with respect to 'social' outcomes, how we define Regenerative Agriculture can further entrench these dynamics or improve them. The extent to which proponents of Regenerative Agriculture and the agriculture sector overall reckon with and address issues of social justice will determine the extent to which they impact climate change and environmental regeneration.

Spiritually holistic

'Whitewashed Hope' asserts that sustainable farming practices are important but "do not encompass the deep cultural and relational changes needed to realize our collective healing" and regeneration. In this article, both Regenerative Agriculture and permaculture are assessed as viewing humans as separate from nature, rather than part of nature and the living "communion of beings and not objects" in which "all matter and energy is alive and conscious", never dead. The letter urges the Regenerative Agriculture and permaculture to see practices—and each other—in a

relational way, in terms of what “maintains relationships and balance” rather than making judgments about what is “good, bad, or ideal.” It frames healing our traumas as healing Earth’s traumas “because we are ONE” (Cultural Survival et al., 2020).

The letter describes Indigenous spiritual practices and worldviews as “the bedrocks that our agricultural practices and lifeways arise from” and sets out actions people can take to support and amplify Indigenous ways, while “[inviting] you to ground your daily practices in these ancestral ways, as we jointly work towards collective healing.”

An opportunity for solidarity

Participants in this research reported frustration with all of the following: companies positioning for dominance of GMO seeds; the increasing off-farm control of inputs end-to-end including seeds; reliance on a never-ending chemical application regime; how global markets dictate what farmers produce; the encroachment of suburbs and non-agricultural uses on farming land removing valuable land from agricultural use; and the increasing cost of land putting pressure on overall rates of production, making it difficult for farmers to be able to afford to continue farming, and difficult for people to purchase land for farming. Although most Australian farmers may not resonate with the term 'peasant’, there is a growing ‘neo-peasant’ movement, and issues named by participants as barriers to the uptake of Regenerative Agriculture are some of the very issues that agroecological and peasant movements address. This is an opportunity for international solidarity on shared issues, practices, and global-scale challenges.

Examples of ‘positive deviance’, which are threads of the possible future that are present today, exist in Australia already in terms of solidarity. In September 2021, the Australian Food Sovereignty Alliance (AFSA) hosted an online solidarity session titled ‘Solidarity and Corporate Capture of the UN Food Systems Summit’ with key visible Australian champions of permaculture, Regenerative Agriculture, agroecology, and Aboriginal leadership their solidarity with the 2021 UN Food Systems Summit (UNFSS) protests. The global protests called out the UNFSS for “Breaking with the long history of multilateralism…[taking] a multistakeholder approach, giving Big Food and Big Pharma equal footing with democratic states.” In a public display of solidarity, “Costa Georgiadis (Gardening Australia), Tim McCartney (Barengi Gadjin Land Council), Charlie Arnott (Regenerative Journey podcast), Vivien Yii (Right to Food Coalition), and Tammi Jonas (AFSA) with Alexx Stuart (LowTox Life) [discussed] what the UNFSS might mean for First Peoples, small-scale

farmers, the food insecure and city folk, and how we can all prevent ongoing corporate capture of our food systems" (AFSA, 2021).

An opportunity for reconciliation

Working through social questions with Fassler, Berhe gets to the question posed by many farmers in response to the 'Whitewashed Hope' letter: Is the burden of social justice on individual farmers or part of a broader societal responsibility? Does that responsibility fall to government rather than specific farmers, corporations, or certifiers because the government "has powerful tools at its disposal to uplift those who have been shut out of food production"?

In Australia, the concept of reconciliation may be useful. According to reconciliation.org.au, reconciliation is the work of "strengthening relationships between Aboriginal and Torres Strait Islander peoples and non-Indigenous people, for the benefit of Australians." This includes making reparations, addressing past harms, remediating ongoing consequences (whether structural, cultural, economic etc.), and actively engaging in healing and decolonization. In response to the question of 'who is responsible for regeneration through social justice?', a reconciliation answer would be: Everyone. I note however that reconciliation must be initiated by non-Indigenous people. When it comes to reconciliation, everyone—from citizens, farmers, corporations, certifiers, academics, institutions, communities, to governments et al.—has opportunity to do their part. This is not meant to downplay the significant role governments play, but rather to encourage individuals and entities to do what they can.

An example of positive deviance in terms of reconciliation is Murray Prior's efforts to share his story, and the collaboration between his family and Paul "Girrawah" House. Prior speaks of a realization that he is just a steward of the property he purchased, his learning in engaging with Aboriginal people, and his growing relationship with House, a Ngambri (Walgalu), Wallabalooa (Ngunnawal) and Wiradjuri (Erambie) custodian. Prior has spoken publicly, on his own and with House, sharing learnings, the developments in their relationship that led to House choosing the name Nguurruu for the property, and the two entering a land sharing arrangement, Yindyamarra. The land use agreement is described in proceedings of The Global Foundation's May 2021 Canberra Roundtable and explained by Prior in an AFSA solidarity session, 'Nguurruu Farm'.

Regenerative transitions are just transitions

Just Transitions is a movement that originated from the North American trade union (labor) movement with the objective of supporting workers through energy transitions. Australians may be able to relate to the need for just transitions, for example, based on experiences with the collapse of the automotive manufacturing industry, and the social and economic uncertainties linked to moving from coal to more sustainable energy sources.

Just Transitions offers principles and a Framework for Change (Figure 17) to guide transition to regenerative economies—of which Regenerative Agriculture could be a key element. Like Doughnut economics (Figure 44), Just Transitions establishes that a regenerative economy requires operating within social and environmental boundaries.

In the same way that Regenerative Agriculture does not achieve regenerative outcomes without regenerative means, in transitions the outcomes are not just if the means are not just. This congruency is one of the determining factors of outcomes in agriculture and in transitions, and I argue then that congruency is required for Transition Design as well. Movement Generation (2016), part of the Just Transitions movement, sets a burning platform, asserting that unavoidable change is coming. They flag a need to care for equity through transition, “Transition is inevitable. Justice is not” (Climate Justice Alliance, n.d.).

For Regenerative Agriculture, the Just Transitions Framework helps to flesh out what is meant by the social aspect of regeneration, links Regenerative Agriculture to broader changes in the economy and social landscape, and offers another avenue of solidarity e.g., solidarity with Just Transitions in addition to the global Agroecology movement. For Transition Design, the Just Transitions Framework provides an example of a vision and guidance for principled action.

Transition requires pluralism

The participants in this research were predominantly white, middle- to upper-class proponents of Regenerative Agriculture. But the discussion of a definition of Regenerative Agriculture calls for an agriculture that is regenerative in ends and means and socially, economically, environmentally, and spiritually holistic. This definition of ‘a Regenerative Agriculture’ means working within the dominant farming paradigm as well as working with marginalized, non-white, First Nations, BIPOC communities, and more to achieve transformational change.

In terms of engaging with the dominant paradigm, where much of the power resides, for wide-scale transition to occur there is opportunity for “transformative organizing” that “constructively

[engages] with those who have oppositional beliefs," including "'conventional' farmers who are threatened and annoyed by the 'holier than thou philosophy'...of Regenerative Agriculture" (Gordon, Davila and Riedy, 2021, p. 820). What does it mean to wade into dialogue in 'oppositional' territories for Regenerative Agriculture—and for Transition Design? What are the key areas of tension, beyond the contestation around 'regenerative'? To what extent should the interaction between niches (Regenerative Agriculture, agroecology, permaculture, organics, et al.) and dominant paradigm (conventional agriculture) produce a plurality of new forms (like resilient agriculture)? Might these interactions bring innovation to Regenerative Agriculture, are proponents open to being influenced? In what ways can Regenerative Agriculture practices vary and still have regenerative outcomes—and make a difference in climate outcomes?

In terms of engaging with First Nations peoples and marginalized communities in Australia, do farmers and agricultural stakeholders know where to begin? Participants in this project have started first with building relationships with local Aboriginal and Torres Strait Islander people. This aligns with the protocols offered by Yunkaporta (2019), "Respect, Connect, Reflect, Direct", where the first step 'Respect' is about learning and following cultural protocols of introduction, roles, and boundaries and taking the time to build relationships (p. 274-5).

There are many strategies suggested to support social justice in agriculture, for example from the Agroecology movement (Iles, 2021) (including the international peasants' movement La Via Campesina), and Just Transitions leaders like Movement Generation and the Climate Justice Alliance. Strategies include investing in conditions, supports, facilities, and activities that nurture farming family, community wellbeing, and mental health. Although much of the power to address social justice, wellbeing, and food sovereignty sit with government, related agencies, and business (including agri-business), from my professional practice and from sources like the Australian Food Sovereignty Alliance there is much that individual landowners can do. A brief list of strategies is named in the Field Guide (p. 100).

Engaging constructively with difference

As we have seen, conventional farmers and Indigenous peoples alike have pushed back against Regenerative Agriculture. Some conventional farmers are unconvinced that the approach will deliver the yields they are after, some are risk averse without a clear pathway to lift and shift existing methods. Some farmers have protested being excluded from the movement and being judged for use of chemicals, expressed defiance and resentment at the insinuation that their

approach is degenerative, and argued that it's just not practical—'we have to feed the world' and 'you can't go green when you're in the red'. Adding the concepts of social justice and a regenerative economy is even more off-putting, for some. Meanwhile Indigenous leaders around the world have challenged the permaculture and Regenerative Agriculture movements, arguing that they "leave out our worldviews and continue the pattern of erasing our history and contributions to the modern world" (Cultural Survival et al., 2020).

To increase the uptake of Regenerative Agriculture in any direction, supporting transition means navigating difference. Just Transitions emphasizes just means for just ends, counseling that "solving one problem while creating another is no solution at all" (Movement Generation website, 'Theory of Change' section), "what the hands do the heart learns" and that "if it's the right thing to do we have every right to do it" (Movement Generation, 2016, p.21, 22).

Transition approaches ask us to be mindful of what people stand to lose in the process of change. A design approach seeks to work with productively with constraints and tensions. These mediating stances ask: How might we engage constructively with difference? Strategies for engaging constructively with difference are listed in the Field Guide (pp. 96-97).

6.7 Phase 3 – Harvest

About Harvest activities

After more than five years of immersion into the sector and building relationships, three years of developing a business experiment, engaging with various collaborations, and undertaking testing, it was a good time to take stock and evaluate what had emerged from the Case Study project. It was also a good time to draw a line under the project and wrap up this PhD research.

In the final phase of the project, I synthesized the project findings into a Field Guide over several iterations and sought feedback from agriculture sector participants, social design practitioners, and change makers interested in regenerative transitions. The feedback enabled me to notice what I had missed, better articulate the research and findings, and keep honing the approach to enhance the potential for transition.

Once begun, this work never ends. It is my sincere hope that these projects and the relationships that they have helped foster will continue, in various permutations, for a very long time. I take comfort in the advice from Wes Jackson of The Land Institute:

If your life's work can be accomplished in your lifetime, you're not thinking big enough.

Steps of the Harvest phase

Synthesis into an Illustrated Field Guide

Although the Field Guide may come across as a design output (artefact) that has emerged into the world fully formed, it is simultaneously a collation of the threads that I have been iterating through the course of this research, a unique and surprising (to me as the author) synthesis of those materials, and a work in progress. Will it ever be 'complete' or 'finished'? The design stance says 'no'.

From the moment I landed on Transition Design as the research topic and a Transition Design project as the vehicle for research, the design impulse to create something useful, something that enables others, shaped how I conceived of a final project output. As practice-based research, a final project output was part of the requirement. Practice-based outputs can include artwork, performances, presentations, websites, and more. I wanted to offer a resource. As a designer coming into Transition Design, I went looking for information that would guide my practice, which I stepped through in the first five chapters of the thesis. Having worked in various forms of design thinking, service design, human-centered design, etc., as discussed in Chapter 5, I was used to accessing—and having to develop for clients—resources that helped guide practitioners through the various design processes (for example https://servicedesigntools.org); IDEO, 2009; and Stanford dSchool, 2012). In my work over the past 20 years, I have co-created more than a half-dozen different design-based toolkits, practice 'playbooks', and process guides to support various clients to embed design-based approaches. Practice guides are a go-to tool for social forms of design, and although there are empirical cases available for reference (Chapter 2) and a description of the emerging Transition Design approach (Irwin and Kossoff 2017a and 2017b; Irwin 2018 and 2019a), Transition Design did not have a guide for assembling practice when I began this research or at the time of this writing.

It was also not clear how to stitch together the two halves of this research: the Transition Design project Case Study and the Transition Design practice findings. Originally, for instance, I conceived of the two halves literally as two different playbooks, or perhaps one playbook where the first half was printed normally and then you flip the book over and begin the second half from the back cover, upside down from the first half. I contemplated for a while that perhaps this format wasn't

accessible enough, perhaps it would be too dense. I considered setting up a website with a series of resource pages, the Case Study, and a blog. I may still do that.

In the end, after contemplating these many options, I concluded that it would be hard for readers to conceptualize the role of Transition Design and the value of the approach (presuming that is what they would observe) if the two were not part of a single whole, separate but in dialogue with one another. And so, I ended up with the Field Guide format through iterative experimentation with form, which first introduces Transition Design and associated practices, and then provides a detailed Case Study that highlights the design methods along the way.

Without the Field Guide or some output that summarized the Transition Design project, members of the working groups or participants in various parts of the research might be able to highlight their parts of the experience and the potential they saw there, but they would likely not be able to conceptualize the full project, and would not really be able to comment on the potential of Transition Design to add value to Regenerative Agriculture transitions or sustainability transitions more broadly. As discussed in Chapter 5, it was important to seek feedback on the Field Guide from project participants as well as practitioners. To obtain feedback, I conducted one last round of evaluative, semi-structured interviews with 12 agricultural stakeholders and participants in this project and 6 social design and/or transition practitioners. Based on the feedback, I iterated the Field Guide one last time.

Reflections on the Harvest phase

As set out in Chapter 2, one goal of this research was to make a Transition Design project and the approach more tangible to anyone who might be interested in undertaking Transition Design. For designers, it was my hope that I could demonstrate how traditional design skills can be parlayed into non-traditional design disciplines. Another goal was to identify methods, tools and approaches from other disciplines that might be useful to Transition Designers. The Holistic Decision Framework mentioned earlier in this chapter is an example of tools that Transition Designers might adopt and adapt. In this section I will reflect on the use of key outputs, methods, and tools, like the creation of a Field Guide and the use of a Theory of Change. I will also discuss participant reflections on the approach and the value they see in Transition Design.

Demonstration of Transition Design outputs, methods, and tools

Field Guide

Design is form-giving, and every form of design has its artefacts. For instance, when developing coffee mugs, product designers make various sketches, models, and functional prototypes, etc. The Field Guide developed as part of the Case Study project is the form chosen for the final project output. It includes designerly artefacts like diagrams, illustrations, websites, and ads. As discussed, the Field Guide did not leap into the world in its current form. Getting to the final form was a process of design.

Visual communication

My professional education is in graphic design. I formally worked as a designer and design manager for eight years, with six of those years in a product development company. I also set up my own business design firm in Seattle, which I ran for three years. Since 2008, I have been working in various forms of non-traditional design, whilst still using my traditional design skills but adding new skills, methods, and tools into the mix.

All the skills that I used in traditional design have been used in this project. Experience with graphic design, branding, and illustration was critical to communicating what I was finding, and I was also able to make use of those skills in working groups. I have meager video and website skills, but even those skills came in handy along the way.

I felt it was critical to demonstrate to designers from traditional disciplines like graphic design and product design that these skills are not only transferable but are also vital to Transition Design.

Personas

Personas are a design tool borrowed from service design and were used in eight of the twenty-five empirical cases analyzed in Chapter 2. Rather than using individual stories (which may be identifiable), personas present an aggregate picture comprised of the experiences of multiple people, illustrated as stories and data. The idea behind working with personas is that, although each person and their situation is unique, there are often patterns in needs, experiences, and perspectives. Understanding these patterns can help services tailor their offerings, communications, interactions, etc. Through personas, designers to use their own capacity for empathy to help build empathy among others.

I use personas with caution. There are critiques of the use of personas (for instance, in McKercher, 2020; Mages and Onafuwa, 2019). McKercher (2020) raises concerns where personas over-generalize, reinforce stigma, use meaningless detail, and perpetuate privilege and deficit

mindsets, whilst noting that they can be helpful in communicating difficult experiences or avoiding confidential disclosures (p. 186). Mages and Onafuwa (2019) argue that the 'usability' origins of personas are out of place in Transition Design, that they may reflect the hegemony of the individual and the current culture, valorize the worst aspects of prioritizing needs, neglect the relational character of designing, and help bake privilege into the system (pp. 267-8). I respect these critiques and agree with the risks flagged in both. I also feel these risks come with any tool we might use and with design itself because design has for so long been steeped in Western capitalist traditions. For me, it will be an ongoing practice to exercise sensitivity to how every tool, practice, and method we use has the potential to perpetuate unsustainable worldviews, power, and privilege or how it can be used to help foster equity, justness, renewal, plurality, and ontological openness.

I felt it was important to include a diverse range of personas in the Field Guide (pp. 78-85) to underscore the point particularly to agricultural readers that there exist very different views, strengths, needs, and starting points among people who may transition their agricultural practices. Personas helped me demonstrate that any action or strategy designed to support transition should consider a broad range of perspectives. Personas provided a way for me to communicate diverse perspectives, whilst avoiding sharing stories of specific farmers.

There are limitations to the set of personas in the Field Guide and they would need to be further tested and refined for specific audiences. The personas are based on the sample set from the Case Study project, so they likely do not represent the diversity of transition perspectives even in the state of NSW and may not extend beyond mixed grazing and cropping. Participants who responded to the invitation overly skewed white and male, although I did meet with multiple couples and interviewed one female farmer. In targeting Regenerative Agriculture proponents, farmers who were interested responded but none identified to me as BIPOC, LGBTIQA+, peasant farmers, or as having a disability. Australia also has a long history of removing Aboriginal and Torres Strait Islander peoples from their land and a struggle for access and land rights, and First Nations peoples are demographically under-represented in agriculture here.

Theory of Change

As discussed in Chapter 4, a Theory of Change represents the underpinning logic of how we expect change occurs and outlines the many elements we assume are required to bring about specific outcomes in a context. Different Theories of Change operate at different levels, and over the course of the Case Study I developed two Theories of Change, operating at different levels.

The Theory of Change for Regenerative Agriculture (Figure 45) is a synthesized output of the barriers, opportunities, and known strategies, collected into Opportunity Areas, identified and iterated during the Case Study. The format of this Theory of Change is designed to the criteria set out in Chapter 4, including embedding a changed human-nature relationship, tracking environmental impacts as well as social, spiritual, and economic impacts, incorporate multiple interventions at multiple levels of the system, avoid monolithic solutions, design for plurality and agency, look for ways that small changes can seed bigger changes, and linking and connecting across networks and scales. Agriculture is one component of how we care for our environment and steward resources, and so this Theory of Change is nested into one river of the Rebraiding Rivers Theory of Change, interdependent with the other rivers of change as discussed next.

'Rebraiding Rivers' (Figure 46) is an example of a visual Theory of Change that names the many rivers of societal change that need to come together for transformative change. The concept in this image is that, not only do each of these rivers need to be 'rebraided', but that change isn't possible unless there is reparation for some of the harm done over the course of history and unless the pain of loss associated with transitions is processed and transformed through 'wetlands' of healing. Drawing from Bridges (2004 and 2009), Cultural Survival et al. (2020), Eisenstein (2013), Fassler (2021), Hawken (2017), Land (2015), Movement Generation (2016), Scharmer (2009), Smith (2012), Suchet-Pearson et al. (2013), Yunkaporta (2019, 2021a, 2021b), the conclusion is that healing and reparation is necessary as part of any changes we might make to our societal systems and structures if we are to create space for regeneration and transition to wellbeing, abundance, and resilience.

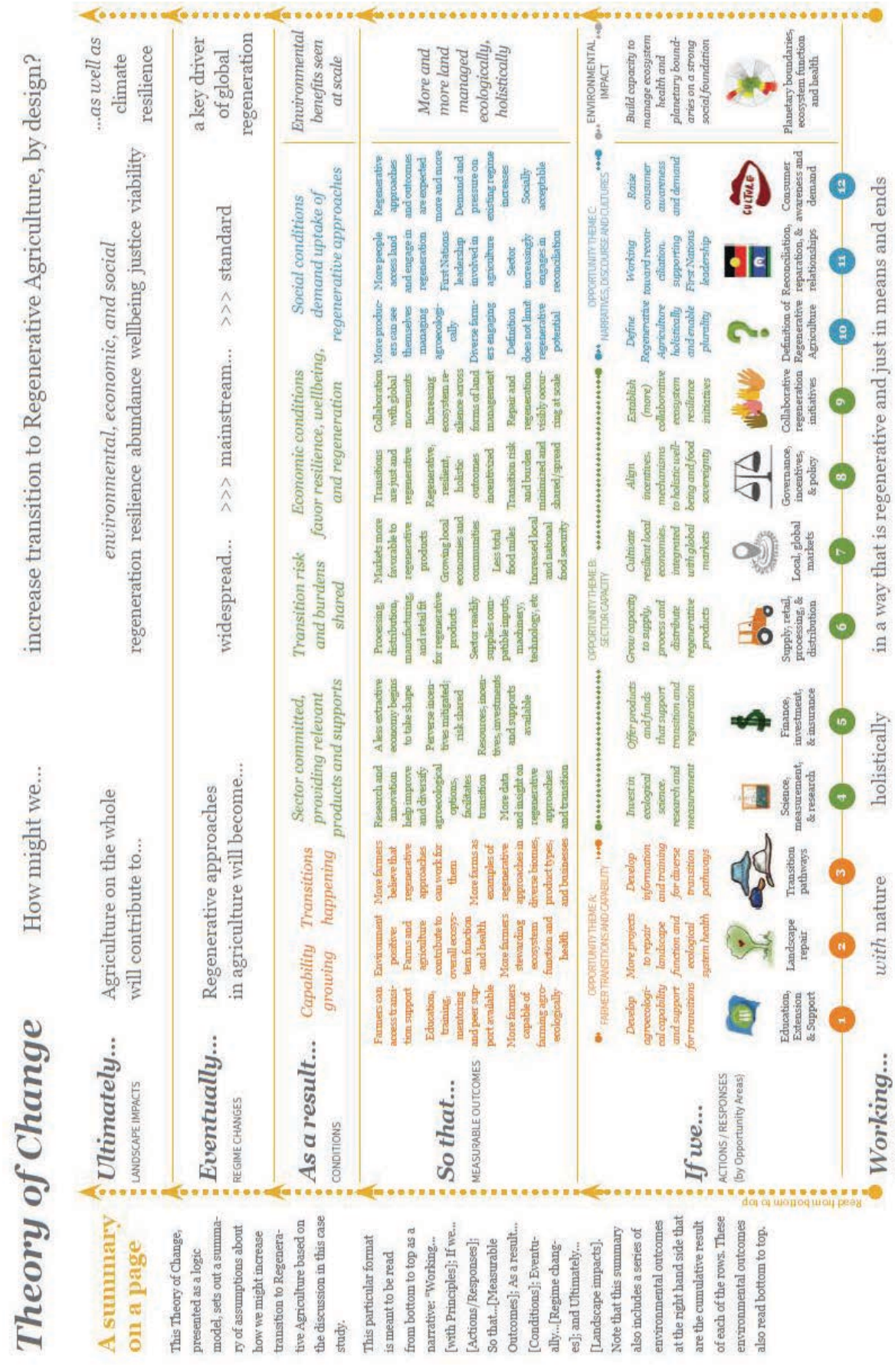


Figure 45. Theory of Change for Regenerative Agriculture transition



Figure 46. Rebraiding Rivers—a Theory of Change for sustainability transitions

Design provocations

Design provocations are a creative all-call, a challenge and an ask, put to an audience. The intent is to engage collective imagination and wisdom in problem solving, or to simply get a response. A stimulus is provided to elicit responses.

The Field Guide resulting from the Case Study project is a design provocation, and it also contains design provocations—both explicit and implicit. One of the explicit design provocations in the Field Guide is a call for readers to put forth their visions for agriculture—with the hopes of arriving at a pluriverse of visions.

Regenerative Agriculture in NSW is now a dispersed grassroots-meets-corporate movement with no locus of control, no organization, no membership as such, disagreement internally and externally to the movement about definition. The prospect of getting to a single, shared vision of the future through collaborative processes feels unlikely but also is not necessarily desirable. Immersed in the movement for five years, what I have concluded is that—if we take the interrelationship of social, economic, and ecological wellbeing seriously and listen to all who challenge a Regenerative Agriculture that is not holistic—then what we are looking for is not a vision for Regenerative Agriculture, but plural visions for a wholly transformed agriculture.

Putting out a provocation for many visions opens the possibility, invites dialogue about potential visions for transition to diverse forms of agriculture that are regenerative.

Participant reflections on the overall project and role of Transition Design

In the final round of evaluative interviews to obtain feedback on the Field Guide, I spoke with 18 different participants. Participants saw a previous version of the Field Guide, and it has been iterated based on their feedback. Seven farmers participated, ranging from innovators to early adopters, farmers who are also sector suppliers, and farmers in transition. Twelve were from agriculture and six were practitioners e.g., social, design, and transition practitioners. There was some overlap between these two groups. Some agriculture participants had their own practice in extension, education, or consulting. Some were influencers and advocates for change. Some influencers straddled agriculture and practice. And some non-agriculture industry practitioners had experience in supporting transition and capacity to take up innovation in areas like agriculture, energy/net-zero transitions, regenerative economies, and regional/community development. There were academics, researchers, and evaluators in the mix, with distribution across agriculture, energy transitions, and design disciplines.

Interviews focused on the extent to which this research had achieved its goals through the working groups and Field Guide. Questions to participants were asked along the lines of 'value to transitions', 'value to practitioners', and contribution to 'constructing a Transition Design practice.' Responses are organized thematically here.

As a piece of designed communication, I set criteria for the Field Guide based on participant discussions of how to promote change. A successful Field Guide would need to: be friendly, engaging, and easy to read, potentially use humor, make complexity and unfamiliar topics more accessible and easier to work with, be careful with language and terminology, and deal with difficult topics in non-polarizing ways, or ways that will engage a (fairly) diverse audience.

Participant feedback conveyed that I did achieve those goals, as successfully as I could have hoped for (with tweaks)—but that to create real impact I would have to continue pushing the work forward, whilst continually checking how it was positioned to ensure it is effective in reaching diverse audiences. The feedback and changes I incorporated into the Field Guide are reflected in the following sections and are summarized in Table 16.

Reaction to the Field Guide

The overall reaction to the Field Guide was positive. Social, design, and transition practitioners were the most enthusiastic about the Field Guide. It also got a positive response from farmers, influencers, and researchers. It met the goals of being friendly, approachable, interesting to read while dealing with a lot of complexity and working to make that complexity easier to grapple with:

> *First of all: WOW. That was the reaction – it struck me not just as a nutrient dense body of work – it's beautiful – [it has] your personal flourish...I see you in this...Beautiful and accessible, bespoke diagrams – they cut through. Use of quotes— you give them a pop, a page. Digestible and practical content – logically and lyrically (158 Regenerative Agriculture advocate).*

There is a need to further emphasize transition differences by sector—for instance among pineapple growers, cane growers, cotton versus graziers, etc. Transition pathways vary by type of farming, biome, structure of industry, etc. This is an area for further research.

There were several mentions that it would need to be read again at later times to get the value, "Overall impression: I need to re-read this a bunch of times" (114 Regenerative farmer).

For those attuned to practice, there were several mentions of: appreciating that William Bridges' Transition Model had been brought into Transition Theory; the power of comparing and then bringing together multiple Transition Theories; and the value of having a process and how process helps people work through initiatives in complex contexts. A few quoted the idea of decision-making by 'congruence' back to me. Although I did not list them in the field guide, Bortoft, Goethe, and Capra, also named in Transition Design, were named to me as philosophers from Western traditions who surface the idea of holism in Western philosophy.

The Field Guide was not as accessible for others, particularly for those who were not comfortable with design or practice: "The design angle…it's challenging to think about how that works" (114 Regenerative farmer).

And it still represents a lot of complexity. It is a fast jaunt through the whole of the agricultural sector, Transition Theory, and what design means in these contexts. A few participants, particularly those from a very different ontological grounding found it "quite a tough read" that grappled with very "slippery topics" (164 Academic and institutional stakeholder).

I discussed a few modifications with participants to help address this challenge. For instance, in the first iteration it read more like the discussion in my thesis, which is most appropriate for an academic audience. I was encouraged to present the information, not how I got there, and asked to more directly link Opportunity Areas and working group project examples, signpost the role of design in working group project examples (responses), and be clearer about when I moved from researcher voice to designer/practitioner and change agent voice. The second version attached to this thesis incorporates those changes and is a 'cleaner' read.

Language and terminology

In the first two rounds of interviews, language and terminology were noted by participants as having the power to push away or encourage farmers. The most significant example in this research is the word 'regenerative'. Proponents of Regenerative Agriculture have developed a reputation of being "preachy" and being an exclusive club. But there are also instances in the discourse where conventional farmers are labelled as "degenerative", or farmers taking the word 'regenerative' to imply that their management has resulted in degeneration, which has caused some offence. Two participants mentioned they "don't think shame works" (167 Transitions practitioner). Another participant emphasized the negative effects of proponents being quick to criticize anyone not viewed as having implemented changes to the fullest.

The feedback reiterated the advice I was given during Scoping Research (discussed at the beginning of this chapter) to be very careful with my language, terminology, and framing, and to take a compassionate stance, acknowledging that most farmers love their land, are trying their best to do a good job as farmers and in providing for their families, and are likely to have suffered enormously through the vicissitudes of weather, markets, and life. Although I felt that I had worked hard to take a non-judgmental stance, it was clear I still had work to do to avoid triggering defenses where I could. For instance, the word 'sustainability' had to go:

> *Sustainability for farmers is viability, keeping the farm going and in the family. Saving the planet is important but it's not the primary motivation (109 Extension officer).*

At the same time, I was urged to hold steady on particularly vital but thorny discussions, like social justice and reconciliation with Aboriginal and Torres Strait Islander peoples. Seeking to take a constructive approach, I incorporated this feedback into the final version of the Field Guide, reframing and reorganizing the content to emphasize the discussion of social justice in terms of complexity, opportunities, and strategies.

I retained the word regenerative, however. First, it is impossible to talk about Regenerative Agriculture without it. But perhaps more importantly, many felt that it represents exactly the future we desire as well as how we will get there. They saw power in the idea of 'designing regenerative transitions', and in 'just and regenerative futures' (and economies). The concept of 'regenerative' also proved fundamental to design as well as agriculture (discussed in Chapter 7).

Whilst it was agreed that my primary audience was people working for change, whether in agriculture or otherwise, I was also encouraged not to assume limited appeal.

<u>Key concepts to draw out</u>

Participants reflected that there were key concepts I could emphasize. For instance there was a need to draw out more strongly the element of push back from the dominant paradigm, the reality that push back is actually risky and dangerous to changemakers, the amount of power that the dominant paradigm has, the potential for dystopian outcomes and loss (whether Regenerative Agriculture is successful or not), and the extent to which Regenerative Agriculture is still very, very tiny by comparison with the dominant regime (158 Regenerative Agriculture advocate).

At the same time, one participant noted the value of focusing on ‘desirable futures’—to emphasize the element of hope.

Multiple participants reiterated the importance of the facilitator role, the value of generative design facilitation, the ability to put frameworks and structures under conversations, and the need to create new possibilities together (104 Researcher; 109 Extension officer; 158 Regenerative Agriculture advocate; 160 Social practitioner; 168 Regenerative Agriculture advocate).

Among extension agents and educators there was a criticism that I had omitted the critical role of extension, the dynamic of diffusion via extension, and the power peer groups. I note that there was a deliberate choice based on Transition Design practice and Transition Theory to focus on the systems element of transition, not just farmer transitions. Furthermore, the market is primarily focused on the personal and skills element of transition. It’s appropriate to highlight the role of extension, individual growth and development, and human psychology, but I retained the broader focus on systems change and the conditions for transition. In reflecting on this feedback, I felt the issue was a matter framing and phrasing, of surfacing the role of extension and education more clearly, as it had been implied within some of the Opportunity Areas. Opportunity Area #1 in the Field Guide has been rebadged as 'Extension, Education, and Support' to present the role more clearly and help make opportunities within those disciplines more visible.

A couple participants recommended to draw out regen entrepreneurship, in part because a large proportion of people who are buying or acquiring land in the current market in Australia are not coming from a farming background and bring diverse skills (141 Farmer in transition).

Some of the participants welcomed the inclusion of a discussion of social justice issues, access to land, and learning from Aboriginal and Torres Strait Islander people. But they wondered: how do we talk about learning from First Nations people without continuing to steal and reappropriate, how do we increase access to land in the context of such a “tortured space” (104 Farmer in Transition). The trend of growing interest in First Nations wisdom isn’t unilaterally welcomed: “What colonials want is access to intellectual property that is owned by First Nations people and in many ways that is the last thing they own… I just challenge the notion that we have the right to extract the IP without some kind of fair price" (141 Farmer in transition). Where there is intent to work with First Nations people, it is complicated by complex relationships and situations, produced by colonization, in which in many cases no one has the cultural authority to engage. Rather than seeking one singular type of model for engaging with First Nations people, “Whatever creates relationships between those two communities is the aim" (104 Researcher). Based on

these discussions I directly highlighted the tension between valuing (and not stealing) intellectual property and the genuine desire to learn from the wisdom held in First Nations cultures.

Multiple participants commented that weaving Yunkaporta's work into the process was appreciated, some requested emphasis on the integration of all the elements as well (spirit/gut, heart, head, hands) or the integrative role of design.

The relevance of design in transitions

Endorsing the relevance of design to transitions, one participant wrote a ‘quick email’ reflecting on the value of the work, and a discussion we’d had about whether transition was “designable”:

> *Your work shows that transition is designable, by that I mean that having design capability woven through how individuals, groups, institutions, approach transition makes it—I think—far more robust, less fragile. I think of Transition Design practice (combined with other practices) creating strength in a transition through empathy, clarity of purpose and principles, ongoing understanding of context, translating into concrete....as I think about the complexity and uncertainty and scale of the challenge I guess I think that designers are needed throughout, not just "up front", not [just] to the point where you have a robust, tested, design. But in an ongoing way as the context is changing so fast […] designers are the ones, I think, who can design adaptive capacity into our new systems (167 Transition practitioner).*

Role/Value of Transition Design

At the start of this research, it was clear that the topic of transition resonated with farmers. Five years later, the topic of transition is on the radar of practitioners as well.

For a few of the practitioners, the greatest value was in naming Transition Design itself as a practice that can support the integration involved in collaborative, transdisciplinary efforts that holds the complexity of working at different layers of the system (160 Social practitioner).

Another participant emphasized the value of pointing to design processes and interventions/ responses at the “meso” level “because that it the local level people inhabit…The problem occurs at the micro and the meso scale... [Our discipline has] been guilty of doing this macro scale thing and people are fundamentally interested in their own locale" (162 Academic and practitioner).

What next? Myriad permutations and applications—Customized for audiences

Participants felt that the ability of this work to create a real impact particularly in agriculture would be driven by repackaging this material into diverse formats for different audiences and applications, and by talking more about it. Several participants (agriculture and practitioners alike) identified the opportunity for this material to be extracted into many different lengths, parts, formats, and styles:

> *You've got a big resource there that you can take many hundreds of individual bits if not [more]…it's the tip of a very large iceberg depending on what wanted to do with such things (114 Regenerative farmer).*

Suggestions included a short, animated video, breaking the content into shorter posts for the TransitionAg website and social media, a newsletter series, presenting at the annual Agricultural Extension specialist conference (APEN), developing resource packages for educators, extension agents, and consultants, etc., "gentle, well-crafted long form", a practical workbook.

In terms of audiences, there were many ideas: influencers, educators, extension officers, corporations, corporate and council ESG (sustainability) strategies, philanthropists, collaborative initiatives, organizations, networks, institutions, agencies, systems like education, and government including local councils and policymaking—anyone working to support transitions—whether transitions in agriculture, regen economies, ecosystem services, ESG strategies, or other.

Table 16. Summary of evaluative interview feedback and Field Guide changes

THEME	KEY POINTS	CHANGES
Positive / enthusiastic reactions	• Reactions were primarily strongly positive and even enthusiastic • Friendly, approachable, interesting to read while dealing with a lot of complexity • Personas as having immediate, tangible, and relatable value / Opportunity: further emphasize transition differences by sector • Value of William Bridges' Transition Model—articulating the experience of transition • The need for process; how process helps people work through change in complex contexts • Appreciation of the idea of decision-making by 'congruence'	
Critical reactions	• The Field Guide was not as accessible for some, particularly those who are unfamiliar with 'design' or 'practice', and for those who come from very different ontologies • The Field Guide gallops through the underpinning theories of transition, the unknown quantity that is Transition Design practice, and a contested space in the agricultural sector (Regenerative Agriculture). It	Moved discussion of "how I got to these conclusions" to the thesis Begin the Field Guide with Transition Design (Original led with Regenerative Agriculture) More directly link Opportunity Areas and working group project examples,

	is “nutrient dense” and each of these three are “slippery”	signpost the role of design in working group project examples (responses) Be clearer about voice: researcher versus designer/change agent
Language, Terminology, Framing and Audience	• The terms ‘regenerative’ and ‘sustainability’, and the exploration of ‘social justice’ did not resonate for some • The term ‘Regenerative’ remains problematic for many farmers but cannot be avoided in this context and has value in all contexts discussed: agriculture, environment, economy, social, and design. • Reiterated importance of language, terminology, and framing, as well as the value of a compassionate stance that views all farmers as caring for the land, doing their best, and having suffered much participating in agriculture. Not a criticism directly, but: how might this be even more effective for more audiences? Being able to communicate in ways that you can be heard is critical to creating conditions for change—without compromising outcomes. This is also consistent with working regeneratively.	Emphasize viability of farming in the Case Study section Removed the term ‘sustainable’ where it was not part of a quote from a participant or literature Condensed, rearranged, and slightly reframed social justice discussion Prioritized change makers as audience and farmers as an additional audience
Key concepts to draw out	• The element of push back from the dominant regime, power, risk to change agents, potential for loss and dystopian outcomes • The appeal of *desirable* futures and the motivator that is hope • The importance of the facilitator role; the value of design facilitation, the ability to structure conversations while generating new possibilities • More emphasis on extension, diffusion, individual development, human psychology, and peer support • Who makes decisions in transitions • The need for more regen entrepreneurship • The difficulty of the genuine, growing desire to learn from First Nations people in the context of history whilst avoiding appropriation; How we increase access to land in the context of a very fraught history and web of relationships	Additional discussion of power, risk, loss, and dystopia Called out the role of extension and personal development more clearly Added brief commentary of decision-making in transitions Added WWF project example featuring regen entrepreneurship Highlighted a bit more of the tension between valuing (and not stealing) intellectual property and the genuine desire to learn from the wisdom held in First Nations cultures
Role of Transition Design	• Seen as very topical and needed now in the context of numerous societal transitions, adaptable to many wicked problems • Value in naming ‘Transition Design’ and designing regenerative transitions • Value of the discipline in supporting other practitioners, groups, organizations in doing their transitions work, and of integrating and bridging disciplines • Value of focusing work and interventions/responses at the meso-level, but also the skill design brings in moving from the micro through the meso-, macro, and meta levels. • Value of normalizing—and building the capability for—changing your mind	

Chapter 7
Practice and methodology insights

About this chapter

Constructing a project methodology (Chapters 4 and 5) and then undertaking a Transition Design project (Chapter 6) over the course of five years has provided rich material for an analysis of practice methodology. In this chapter, I reflect on the end-to-end case process and progress my thinking based on observations from constructing and undertaking practice. Through this reflection, I arrive at a draft synthesis of dynamics of Transition experiences, principles from Regenerative Agriculture that help Transition Designers take approaches congruent with the (regenerative and just) outcomes we seek, an articulation of design as an Adaptive Cycle, and a synthesis of methodology into an Elements of Practice framework which helps deliver on my research objective of supporting Transition Designers to formulate their own practice.

7.1 Novel application of existing methods

As noted in Chapter 5, the bricolage of methods I used was adapted from existing practices, like research, social sector practice, systems theory, and design methodologies, etc. This served two purposes: 1) to help make Transition Design practice more accessible to others who have existing design practices and 2) to better understand Transition Design by observing how existing practices need to be adapted. This is specifically discussed in the development of an appropriate Theory of Change (Chapter 4) and in the use of personas (Chapter 6). Table 17 lists methods used by discipline, to the best of my knowledge.

Table 17. Catalogue of methods by origin

METHODOLOGICAL ELEMENT	ORIGIN
Design process	Design and engagement meta-activities from relevant existing processes (Chapter 5)

Sociological origins	Action Research (Chapter 3)
Ontological origins	Living Systems, Complexity Theory, Resilience Thinking and Pluriversal Design (Chapter 2 and Appendix B)
Complex Systems Analysis	Complexity Science, Leverage Points, Cynefin model, Design practice (Opportunity Areas and Objects of Design), Systems mapping (multiple lineages), First Nations knowledge and wisdom
Qualitative / social research	Literature review, semi-structured interviews, analysis
Entrepreneurship	Lean startup, business model canvas, value proposition testing
Skills from traditional forms of design	Illustration, photography, website layout, marketing, social media Experimentation through prototyping, testing, validation, iteration Visual synthesis and sense-making
Human centered and social forms of design, like design research, service design, interaction design, design innovation, etc.	Ethnographic immersion, framing, Opportunity Areas, written synthesis, design facilitation, generative tools, personas, design provocations, design futures/visioning
Social sector, community development, social innovation	Theory of Change and Theory of Action

I note that there is an endless array of methods and tools I did not use. Even with my goal of demonstrating several 'bread and butter' tools for other people interested in Transition Design, so much more is possible. For instance, I can imagine journey maps and business model canvases for transitioning farmers, tabletop prototypes of how a truly *Regenerative Agriculture* might work in local-global economies, acting out scenarios with groups of agriculture stakeholders to explore transition choices, and so on. Furthermore, when jumping into a different transition context (like energy transitions, as discussed in Chapter 6), an entirely different assortment of methods and tools will likely be needed.

As discussed in Chapter 4, embedding new paradigms into Objects of Design can be one of the hardest design tasks. For this research, the practice methodology was my Object of Design, and I found that part of my task was to reflect Living Systems theory through practice, so that means (practice) could be more congruent with ends (sustainability transitions). I believe this an example of the type of shifts which Transition Design framers as well as other practitioners, scholars, and movements, such as Capra and Luisi (2014), Scharmer (2009), Meadows (1999, 2008), and Wahl (2016), Just Transitions (Movement Generation, 2016; Climate Justice Alliance, n.d.), Permaculture (Mollison, 1988), and Agroecology (Altieri, 2018), are trying to facilitate in the effort to catalyse systems change.

7.2 Synthesis of the *experience* of transition

What is the human experience of transition?

In constructing a structure for the Case Study Theory of Change and an approach for the Case Study project (discussed in Chapters 4 and 5), I needed an awareness of transition dynamics.

The models compared in Chapter 4, as summarized in Table 3 (MLP, X-curve, Three Horizons, Bridges Transition Model, and Panarchy Theory) have strong shared patterns and can be layered for a more textured reading of the experience of transition. The Three Horizons framework sets the societal journey over time horizons, the MLP unpacks what is happening between various niche and regime players and the broader landscape, the X-curve adds regime destabilizing dynamics, and the Bridges Transition model narrates the deep personal experiences of individuals and groups. Panarchy and the Adaptive Cycle provide an underpinning rhythm, illustrating the swings between stable and unstable states over time, as well as how systems and cycles are nested. A not dissimilar overlay of frameworks (S-curve, Rogers' diffusion of innovation, organizational change curve, and the style cycle) was proposed by Petrović (2024).

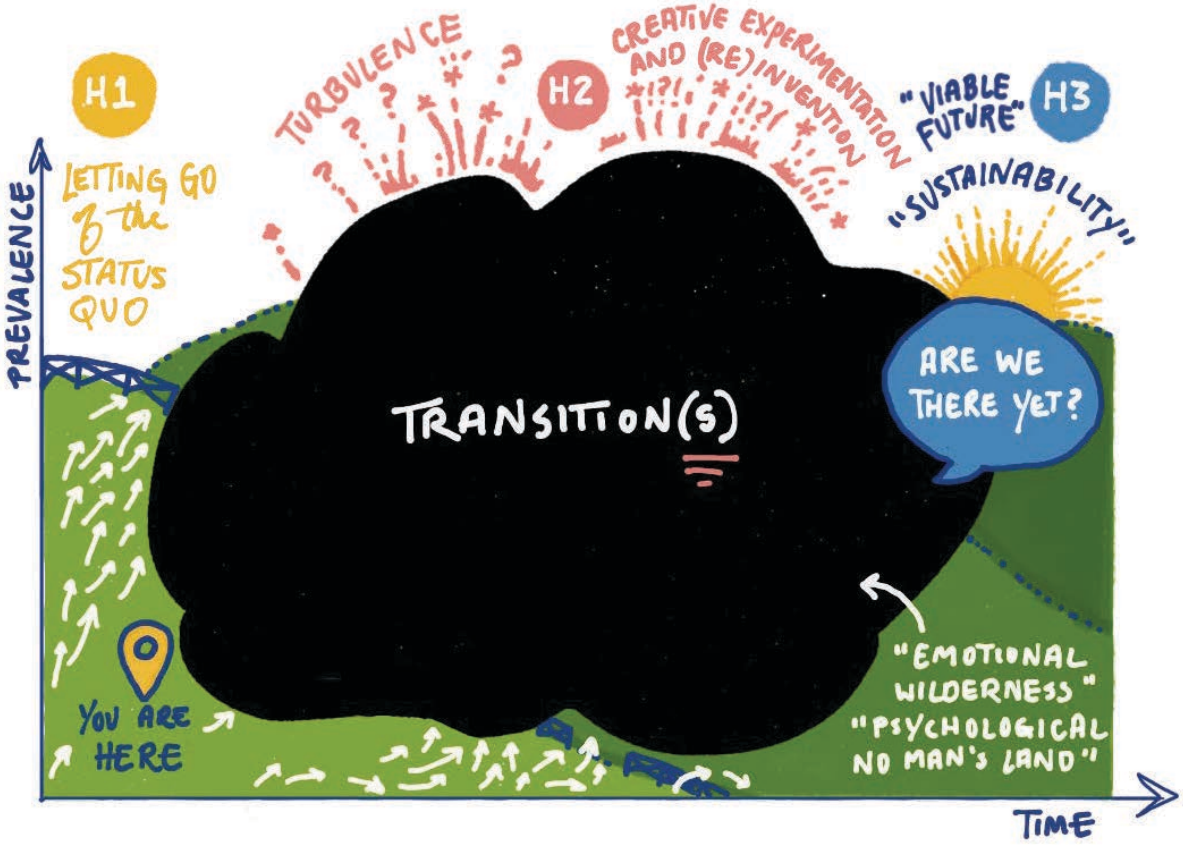


Figure 47. The dynamics of transition experiences

The ‘dynamics of transition experiences’ visual (Figure 47; Field Guide, p. 26) illustrates transitions as a journey over horizons, but the journey is obscured by the ‘dark cloud’ of turbulence, change, and time. Niches (small arrows) encounter each other and align into movements that come into friction with and break down the structures of the dominant regime (fences). The sun (representing the viable future that is possible but not guaranteed) is shining from the distant horizon—it is here and calling us, but not directly overhead. By the time we reach that future, a new transition will be upon us—complete with new challenges.

Seven dynamics of transition experiences

By overlapping the models compared in Chapter 4 and combining them with insights from Regenerative Agriculture, I draw out seven dynamics of transition experiences. This draft list of the dynamics of transition experiences reinterprets Bridges’ (2004) four rules of transition. To recap, those rules are cycling back to old ways; endings are the first phase of transition; expect yourself to resist transition; and that endings must come before beginnings—with a fallow or neutral zone of lostness in between. In these seven dynamics, Bridges’ original four rules are retained and elaborated. These dynamics are a draft and are intended to help describe experiences associated with large-scale change.

It is my hope that becoming attuned to these dynamics can help us be ever so slightly more aware of what to expect and more likely to allow ourselves to be transformed by transition experiences—to “step out of our individual mindset into...shared awareness...[and] a shared space of creative possibility” (Wahl 2016). These dynamics point to agency, whilst offering a means to better empathize with and have compassion for what we and others will experience.

1. First dynamic: Transition has its own dynamics

Geels’ MLP (2002), the Three Horizons Framework (Wahl, 2016), and the X-curve (Hebinck et al., 2022) highlight challenges *specific* to transition. In the Case Study, I observed the dynamics of regime and niche friction in the social ostracization of Regenerative Agriculture proponents (as documented in Massy, 2017), as well as niche-niche friction for instance between Permaculture, Regenerative Agriculture, Conservation Agriculture, Organic Agriculture, and Agroecology.

2. Endings are the first phase of transition

Bridges (2004) declares that “Every transition begins with an ending” (p. 11). As business as usual loses its fit for purpose, transition asks us to let go of the status quo (Wahl 2016). Massy (2017)

similarly points to the role of loss and crisis in helping create the mindset shift required for Regenerative Agriculture transition. What many don't anticipate (as Bridges explains, 2004) is that, even if we choose change, we incur loss—and loss comes with grief.

3. Cycling back to old ways over horizons of time

Following Bridges' (2004) first rule that "when you're in transition, you find yourself coming back in new ways to old activities" (p. 7), and bringing this together with the Three Horizons Framework, we may predict that the past or 'status quo' will be with us even in limited ways for a long time. We can anticipate, as we transition over horizons, that we will find ourselves and society cycling back to familiar territory, old habits, but also remembering (Gunderson and Holling, 2002) what is vital to keep as sacred from the past—whilst developing fresh sensibilities, dynamics, and resources to meet the moment anew (Bridges 2004, 2009; Wahl 2016). As an example, on the Regenerative Agriculture Facebook group there have been regular (often daily) debates about the use of chemicals.

4. Expect backlash; Transition is not guaranteed

Transitions are rife with challenges. Vectors of time in the frameworks do not carry a promise that transformations will deliver exactly what "we" want. No matter what is hoped for, it is risky to assign or overlay our own morals, values, and wishful thinking on horizons. The turbulence and risks of multi-actor dynamics are strongly emphasized here and are perhaps too hidden in Transition Theories. There are diverse actors and power structures at play, each with their own agenda. "Success" from a transition point of view is not guaranteed. The third horizon isn't utopia, and it could be dystopia depending on your point of view. The horizons simply connotate the advent of stable new paradigms, which may or may not be (more) sustainable.

Systems tend to have 'allergic' responses to change, with friction and conflict arising as niches encounter the structures, norms, and power of dominant regimes—this is a function of 'revolt' or backlash named in the Panarchy model (Wahl, 2016) and the resilience capacity of systems. This dynamic speaks to the fear of transition and the defensiveness of conventional farmers challenged by Regenerative Agriculture.

We also personally resist transition's uncertainties, even when pursuing self-selected goals.

5. Lost is on track to new ways forward

Bridges (2004) explains that endings must come before beginnings and, like Wahl (2016), advises that turbulence in-between is necessary. Eisenstein (2013) describes this in-between stage of ‘lostness' as the 'sacred space between stories. It is a time to seek stillness, Source, and wholeness for direction, to nurture the seeds of the future that we carry (Scharmer, 2009; Yunkaporta, 2019, 2021a). Getting lost, they argue, is what helps us ‘come home' to the future we seek, like a pre-requisite of sorts. The act of being present (presencing) and grappling with the challenge of transition creates a crucible for creative experimentation and reinvention.

It is this stage that Bridges, Scharmer, Snowden and Wahl assert is the perfect time for probing, sensing, making, re-making, innovating, re-structuring, re-patterning, acting, and reflecting — because the lostness, a bewildering wilderness and potentially dark time, is the exact space that is conducive to creating and testing new ways forward. It is the in-between zone, the mixing of niches, destabilizing regimes, uncertainty, and a helping of chaos—like the brackish waters where freshwater meets salt water—that is the most fertile zone for re-imagining, experimenting, and re-making (Yunkaporta, 2019). The darkness is full of hope.

Bridges (2004) clarifies that lost is not stuck—being stuck results from not engaging with transition (p. 121-130). So, go! Get lost in transition. ;)

6. Beginnings come after endings

Bridges (2004 and 2009) takes care to emphasize that we must process endings to arrive at beginnings. However, Bridges as well as the others point out that we can find and amplify fragments of the future today, as William Gibson puts it, “The future is already here—it’s just not very evenly distributed.” We must first create space to grow these seeds, which is what endings make possible. For instance, farmers must let go of old practices to explore new ones.

The future, once we get there, turns out to be one in a sequence of transitions. Transition to sustainability is not guaranteed, circumstances will keep changing, and we will have to continue adjusting what it means to regenerate and protect a viable and just space for humanity. We will keep asking, “Are we there yet?” Meanwhile, every horizon brings the wonder of new learning.

7. Everything is connected

Coming back to Living Systems theory and laws of nature, John Muir reminds us that everything is connected, “When we try to pick out anything by itself, we find it hitched to everything else in the Universe.” The MLP (Geels, 2002) and the Three Horizons Framework (Wahl, 2016) convey that

transition, even if instigated from niche and grassroots efforts, eventually involves everyone and everything, which is a property of complex adaptive systems.

The idea that everything is connected highlights the complexity of transition—and the simplicity in complexity. Connectivity favors holistic responses, which solve many challenges all at once, build in renewal, and achieve the most efficiency with the least energy (a Permaculture principle). Understanding and making decisions based on the interconnection of everything— 'relationality' and 'wholeness'— is advocated by many scholars and First Nations peoples (Mollison, 1988; Scharmer, 2009; Kimmerer, 2013; Suchet-Pearson, 2013; Wahl, 2016; Escobar, 2017; Yunkaporta, 2019, 2021a, and 2021b; Cultural Survival et al., 2020; and more).

There is need to continue to understand how the characteristics of Living Systems play out in Transition Theory and Transition Design practice, as well as continue theoretical and empirical research into the conflict, loss, grief, and "dystopian" dimensions of change.

7.3 Methodology insights from Regenerative Agriculture

I genuinely did not expect was that design would be gifted insight into *ways of working* from Regenerative Agriculture. It may be entirely a matter of luck that I ended up with Regenerative Agriculture as a Case Study topic at a time when the definition of Regenerative Agriculture was highly contested and as a result, I delved into the concept of 'regeneration.' I cannot say whether I would have come to this conclusion if I had chosen a different transition question, but the result for me of understanding the concept of regeneration from a farmer's perspective has implications for Transition Design and I believe also for transitions. As it turns out, the principles that ensure success in Regenerative Agriculture are also critical to success in Transition Design.

Regenerative principles—working regeneratively with living systems

Participants in this research frequently described Regenerative Agriculture in terms of Living Systems principles and qualities of complex adaptive systems (like holarchies, emergence, and nonlinearity), whilst discussing real phenomena rather than theory. I believe that the proponents who argue for the most holistic definition of Regenerative Agriculture—e.g., Regenerative Agriculture as an agriculture that works with the self-renewing and self-organizing properties of nature, that respects the intrinsic value of living and non-living beings, and that contributes to social, environmental, economic, and spiritual (holistic) wellbeing, justice and regeneration—if

familiar with Living Systems theory, would argue that their definition of Regenerative Agriculture is based on or consistent with Living Systems theory. In their view, Regenerative Agriculture is *meant* to work with how nature works. I note that there is a group of proponents of ecological agriculture, which predated the Regenerative Agriculture movement in Australia, that discuss influences which are not associated with Living Systems theory *per se* but are related to the understanding of the human-nature relationship in Transition Design, like Goethe and Bortoft (as named by some participants in this research without citation).

Through the process of discussing the definition of Regenerative Agriculture with farmers I came to three principles that define what is meant by 'regeneration': an approach is regenerative when it works *with* nature, when it is holistic, and when there is congruence between means and ends. The principles are defined here.

Working <u>with</u> nature

The quality of regeneration refers to the self-renewing, self-organizing, life-giving properties of life. Working regeneratively means working *with* nature, *as* nature, and the capacity for/property of regeneration—also known as adaptive capacity and resilience in Living Systems theory.

Holistic

Regeneration is linked with a holistic approach. The term 'holistic' or 'holism' connotes an emphasis on 'the whole' as opposed to a reductionist or mechanistic emphasis on parts, implies Systems Thinking, and in this research specifically means "seeing the world as an integral whole rather than a dissociated collection of parts" (Capra and Luisi, 2014, pp. 4, 12).

By 'holistic', proponents of the most transformative definition of Regenerative Agriculture mean holistic along many dimensions (i.e. "holistic means holistic"), including pursing social, ecological, economic, and spiritual outcomes, and in terms of wellbeing, justice and regeneration, across many systems, at multiple spatial and temporal scales (including 'seven generations'), and with respect for the intrinsic value of all living and non-living beings —because everything is connected.

Some proponents also underlined that a truly holistic definition of Regenerative Agriculture would acknowledge the millennia of First Nations approaches that inform Regenerative Agriculture, whilst the definition of practices would leave room for diversity and innovation, including pluriversal interpretations.

Congruent

This principle speaks to the systems characteristic in which regenerative and just outcomes can only truly be achieved where our approach is congruent with the outcomes we desire—congruent in means and ends. If we desire regenerative and just outcomes—incorporating the just component from Just Transitions (Movement Generation, 2016) and Doughnut Economics (Raworth, 2017)—our approach should be regenerative and just.

The principle of congruency is also named in The Australian Center for Social Innovation's principle that social means are required for social ends, and in Chapter 5 as a factor for testing the potential of an emerging design.

Significance of these principles

To me, there is a stunning symmetry between these three principles of regeneration and the three tests/criteria designers apply to assess the potential of concepts (Chapter 5): Is the design congruent, elegant, and generative? The definition of congruency from the regenerative principles further enhances the meaning, where congruency is not only a test of internal coherence but also a test of means and ends congruence. The elegance test is a test of complexity within simplicity, which is a holistic property. And the concept of *re*generative adds an ethical, ecological responsibility, a sort of 'limits to growth' criteria, to the generative test for the 'life-giving' potential of a concept, whilst surfacing the renewal and healing aspects that are critical to regeneration. I think it is no accident that these symmetries exist between regeneration and design, because design has always been a means for reinvention.

Design can be a process of renewal (Schön, 1983, p. 299) and regeneration (Scharmer, 2009, *xxiii*) (when used ethically) for us as well. Conceiving of regeneration of our environment as regeneration of ourselves, Wahl (2016) references Parker J. Palmer in describing 'listening for wholeness' as a pathway to our own regeneration (p. 40).

These principles have added another dimension to my practice, revealing how I can identify where my approach is not fully holistic, prompting me to check myself as to whether the quality of renewal is present in what I'm doing, and keeping me questioning whether the way I am working is congruent with the ends I seek. I have come to ask myself the question:

> *What feels life-giving?*

These principles offer a rigorous guide for my way of working, but also are a profound source of wonder, challenging me to continually observe the world and my environment. How much do I really know about my environment and the self-renewing properties of life?

As criteria for **designing regenerative transitions**, these principles of regeneration offer Transition Designers an anchor for practice, and another way to keep translating the principles of Living Systems into practice and for embodying a different relationship between humans and nature. I can imagine using the principles as tests and the question “What feels life-giving?” to help cultivate the potential for ontological openness among participants and audiences. I note that this is a start and, like the relationship with any set of principles and Objects of Design, the challenge will be finding ways to (further) embody such principles in practice.

7.4 Design as an ecological process—an Adaptive Cycle

Much to my surprise, the Case Study unfolded in many of the ways I anticipated in Chapter 5. Part of what has changed—evolved—is the language I have found to explain process through the work of constructing my own approach, trying to discuss it with Regenerative Agriculture proponents, and in seeking to support farmer transitions. In this section, I highlight framing as the “home base” of the design process and come to define design as an Adaptive Cycle.

The central, generative role of framing

I mentioned at the start of the process discussion in Chapter 5 that many find design processes disorienting—a muddy and confusing intermingling of different activities and exploration all at the same time. Having worked with design processes for more than 20 years, my experience is that there is a fundamental rhythm to design underneath all the confusion. There is a pulse and flow of activity and a pendulum-like swing in the movement. A vision or design concept may anchor the design process, like a North Star, but it is *framing* that propels us through cycles of process. The practice of framing is discussed by Schön (1983), Dorst (2015a and 2015b), Loorbach (2007), Irwin (2018), and Sides et al. (2021). Schön and Dorst center the role of framing.

For me, the heart of the process that drives the beat, the limits that prevent chaos through divergence and convergence, and the cohering element that bounds the space for design exploration in the turn from one activity to another activity is the practice of framing and reframing. As Dorst (2015b) describes, a generative frame is a crystallization, coherence, and

clarity out of the “initial, messy problem arena”—that creates a ‘unassailable’ bridge between problem space and solution space, opening productive pathways forward (p. 59-60). Dorst defines how a successful frame leads to a ‘fit’ or ‘click’ between problem space and solution space and has the quality of “fruitfulness”, a quality that “[steers] us in a promising direction, allowing us to generate multiple sensible solutions” (p. 78). This description of framing illustrates the ‘generative’ test described in Chapter 5.

As noted in my analysis of process, designers are continuously holding onto a series of frames: how the problem situation has been defined, how the opportunity space has been named, how the future state or ideal situation has been envisioned, how relevant solutions have been conceptualized, how designer, team, collaborator, participant, and beneficiary (etc.) roles have been circumscribed, how constraints have been conceived, and more. Designers hold loosely to these frames whilst moving through the many different activities of design; frames can be used to guide steps where process is not obvious. New discoveries and insights along the way tend to lead to a re-think of one or many frames and thus generate new ideas, strategies, and responses, etc.

Through the process, frames serve as the ‘home base’ and hub of synthesis, integration, and innovation. The practice of framing and reframing—and tracking ‘frame experiments’ (Schön, 1983, p. 62-63)—gives rigor to a design process. All actions in a design process hang on framing, including who is involved and when. The many frames that bound the ‘swing of the pendulum’ determine the scope of problem structuring and solution spaces, the ambition of visions, and the breadth of diverge and converge activities.

The practice of reframing is the practice of learning to change our own minds. One agricultural participant reflected on the potential design approaches hold for helping to shift the culture that exists in agriculture by resetting cultural norms, by normalizing the idea that "it’s ok to change your mind with new information" (141 Farmer in transition). The practice of holding lightly to frames and iterating them when the situation calls for it can be a surprise to stakeholders unused to treating their own frames as malleable. (Re)framing is sometimes a muscle that needs to be collaboratively developed.

It is the very willingness to treat frames as malleable rather than fixed, to listen to the situation’s “back-talk”, that enables reflective practice, critical thinking, navigating complex choices, and the generation of fresh thinking as “the process spirals through stages of appreciation, action, and reappreciation” (Schön, 1983, p. 79, 132). Importantly in the description of the spiraling process (more than a singular cycle) of reflection-in-action, Schön points out how trying to understand,

frame, and respond in the context of the problematic situation changes that very situation (p. 347) and is also a source of renewal (p. 299). This is another way of describing how change occurs *through* a design process and relates to the emphasis that Scharmer (2009) puts on process as purpose, and process as a crucible for individual, group, and collective transformation. A reflective design process, with (re)framing at its core, is profoundly valuable as an enabler of transformation, renewal, and regeneration of self.

Process as an Adaptive Cycle

I will bring together the discussion of framing, process, and ecological ideas of transformation in this section.

The Adaptive Cycle and Panarchy models describe ecological processes of change and transformation. As described in Chapter 4, the Adaptive Cycle, often drawn like an infinity symbol or Möbius loop (Wahl, 2016), represents natural patterns of change in social and ecological systems. Expressing cycles of birth, growth, death, decay, composting, and renewal in social terms, the Adaptive Cycle consists of four distinct phases: 'growth or exploitation' (Γ); 'conservation' (K) of established patterns and resource distribution; 'collapse or release' (Ω); and reorganization (α) (Figure 48).

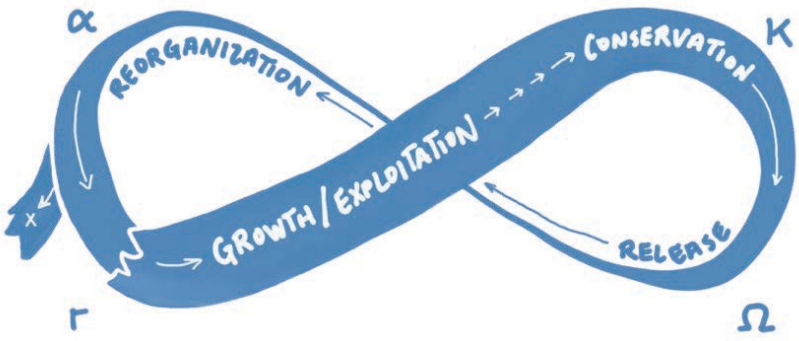


Figure 48. Adaptive Cycle (adapted from Gunderson and Holling, 2002).

An existing vision or narrative for society is representative of a stable state. Transitions are driven by a collapsing vision for society and/or unsustainability in how that vision is enacted. As a vision proves flawed and insufficient, it begins to crumble. Different actors, moving at different speeds and with different agendas, begin to (re)situate within the changing (collapsing) context. As actors form a view of an alternative preferred future, they reframe and respond to bring about that

future, reorganizing in niches and reconfiguring the regime, working to articulate and grow the resilience of their vision in the power grab to anchor a new stable state.

It is into this complex adaptive dynamic that Transition Design seeks to catalyze and materialize systems change. Whether conceptualizing this dynamic through the Adaptive Cycle and Panarchy, X-curve, or MLP, etc., the process of reading of the system state, transformation phases, and actor positionality gives context (at a point in time) for what's needed within a Theory of Change and Ecosystem of Reponses (including actions, interventions, experiments, and conditions like adaptive capacity).

Baumber (2012) brings Panarchy theory into discussion of Adaptive Management in agriculture, characterizing both sustainability and resilience as outcomes of adaptive capacity and self-organizing behaviors. Wahl (2016) describes adaptive capacity as the ability to learn and self-organize, a cornerstone of resilience (where resilience emerges from persistence, adaptive capacity, and transformability) that enables design for 'positive emergence' in the face of disruptive change. Reflecting on the models, we can imagine ways design can be used to catalyze systems change, enhance our adaptive capacity, nurture and grow the resilience of social and ecological systems, and increase the likelihood of 'positive emergence' for a viable future.

The significance of Adaptive Cycles goes further. It is not just that Transition Designers need to be able to read Adaptive Cycles; design *is* an Adaptive Cycle (Figure 49).

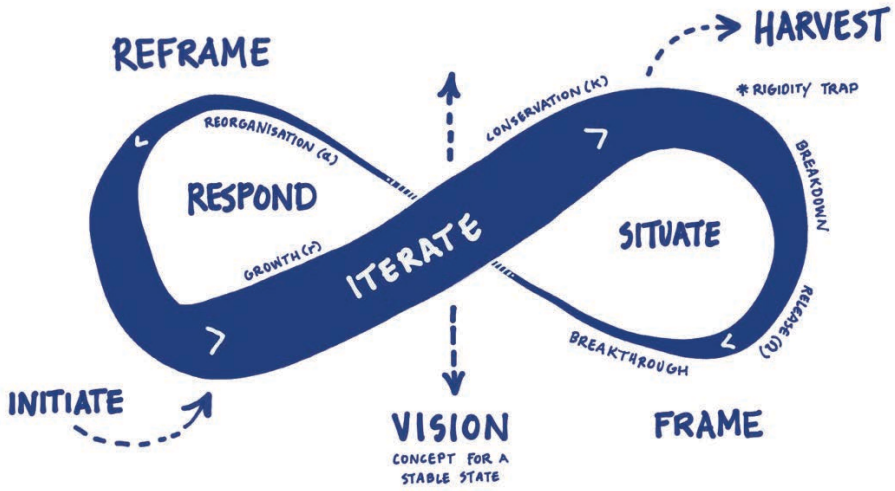


Figure 49. Design process as an Adaptive Cycle (adapted from Gunderson and Holling, 2002)

Consider the tiniest design cycle. You have a thought: something you want to build. You sit down and sketch out your idea, add a few embellishments, then sit back in your seat to have a look. It's not right. You crumple it up and make a different version—informed by what you learned from

those steps. In just a few minutes, you demonstrated an Adaptive Cycle by crystallizing your thinking into an idea you could sketch then elaborate (growth), tinkering with it for the short time that you were still happy with it (conservation), shedding the idea to make room for the new version of the idea that emerged (breakdown/release), and then working through a new series of sketches to get your new idea working (breakthrough and reorganization). The idea you are holding, your concept, is akin to the 'stable state' which is either responding with resilience or being transformed into a new concept (a new stable state). As described by Schön's reflection-in-action and the more recent idea of 'rapid prototyping', design deliberately experiments with micro-cycles of growth, conservation, breakdown, release, breakthrough, and reorganization to materialize change.

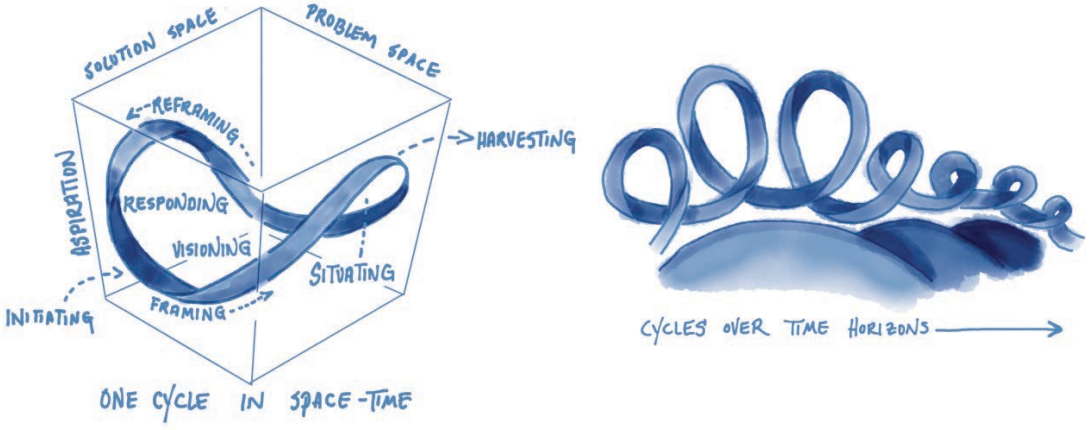


Figure 50. Design process as an Adaptive Cycle in 3-D and multiple cycles over time horizons
At left: 3-D version. At right: version as multiple Adaptive Cycles over horizons of time

This pattern holds for design activities and processes at other scales—including Transition Design. Using the same patterns that design uses to serve the development and refinement of products, brands, and services, etc., the design process can enable us to experiment, test, iterate, and learn about transition challenges, visions, and responses in smaller and faster cycles than the speed of normal societal transitions and structural transformations (experimenting in systems), even though the time scale of transition experiments may be much longer than that of other design disciplines. The scope of design efforts is bounded by the solution space, problem space, and aspiration of design—and that scope flexes with Framing and Reframing activities in cycles over horizons (Figure 50). The rhythm and responsiveness with which design enables us to work to catalyze systems change across an Adaptive Cycle call to mind the dream of 'dancing with systems' (Meadows, 2001; Scharmer 2009, p. 43-44).

The pattern holds for working in agriculture as well. Recall my surprise during the Case Study, in finding what I felt to be a design cycle in the feedback loop (plan-monitor-control-replan) of the Holistic Decision Framework (Savory and Butterfield, 1999). Whilst much of design intervenes in primarily social-material contexts (with ecological impacts), agriculture intervenes in ecological contexts (with social, political, and economic impacts). The context of agriculture highlights the fact that living systems respond to our actions and interventions. The dynamic of reframing, responding, reorganizing, and reframing again is a mutual process among actors and systems, and no one knows better than farmers who work *with* nature about stimulating self-organizing processes, allowing time, and watching for the response before making another move.

For me, it is significant that this articulation of **design as an Adaptive Cycle** begins to reclaim the design process from the exclusive realm of products and markets, and **re-centers design in ecological processes—as a natural adaptive capacity**, as described by Wahl (2016) and Manzini (2014, 2015) and as evident in agriculture.

A note on visualizing process

Even though I am articulating design as an Adaptive Cycle, I would not always communicate design processes in this way. The Field Guide offers three other examples of communicating process for different purposes: 1) as activities over horizons of time (p. 33), 2) as a sequence or cycle of potential activities (p. 32), and 3) as project phase (p. 46).

7.5 Synthesis into an ‘elements of practice’ framework

Transition Design ‘Elements of practice’ framework

The Transition Design framers purposefully framed the practice base for Transition Design in such a way that it would be open to development. Irwin (2018) suggests that the Transition Design approach offers “a ‘palette’ from which practitioners and researchers can configure situation-appropriate designed interventions” (p. 5). Because Transition Design is necessarily open, some self-assembly is required—so my primary research question at the outset of this research was: *How does a person wanting to engage in ‘Transition Design’ construct their own practice?*

In conducting this research, I needed to understand that question for myself first, with a goal of providing value to other practitioners and enabling other people to construct their own Transition Design practices. Toward these ends, I synthesized practice into a diagram comprised of the

practice elements identified during the analysis of empirical cases in Chapter 2 whilst adjusting based on what I learned through the process of setting out my own practice in Chapters 4 and 5, and then undertaking the Case Study as described in Chapter 6. The Elements of Practice Framework is like an organizer caddy for all the elements of a Transition Designer's practice—or, perhaps more appropriately, a *compass* for assembling and guiding a practice through complexity (Figure 51; Field Guide; p. 21). This section defines each component.

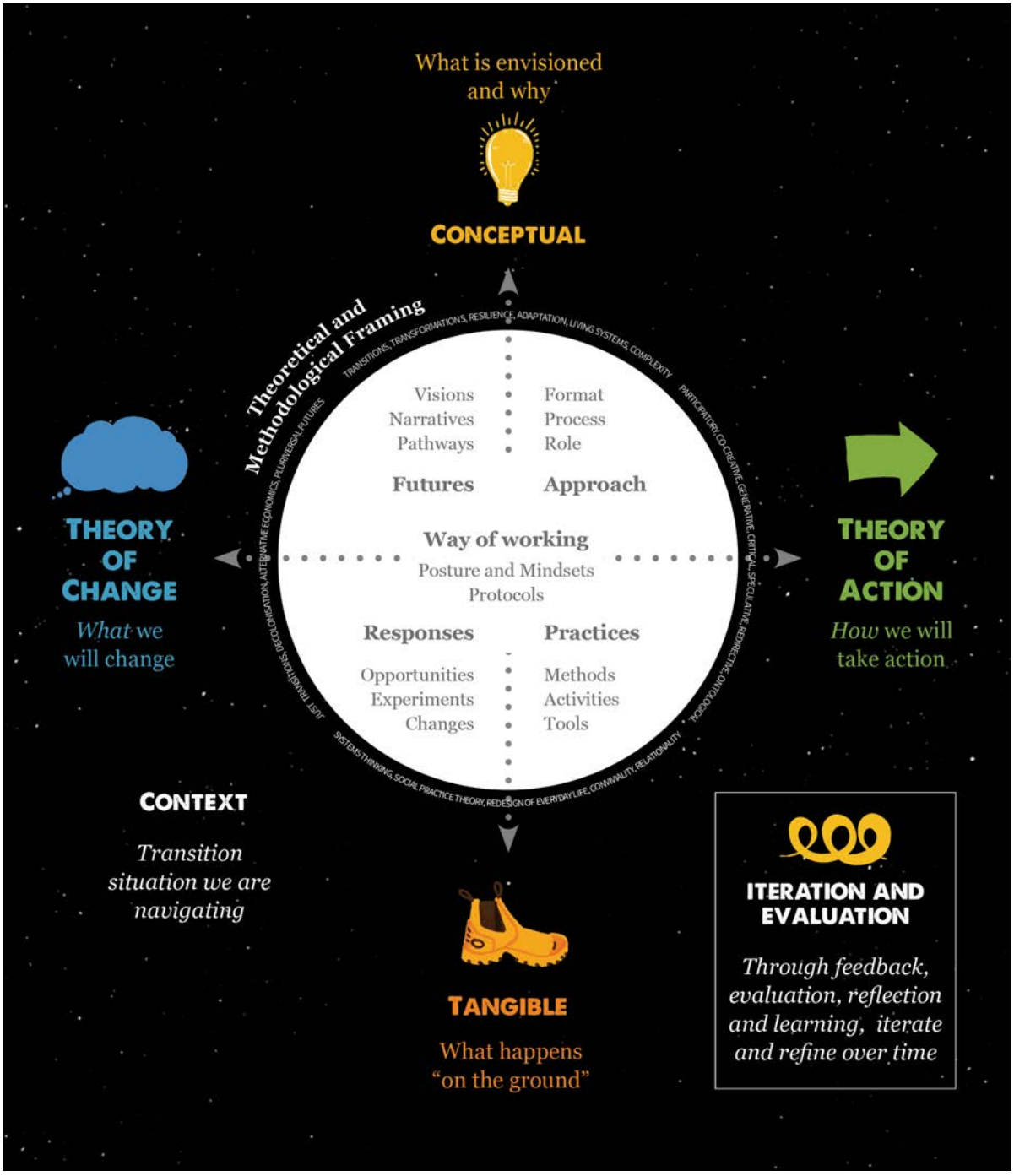


Figure 51. Elements of Practice framework—the 'compass' diagram

Anatomy of the Elements of Practice framework

As outlined in Chapter 2, the emerging Transition Design approach is comprised of the Transition Design Framework and a three-phase cycle. These three phases are incorporated into the six process activities identified in Chapter 5. However, setting out a practice requires a little self-assembly, so the elements of practice framework is intended to help in gathering and structuring the components needed to put the emerging Transition Design approach into action.

Theory of Change and Theory of Action as the two halves of practice (axes)

Throughout this thesis I have described Theory of Change and Theory of Action as two halves of practice. Accordingly, they are the dominant organizing element of this framework. Theory of Change and Theory of Action form the x-axis. A Theory of Change, as described in Chapters 2 and 4, is the sum of changes and responses (beyond our own contributions) we assume are required to bring about the ultimate outcomes we seek—in this case, to bring about transition toward sustainability. Transition Design is our Theory of Action, or how we will act upon a given situation to contribute to the Theory of Change and build momentum. Both Theory of Change and Theory of Action have conceptual and tangible dimensions, and these dimensions form the y-axis. The conceptual end of the axis refers to what we envision—and why. The tangible end of the axis refers to what gets done “on the ground”.

Sections of the framework

With the x-axis and y-axis defined, the sections of the framework can be defined. The top left quadrant holds Futures, including visions, narratives, and pathways. The top right quadrant contains the Approach, which encapsulates format, process, and role, underpinned by methodology. The bottom right quadrant holds Practice, inclusive of specific methods, activities, and tools. The bottom left quadrant calls for Responses, including Opportunity Areas, interventions, (re)invention, and experiments, connecting to form an Ecosystem of Responses. At the center is the Way of Working, which refers to posture and mindset as well as protocols. The Way of Working equally influences all quadrants. For another example of shifting mindset and postures to the center of a framework, see Culén (2023). All elements should be iterated over time within the evolving transition context and, in some cases, evaluation may be needed.

Theoretical and methodological foundations

Transition Design draws from a range of theories and methodological origins, as defined in Chapter 2, and outlined in Appendix B. For the top conceptual half, underpinning theories include transitions, transformations, resilience, adaptation, Living Systems, and Complexity Theory. At the bottom, theories for translating the conceptual into real life include Systems Thinking, social practice theory, redesign of everyday life, conviviality, and relationality—which is informed by First Nations worldviews and ways of being. For Transition Design, the Theory of Change half is grounded in ideas like just and equitable transitions, decolonization, alternative economics, and pluriversal futures. For the Theory of Action half, theoretical and methodological origins include participatory, co-creative, generative, critical, speculative, redirective, and ontological design.

Working with the Elements of Practice framework—as a compass

The Elements of Practice framework is intended to give structure to the process of assembling an approach. The process is like building your own compass to navigate uncertain times. As the practice elements are assembled, practitioners and collaborators will work out what steps to take and how. Particularly where those elements are documented, that thinking can serve as a compass to guide the process of weighing options and making choices along the way.

When starting Transition Design work, it is intended that this framework can be used together by practitioners and collaborators to help craft a shared way forward. Each component can be developed, one at a time (and over time), through questions like the following:

- What is your current best thinking about the future that is desired, the changes needed to reach that future, how you'll contribute, and specific activities you'll do?
- What ways of working will be needed for successful collaboration and changemaking?
- How will you document your thinking and learning? How often will you check back, reflect, and iterate your approach? How might this inform an evaluation framework?
- What do you learn over time about how to bring about change and impact transitions, and how does that shift (your understanding of) theory and methodology?

Chapter 8
Final discussion

About this chapter

Following the reflections in Chapter 7, this chapter establishes the contributions of the research to the growing practice base for Transition Design and argues for the significance of this work, as supported by participant feedback through a round of evaluative interviews at the end of the Case Study project. This chapter concludes with an outline of opportunities for further research.

8.1 Contributions of the research

Summary of research contributions

This research set out to explore the following questions:

- How has or could Transition Design be manifested through practice?
- How does a person wanting to engage in 'Transition Design' construct a practice and approach to a Transition Design project—particularly where they cannot directly pick up existing methods like the Transition Design framework method (as named in Chapter 2)?
- How do practitioners embody and embed theory into practice, like Living Systems theory which is representative of an entirely changed ontology as well as worldview, whilst also laying groundwork for ontological openness?

In undertaking this research and the Case Study, I sought to work through how I would answer these questions for myself so that I might offer an example for other people seeking to engage in Transition Design, design for social change, and sustainability transitions. Table 18 sets out the research contributions in the areas of Theory of Change, Theory of Action, and the overall research question (assembling a practice).

Table 18. Research contribution

AREA	RESEARCH CONTRIBUTIONS
Theory of Change—*Contribution to Regenerative Agriculture and Transitions*	• Micro-impacts in each working group (sub-project) • Ongoing collaborations that have the potential to form an Ecosystem of Responses, including linking to and amplifying other Ecosystems of Responses • Participant endorsement of the overview of Regenerative Agriculture in the Field Guide as easy to read, presents the debates as well as multiple perspectives, does not push • A novel definition of Regenerative Agriculture
Theory of Action—*Contribution to Transition Design Practice*	• Through an analysis of 24 empirical cases, named and catalogued elements of practice from the cases • Distinguishing among Theory of Change, Transition Theory, and Theory of Action • Design process as a rapid Adaptive Cycle—that builds Adaptive Capacity • Establishing regenerative principles as core to Transition Design practice and outcomes Participant validation of a designerly approach to transitions: • Value of visual sense-making and communication • Value of the integrative and facilitative skills of design • Need for a process and framework to stay oriented within 'all the layers' of transition • Transition Design as the 'meta' organizing frame for transition initiatives
Research Question—*Constructing a Practice*	• Thesis steps through the process of assembling a practice and weighing up how theory will be embodied, particularly Living Systems theory and a changed human-nature relationship, as well as how practice can help lay the groundwork for ontological openness (like Theory of Change) • Synthesized the elements of practice into a framework (diagram) to support people to assemble their own practice • Developed a Field Guide including a summary of the Case Study to provide an overview of practice together with an empirical example

Contribution to Regenerative Agriculture and transitions

The fundamental proposition of Transition Design is that there is a role for design to play in catalyzing and materializing systems change for just and regenerative futures. For the practice methodology identified over the course of this research to be considered legitimate, I first and

foremost had to deliver value to Regenerative Agriculture. I argue that this research has concretely demonstrated signals of Transition Design's value to Regenerative Agriculture and for regenerative and just transitions as well.

Participants felt there was value in depicting the complexity of Regenerative Agriculture transition, the many opportunities to support transition, and the pathways farmers could take:

> *[This work is] powerful for a number of reasons… being able to reveal in a generic sense that not all farmers are farmers. They have a different context and therefore a life lens. The opportunities and barriers...thought that in itself was hugely valuable. We tend to talk about stakeholders, actors like an amorphous blob, all the same. Actually: No, that's not the case. Very readable. (141 Farmer in Transition)*

Participants expressly appreciated the approach of building the capacity for farmers to make their own choices about transition as one farmer described:

> *If I was a farmer who's just picked this up and thinking about transitioning – that's the sort of thing I'd want to see...You're not selling a product...If [a farmer wants] to make a choice, and an informed choice, I think you've done a really good job of not telling me that regen ag is the end all and you've got to do it. (127 Regenerative farmer)*

Many participants immediately saw the applicability of this work to other transition arenas:

> *This is very topical. Energy transition going on, transitions to a more healthy life. Transition post-COVID. Not having as much money as we had. Transition of school, society. Transition of work, what is work going to look like? The technology transitions. It's very TODAY. It keeps me awake at night. And the question – what everyone is asking themselves – is: 'What can I do?' (163 Evaluator and practitioner)*

This feedback provides evidence of the legitimate contribution of a Transition Design approach to Regenerative Agriculture transitions, and the *potential* to contribute to regenerative and just transitions more broadly. For me these also *hint* that the framing of the field guide may help create the conditions for ontological openness, which is a goal I hold for practice, as discussed in

Chapters 1 and 2. As Juri et al. (2021) emphasize, an “ontological-epistemological revolution” is critical for enabling transitions which re-situate “the social spheres within nature” (p. 7).

Regenerative Agriculture can contribute to sustainability at scale

The assumption that Regenerative Agriculture can contribute to sustainability at scale is just that, an assumption. In Chapters 4 and 6, I outline the nuances of the contested definition of Regenerative Agriculture, and how the very definition of Regenerative Agriculture will influence the extent to which it ultimately contributes to sustainability. As the argument goes (which is fundamentally a Living Systems and Complexity argument), the more holistically Regenerative Agriculture is defined, the more likely it will be to contribute to sustainability. It is noted that ‘holistic’ with respect to agriculture includes issues of social wellbeing, social justice, equity, and food sovereignty as well as economic, environmental, and spiritual dimensions. As of 2024, at the conclusion of this research, the idea that Regenerative Agriculture can and will contribute to sustainability at some kind of scale remains an assertion of the loosely held Regenerative Agriculture movement, but the reality of that is yet to be seen. It calls to mind a quote from the movie ‘Walk the Line’:

> *June Carter: There's too many ‘ifs’ in that sentence. Johnny Cash: There's only one actually. [Shouting] There's only ONE ‘if’ in that sentence, June!*

Contribution to Transition Design

Contribution to the practice base

From start to finish, this thesis steps through the elements required for assembling a Transition Design practice, offers a deeper analysis of some practice elements like design process, and then condenses the thesis into a more accessible Field Guide and an Elements of Practice framework. Along the way, this thesis makes multiple contributions to the Transition Design practice base. The analysis of empirical cases in Chapter 2 fills a gap in the methodological materials available for Transition Design by producing the start of a catalogue of existing practices, formats, methods, and methodological origins, framed as practice elements, that help contextualize *how* Transition Design can be interpreted into practice in a range of ways. Building the emerging Transition Design approach (Irwin 2018 and 2019a), I went further in Chapter 5 to analyze 17 different versions of relevant processes to establish core activities for Transition Design processes. Out of this comparison I synthesized Transition Design process into six meta-activities: initiating,

situating, visioning, responding, harvesting, and (re)framing. Having undertaken my Case Study and auto-ethnographically experienced process, in Chapter 7 I reflected on the fundamental rhythm of design, describing it as a reflection-in-action oscillation between situating, envisioning, and responding activities through framing and reframing (Schön, 1983). Following that line of thinking, I then conceptualized this fundamental rhythm of design as an Adaptive Cycle (Gunderson and Holling, 2002).

The long tail of systems experimentation

As noted in Chapter 5, I framed the Case Study project as a systems-change initiative.

Through the Case Study, I enacted a systems approach in a few ways. First, I worked with participants—farmers and proponents—to contextualize transition barriers, opportunities, and conditions in "the system" informed by a mix of frameworks for instance the MLP (Geels, 2002), the STEEP framework and systems mapping. Through the Theory of Change and Opportunity Areas I established or collaborated on a series of projects that I hope to grow into an Ecosystem of Responses over time. The people I collaborated with were all involved in other Ecosystems of Responses. I worked with the goal of connecting and amplifying their work, and ultimately co-contributing to a groundswell of systems change that enables transition.

To surface the systems aspect of this work, I leaned heavily on visualization and visual communication through illustration, diagramming, systems mapping, creating presentations, building a website, using generative research tools, etc. Synthesis and experimentation were other core practices. The practice of reflecting the voices of participants together with these tools proved effective in helping to communicate findings, engage people in tricky discussions and Systems Thinking in constructive ways, and make the research memorable. The feedback I received during interviews, in validation processes, from collaborators, and from participants in workshops underscored the value of the systems and design-based approaches in communicating complexity:

> *Your diagrams, they actually contain quite a lot really...Commend you for that (114 Regenerative Farmer).*
>
> *[It's] trying to make it as clear as possible without reducing the complexity (104 Researcher).*

The business I set up, TransitionAg, is both an evolving prototype of a design response and a design provocation. Through TransitionAg, I validated and refined the services offered, and was

able to observe others develop and grow similar offerings in the market. I cannot claim that I was the first or the only one who pointed to the need for transition support, but a couple participants corroborated my hunch that TransitionAg was a timely ripple that added to the rising current around Regenerative Agriculture. As an experiment, TransitionAg served to prove the need for value propositions like the one I offered but was also means for me to engage in transition collaborations, providing a vehicle to engage as a change agent in paid work with others. TransitionAg as a brand and a legal entity allow me to continue to engage over time.

There are other systems experiments I am interested in, which include figuring out how to resource and structure ongoing experiments and facilitating societal dialogue and experimentation around transition. For instance, looking across the Opportunity Areas named in this research for supporting transition to Regenerative Agriculture, I will seek opportunities to "shop around" for interest in collaborations to catalyze change. In looking for broader collaborations that have the potential to catalyze a regenerative agriculture, I will likely have to move away from the explicit focus on the Regenerative Agriculture movement—because that may have a broader impact on transitions.

To connect into other ecosystems of responses requires linking, supporting, and influencing networks of networks, movements, etc. I would also like to test the potential for resourcing for key responses — to be identified by participants — for any promising but tricky opportunities to support transition that seem to be unable to be actioned individually by the market, public sector, and philanthropy etc. Approaches could include setting up an independent Social Lab / Transition Lab, getting funding for TransitionAg as a systems-change catalyst, linking into the work of organizations like ClimateKIC (https://www.climate-kic.org), and attaching Action Research to the work of a university, think tank, institute, etc. I would like to further develop the role of prototypes and experiments in Transition Design, noting the discussion about the (limited) role of prototyping in Chapter 5.

Understanding the dynamics of transitions

In Chapter 4, I discuss the MLP, multi-actor dynamics, the X-curve, Three Horizons, the Bridges Transition Model, and Panarchy Theory. Then, reading these together with principles of Living Systems / Complexity Theory, I draw out the implications for a Theory of Change. In Chapter 7, I combine these frameworks into a visual summary of current transition theory and seven dynamics of transition experiences. Participants in the final round of interviews appreciated the 'mash up' of Transition Theories, in particular the William Bridges Transition Model. A few of the participants

had encountered and used the Bridges Transition Model in other organizational and change contexts and welcomed its use in the transition context. The synthesis presented in this research is a draft. There are more theories and theoretical frameworks in the literature as well as wisdom traditions that can help illuminate our knowledge of sustainability transitions—and I believe there is opportunity for further research into the patterns across Transition Theory beyond what currently exists.

Participant perspectives on value

As described in Chapter 3, the value of this research is mediated by rigor in process, rigor in reporting, and transferability of value.

Rigor is determined by qualities like internal validity, external validity, reliability, objectivity, transferability within realistic and practicable limits, trustworthiness of the study, the quality of the understanding gained, the credibility, transferability, dependability, and confirmability of the research. I have met these criteria as a baseline, a starting point.

Transferability of value is determined by usefulness of insights and contribution to (potential for) transition and effective Transition Design practice. The value of this research may also be determined by design qualities like congruence, elegance, and generativity. No matter what the measure, there is a caveat: value is ultimately defined by participants and stakeholders.

This research began with a goal to deliver a Transition Design Case Study, documented in-depth, that would have intrinsic, empirical value for people seeking to engage in Transition Design. There is novelty in offering something like the Field Guide as an output of this research. Furthermore, the Field Guide has value as a standalone resource for practitioners. The articulation of Transition Theory, the Elements of Practice Framework, and the analysis of process in this research is also novel, and altogether make a substantial contribution to the practice and praxis of the growing field of Transition Design.

Of the 20 participants in the final round of evaluative interviews, 12 were involved in Regenerative Agriculture changemaking, and 6 were practitioners and or academics in social / design / transition practice. The response to the Field Guide was predominantly positive:

> *There is a level at which people in the field will go 'thank god' somebody has thought about all this stuff...It shows what Transition Design is through graphics as well as the solutions... (160 Social practitioner)*

Participant feedback touched upon the complexity of the topics, a need to remove ‘thesis appropriate’ material, and a need to resolve some of the difficult conversations differently—like the conversation about social justice. The feedback enabled me to reorganize the material and present it more cleanly, and I believe more effectively.

Interview participants saw definite value in the contribution of the research to Regenerative Agriculture but saw an even greater value in the potential of Transition Design to support the work of collaboration to create change in the face of complex social, economic, technological, and environmental challenges. The framing of ‘Transition Design’ as a discipline and the concept of ‘designing regenerative transitions’ was “the big ‘aha’” for multiple participants in how it brings together particularly the social and systems dimensions of transitions challenges, the adaptive capacity of design, and a grounding in regenerative principles.

Limits to practice

No practice will be equally successful in every context.

There is a question in this research about whether the practice defined here will transfer to other transition arenas. With one participant, I discussed their perspective that the process and theory might transfer over to their context, which is energy transitions, but that something like the personas, which are a tool from service design, might not be relevant for their context and that they would need to use different tools. Socially based design approaches demand a level of flexibility in process and methods to ensure the tools and approach are fit for context and culture, as discussed in Juri et al. (2021). This is also an area for further research: What methods and tools work for different case studies and transition arenas, what helps facilitate ontological openness in different contexts?

Whether or not people *believe* that Transition Design can be applied to their context is another ‘limit to practice’. Whereas some participants saw that the work was "*so* adaptable to many wicked problems" (104 Researcher), other participants wondered about the transferability. In one conversation, the participant wondered how the practices used in agriculture would apply in corporate or institutional contexts. In response, I shared how many of the practices had originated in corporate, government, and institutional contexts, which led to this comment:

> *There is an irony here… [If you had told me about your work in the corporate sector first, I would have said] …f*ck that’s never going to work in ag. (164 Academic and Institutional stakeholder)*

In my professional practice I have nearly always had to convince people to try some element of design, and I expect the same of Transition Design. There is opportunity to provide further materials that support Transition Designers to introduce and explain process and practice, to flex practice, and to bring in different types of methods as needed.

Another limit to practice is bias.

In Chapter 3 and again in Chapter 6, I acknowledged my bias and discussed the potential limits to practice based on my belief in climate change science and the unsustainability of our current lifestyles as well as agricultural methods. Despite my efforts to moderate my bias to reach as many people as possible, that bias still came through and I had to make choices about what I would do. One of the participants described the dilemma:

> *You may be advocating things [farmers] are completely in agreeance with, but they will step back because it feels like a cultural mismatch. The immediate solution is to take out the titles (words like sustainability), but you can't eliminate 'regenerative'...*
>
> *If I have to wind myself back, to be someone different to achieve the outcomes—it doesn't mean I have to be someone else—I just have to play a different role. I can see you in this – but is who you are the message that is needed? (159 Regenerative farmer and supplier)*

In the end, I did remove the term 'sustainability' from the Field Guide. I agreed with a couple participants, for instance, that I would need to swap out other visual styles for my own personal style in different types of communications. I also agreed with the perspective of a few participants that I should be clearer that I was targeting proponents of Regenerative Agriculture, particularly those interested in helping to bring about change, rather than farmers more broadly. I am committed, however, to continuing to find ways to work with difference and to enable plurality. It will be an ongoing journey to achieve that through practice.

Through this research, I also came to (re)locate my bias through experiencing and discussing truly holistic and regenerative approaches, and through working more closely with Aboriginal and Torres Strait Islander peoples in other contexts:

I feel depleted by much within my own culture. I want wholeness, relationality, and conviviality, I want healing. I acknowledge my own ancestry as colonizer and migrant, both political and economic refugee, at some point Indigenous to place. I believe that people within dominant regimes often (not

always) want to do right by others and the earth, and I believe in working with them. I am committed to working across difference. Just as equally, I am committed to the idea that we need a pluriverse of pathways to regenerative and just futures.

As I get to know the Agroecology and Just Transitions movements, I feel more aligned to their principles—but I am steadfastly (obstinately?) holding hope for a truly Regenerative Agriculture. I honor and am grateful for what First Peoples share with us, including a worldview of 'decision-making by relationality' and relationality as my being. In total, I hold the hope that these will help us achieve not only a Regenerative Agriculture, but also a regenerative economy and, ultimately, healing, regeneration, and renewal of ourselves as nature.

I am agnostic about the source of any agricultural or land management practice, but rather judge it by whether it uses regenerative means for regenerative ends. I acknowledge that many land management practices have appropriated First Nations peoples' and peasant farming practices. I believe that a truly Regenerative Agriculture will lean even harder on their wisdom and the Source of wisdom innate within us all, and that we will need to find a way forward together, respectfully honoring that knowledge and not stealing it or using it for further colonization and dispossession.

8.2 Implications for practice

Further opportunity for mutual exchange between practice and context

Whether it was hubris or naiveté or both, in wading into Regenerative Agriculture, I fully did not expect to pick up practices or tools from farmers. However, there is much to learn. For instance, the holistic decision framework holds the potential to be adapted into other contexts for supporting the formation of collaborations, and helping to provide a North Star as groups work to develop and iterate their Theory of Change, Theory of Action, and any responses. There is further opportunity for Transition Design to explore collaborations with strategic extension activities, looking for mutual benefits and approaches that are deeply fit for context. As discussed in Chapter 7, the regenerative principles identified in the Case Study provide another means to help enact the intent of Living Systems theory through practice. Having experienced these areas of exchange with agriculture, I believe I've only glimpsed the potential of fruitful—and hopefully mutual—exchange of learning across these contexts, for deeply transdisciplinary insights and benefits.

Toward a pluriverse of visions and responses

The discussion of the definition of Regenerative Agriculture revealed that our transition efforts are only as effective as they are inclusive and truly holistic. Transition is a transformation project, and it will require everyone. Transition means engaging with plurality and diversity much broader than our normal comfort zones if we are to work in the brackish waters at the intersection of niches, regimes, and everything else as agents of complexity/sustainability, in the way that Yunkaporta (2019) challenged us to do. Transition involves decolonizing not only domains like agriculture but also our practices for shifting systems, like Transition Design. Transition calls for working with difference, finding novel ways through compromise and collaboration among dissimilar parties who are not necessarily in agreeance and who come from very different philosophical positions and mental models. This is the slow, tedious work of forging alliances through diversity, plurality, and difference to mediate areas of conflict whilst establishing shared visions and goals and locating productive, generative intersections of knowledge and purpose. That said, the goal is not to merge all directions into one. We will need more than one vision of a viable future and more than one set of responses for transition—we will need a pluriverse (Escobar, 2018) of contextual, place-based, culturally relevant visions, responses, and viable futures.

Normalize getting ‘lost in transition’

Looking back to Transition Theory, as we collectively wade into the unknowns and uncertainties of transition, individual and group experiences will vary widely but we can expect it to be a time of turbulence—and a time of creative experimentation and reinvention. As Scharmer offers in Theory U and as First Nations thinkers like Yunkaporta and Goodchild describe, transition can also be a time of grounding, recentering, and being guided by Source/Spirit (Scharmer, 2009; Yunkaporta, 2019 and 2021a; Cultural Survival et al., 2020). What might it mean for Transition Designers to be prepared to encounter but also to meet others in the emotional wilderness and psychological no man’s land of transition? What might it mean to walk side-by-side, bridging cultures? Because transition requires everyone, for many there is no way forward without healing (Smith; 2012; Land, 2015; Yunkaporta, 2019 and 2021a; Fassler, 2021). What might it mean to facilitate truth telling, reparation and healing for justice, fairness, and equity? What might it mean to navigate complexity and uncertainty together? What might it mean to create space for regeneration and transition, to remake and innovate our many societal structures, technologies, conventions, and narratives? We have our theory of what the experience of transition will feel like and what it will

mean to move from horizon to horizon, but the only way of really knowing is to engage with transition. And to engage with transition means engaging with the complexity, the uncertainty, the wilderness, the no-man's land—the dark cloud which we cannot see through and which in fact contains all that is transforming simultaneously with us (Bridges, 2004, 2009).

To engage with transition is to be willing to get lost in transition, because the only way is through and that can only be navigated from within uncertainty and complexity. With a bit of good cheer and stubborn optimism, knowing that transition is a turbulent journey and one that we are already involved in, I wish everyone reading this research a bit of wisdom from William Bridges: Go ahead, get lost in transition. That is, individually and collectively: Loosen our grip on the status quo, step away from much of what we know, engage honestly and in earnest with this dilemma of transition, including the way we will resist even our most deliberate choices along the way. We will get disoriented, get properly lost, question everything, do our own soul searching, experiment with everything from all our societal structures to our narratives and even to our own identities in the search for a viable way forward, and then try and try again when our experiments don't take us far enough from the status quo—because that's how transition will come about.

Transition Design builds (re)generative and adaptive capacities

Transition Design offers a methodology for transformative reinvention, for regeneration.

Transition Design has always been conceptualized as a generative practice (Irwin, Kossoff, and Tonkinwise, 2015a), with design being a practice that creates change *through* the process and not just as an outcome of the process. I named five ways the concept of 'generative' is relevant to this research: 1) the essence of design; 2) a fundamental ethos embedded in the methodology of this research; 3) a signal of the potential of visions and designed solutions; 4) the means-and-ends link between generative approaches and regenerative agricultural results, and 5) therefore the means-and-ends link between (re)generative approaches in design and sustainability transitions more broadly (Chapter 2).

Design, by definition, is meant to generate fresh ideas and change, and the ethos that underpins design disciplines like Transition Design is that the approach should foster people's agency to develop their own solutions in their own contexts, and to build their own capacity for change. In Chapter 5, I defined how promising visions and responses can be gauged by their generative, desirable, energy-giving qualities. Chapter 6 describes how I used generative tools, like the co-created map of the agricultural production system, to engage interviewees and workshop

participants in discussions about transition, to identify the barriers to Regenerative Agriculture that affect them the most, and to build capacity for understanding systems change.

Following the Case Study project, I reflected on how farmers defined working with the life-giving, renewing properties of nature as the factor that makes Regenerative Agriculture successful and how Just Transitions highlight the means-and-ends congruency that requires the means of transitions to be just for just outcomes to occur (Chapter 7). This congruency exists for Transition Design as well. For the results of Transition Design to have generative and regenerative qualities, so that our actions and responses contribute to sustainability, the approach to Transition Design must be generative and regenerative as well. This not just an ethos; the (re)generative quality of approach is directly linked to qualities of the outcomes.

Transition Design can build Adaptive Capacity at the same time as developing transition responses for each stage of the Adaptive Cycle. Understanding what's needed at different stages of an Adaptive Cycle and approaching design as an Adaptive Cycle will help Transition Design step into the role of facilitating societal-scale inquiry, dialogue, visioning, experimentation, and reflection, whilst building the capacity for transformative reinvention—and regeneration—through the process itself. The process is the purpose. As one participant observed, "Regeneration is fundamentally developmental" (160 Social practitioner).

The role for Transition Design

Ultimately Transition Design is an opportunity for designers to contribute to catalyzing systems change for regenerative and just futures. As Transition Design matures, its role among other disciplines will become more distinct and pronounced. Schön urged professionals to look for ways to facilitate societal inquiry, reflection, experimentation, and dialogue, and this is the role I have attempted to demonstrate through the Field Guide. Participants have corroborated this value:

> *Takeaways...I feel like I've taken a lot. Even recognizing that Transition Design – as a meta...how Transition Design holds the meta and the micro—for perhaps a team, people moving through transition, organizations, so those layers are clear. The graphic design as well as the solution design – holding that complexity. So, I do feel that this discipline would support so many other practitioners in doing the work. (160 Social practitioner)*

By using design-based approaches to frame and reframe whilst engaging in cycles of situating, envisioning futures, and experimenting with responses, designers can help structure process, integrate diverse perspectives within the context and dynamics of complexity, and give form to the ideas that quite literally make the future that wants to emerge (Scharmer, 2009). Those visions and experiments can then be leveraged in a meta way to help facilitate broader societal awareness, discussion, and contemplation of what's possible not only in the future, but in the near term as well, making pathways to transition clearer.

Participants emphasized the hopefulness they found in reading the Field Guide:

> *It's one of the most though provoking reads I've had for ages – so thank you… At the moment what's being privileged is technological views of transition …and everybody's getting excited about the metaverse and …machine learning…To me, transition and what you've created here, even though you've included Emily [Dickenson's] hope is the thing with feathers, which is one of my favorite [poems] ever… To me this is much more, much more, much more hopeful that we can actually do something in that urgent innovation space that doesn't deny that institutions change at a logarithmic pace but actually says, ok, if they change at a logarithmic rate, what's the generative conversation and design approach that we can have to create the sorts of institutions we need now? (161 Practitioner and Educator).*

8.3 Further opportunities for research

Research into Transition Design and transitions

At the time of this writing, Transition Design has existed for nearly a decade and different related forms of design for sustainability, Systems Thinking, transformation design, Action Research, Complexity Science, and transition management (etc.) have been around longer. It is an exciting time and an urgent time for Transition Design to come into its own, to grow and mature as a discipline. In the context of a growing focus on sustainability transitions globally, Transition Design is a developing practice with untold opportunities for practice and research. It is the examples of practice that will ultimately establish its role alongside other disciplines. Just as design capability for Third and Fourth Order design has been building over the past decades, over

time as capability is directed in service of sustainability transitions there will be more and more designers and transdisciplinary collaborators capable of engaging in Transition Design. With that perspective of a growing, maturing discipline that will be presented with many opportunities to engage in the global dilemma of sustainability transitions, there are many opportunities for further research, like those that this research points to. Table 19 'Further research into Transition Design' lists several such opportunities.

Table 19. Further research into Transition Design

TRANSITION DESIGN TOPIC	POTENTIAL RESEARCH
Transition Theory and seven dynamics of transition experience	Further synthesis of empirical descriptions of Regenerative Agriculture transitions, existing research, and collective wisdom about the experience of sustainability transitions across transdisciplinary boundaries
Transition Design Elements of Practice framework	Does the practice framework proposed in this research help designers and collaborators to assemble a practice? Is it useful across a range of contexts? Is it useful outside of Transition Design? How is it adapted for different contexts?
Theory of Change and Theory of Action	Are there other examples of the use of Theory of Change and Theory of Action in design approaches? What benefits do designers find by adopting these frameworks, differentiating between the two, and using them to facilitate collaborative approaches—over long(er) horizons of time?
Visions for transition and visions for a viable future	With the Rebraiding Rivers visual as an example of a high-level theory of change / vision of transition*ing*, what other transition visions and visions for a viable future may be developed? How might we enlist our collective and individual creativity in service of a viable future? What does it look like? What metaphors might we use? What narratives might we develop? How might we communicate and engage others with these visions? How might engaging with fresh visions create change?
Process/approach	Does the articulation of process/approach as six meta-activities (Initiate, Situate, Envision, Respond, Harvest, and Reframe) work across a range of contexts? To what extent do the six meta-activities encapsulate the activities of Transition Design? How is process adapted and communicated for different contexts?
Postures, mindsets, and protocols	Further research into how postures and mindsets differentiate from other approaches and play out in Transition Design approaches. Further translation of postures and mindsets into protocols. Testing of protocols for collaboration offered in this research. Exploration of how the principles of regeneration may influence Transition Design approaches. Further empirical investigation into how to reflect postures and mindsets in the design of approaches, methods, practices, and tools.

Decision-making in Transition Design contexts	Research into how decision-making is undertaken in Transition Design initiatives, as well as in different transition contexts. For instance, how is decision-making supported in centralized versus decentralized contexts, and amid much innovation, reinvention, turbulence, and uncertainty.
Case Studies	Continued production of Transition Design real life case studies from a range of contexts. Comparison of diverse case studies including scope, methods, and impact. Examples of transition arenas for Transition Design case studies include climate resilience and disaster response initiatives; water transitions (following on from the work of Irwin and Kossoff (2017a and 2017b); energy transitions; regional-industry-workforce transitions; urban transitions; land management (broader than agriculture) transitions; oceans and fisheries, following on from the work of Dahle (2019); linking transition research, transition management, and Transition Design; new economies; policy making processes; transitions and global markets; local decision-making; projects that link scales; transition initiatives within dominant regimes; and more…
Methods, practices, and skills	Building from the review of empirical cases, further compilation and comparison of methods, practices, and tools across case studies. Examples of practices that draw from design and transdisciplinary disciplines. Examples of how practices are adapted for different contexts and to lay the groundwork for ontological openness.
Methods guide	Compilation of process, methods, practices, and case studies from diverse contexts into a method guide.
Role of Transition Design	Comparison of case studies plus interviews with diverse stakeholders to understand the opportunities and challenges for Transition Design in working alongside other disciplines.
Contribution to change	As Transition Design matures—opportunity to research how Transition Design and design-based approaches contribute to and potentially help accelerate/enrich collaboration, exploration of options, belief in and alignment to possible viable futures, willingness to change, and occurrence of transition.

Research into Regenerative Agriculture

It will be very telling to see what happens with the growing Regenerative Agriculture movement. The extent to which it is enabled or constrained by policy and market settings, consumer-capitalist demand cycles, carbon markets, and political cycles will play out over time. The extent to which it succumbs to greenwashing or is defined truly holistically will constrain or amplify its

ability to impact planetary boundaries and sustainability transitions. There is a broader movement to regenerate ecosystems and landscapes as one dimension of protecting planetary boundaries and caring for the environment, and this broader movement may or may not be tied to the fate of Regenerative Agriculture. There is demand for research into Regenerative Agriculture, for science that can assess and report on the outcomes of ecological and holistic approaches, and for examples of diverse approaches around the world. From my Case Study project, as an example of a Case Study of transition, there are further research opportunities as well, as described in Table 20.

Table 20. Further research into Regenerative Agriculture transition based on this research

REGENERATIVE AGRICULTURE TOPIC	POTENTIAL RESEARCH
Focus on transition itself	Over the course of this research, I have observed more and more supports available to farmers focused on transition itself, and more dialogue on the concept of transition. The extent of overlap between concepts of transition and ideas of adoption should be investigated, and there is potential for further research into the power of focusing on transition itself.
Definition of Regenerative Agriculture	It is assumed that there will be ongoing research into the definition of Regenerative Agriculture and the discourse around the definition and the movement. This research offers a novel definition of Regenerative Agriculture, and there is potential to test this definition further.
Strategies and pathways to support farmer/farm transition	Building on the transition strategies named in this research, there is potential to continue researching strategies but also to begin to differentiate strategies into different pathways for different personas, or along a range of factors like farm type, business models, industry, ecosystem, biome, and soil profile, etc.
Individual Opportunity Areas	There is potential for further research into transition enablers in each of the Opportunity Areas named in this research e.g., governance, policy, and incentives; supply, processing, and distribution capacity; finance, investment, and insurance; consumer awareness and demand; science, research, and measurement; collaborative ecosystem resilience initiatives; local-global markets; agroecological capability and farm transitions; and social justice, wellbeing, and food sovereignty. There is potential to identify additional Opportunity Areas, reframe the ones named in this research, or explore them in the context of a regenerative agriculture i.e., beyond the Regenerative Agriculture movement.
Engaging with plurality and difference	Research into plurality, diversity, equity, and social justice in Regenerative Agriculture. Research into solidarity with other movements, like Agroecology, Permaculture, and Just Transitions. Research into niche (like Regenerative Agriculture) interactions with the dominant paradigm.

	Research into potential for innovation at the edges—what conventional, regenerative, and other niches can exchange for mutual benefit.
Transition personas	Testing and further iteration of the personas named in this research—and testing with a much more diverse group of people (and farm types) interested in regenerative and agroecological approaches. Research into personas of those NOT interested in regenerative approaches—deeper understanding of their perspectives and contexts. Research into customization for specific audiences. Specific to the work of Gordon, Davila and Riedy (2021 and 2023) that teases apart the diverse discourses related to Regenerative Agriculture: There is opportunity to draw both systems maps and visions of a viable agriculture from the perspective of the nine different discourses identified in this work. Also, an opportunity to compare the personas named in this research with the discourses named in their work, and to develop themes that summarize the compiled perspectives.
TransitionAg—next steps	There is opportunity for ongoing iteration of TransitionAg, experimentation with the offerings, and use of the platform as a vehicle to introduce provocations and engage in changemaking.
A vision for a viable agriculture	Following on from the design provocation in the Field Guide, there is opportunity for readers, researchers, designers, collaborations, and communities etc. to develop their own visions of a Regenerative Agriculture, an entirely re-invented agriculture that is climate/environment-positive and viable long term. As multiple visions are developed, comparison of differing visions would be an area for potential research.
Theory of Change	The Field Guide sets out a Theory of Change which represents the known assumptions and hypotheses about what will create the conditions for transition and increase the uptake of Regenerative Agriculture. There is opportunity to further test and iterate this Theory of Change with stakeholders, and to use it as a means of building the conditions for change. Longitudinal research could be conducted, tracking the original Theory of Change as it is iterated and the context changes over time.
Compost and drought	Following on from the Compost as a Catalyst work, further research into the role compost can play in 'drought-proofing' agriculture.
Ongoing role of Transition Design in agriculture	Explore how Transition Design might work alongside other disciplines to support sustainability transitions in agriculture. Explore the potential to bring together Transition Design and strategic extension activities.

8.4 Conclusion

Through this research and the empirical example of the Case Study, I have demonstrated the validity and legitimacy of Transition Design as a co-creative design practice for catalyzing and materializing change in complex adaptive systems for a more viable, regenerative, and just future. I have woven Living Systems and Complexity thinking, Transitions Theory, design-based skills for sense-making, mapping systems, form-giving, and experimentation, and principles of regeneration from agriculture into my practice. I have worked to embody Transition Design as a highly social, interconnected, strategic, and adaptive approach to "muddling through" (Schön, 1983, p. 43)— but also as an approach that helps lay the groundwork for ontological openness by shedding light on the many perspectives that exist in transitions and the pluriverse of sustainable futures that is possible.

Regenerative principles—Living Systems / Complexity Theory in practice

Through this research, I have explored how Living Systems / Complexity Theory can be translated into Transition Design practice through Transition Theory, a Theory of Change, and my Case Study approach. Living Systems and/or Complexity Theory is reflected in the following practice elements from this research: Transition Theory, seven dynamics of transition experience, design process as an Adaptive Cycle, regenerative principles, holistic decision making, and in the 'Rebraiding Rivers' vision for transition*ing*.

The conclusion in this research that the principles that lead to regenerative outcomes in Regenerative Agriculture can be used to help create regenerative outcomes via Transition Design is profound, to me. In particular, the principle of congruency emphasizes that means produce ends and, by inference, establishes that Transition Design must take a regenerative approach if regenerative transitions are to occur. These principles originate from Living Systems and Complexity theory and illuminate how these theories are operating as a shared foundation of Regenerative Agriculture and Transition Design, as if both agriculture and design are on parallel journeys. It is also my hope that these principles for regeneration in practice are accessible enough to be useful to anyone seeking to navigate complexity and to work with nature, as nature.

The following testing questions can help to draw out what's needed to protect and facilitate regeneration in pluriversal ways:

- **What feels life giving to you?**
- How can we create conditions conducive to life?
- What will facilitate our resilience and Adaptive Capacity?

- What can we do now that is generative, renewing, and just?
- What does it mean to work in ways that are congruent with the outcomes we seek?

A growing need and opportunity for Transition Design

For me, it was a surprise that this work would establish the value and role for Transition Design in such a significant way among participants. I am energized and quietly hopeful as a result. Not only do I want to be able to work on catalyzing and materializing systems change for regenerative and just transitions as a designer, but I would like to enable others to do so as well. This research is possible because of the work and courage of scores of other people, including the Transition Design founders. It is my earnest wish that this work pays it forward by contributing to developing the capacity and skills of more and more designers and collaborative teams to address questions of regenerative and just futures. I hope that designers equipped to design regenerative transitions help fulfill Swann's (2002) challenge, "leading to greater respect for designers and their role in society", and aiding changemaking efforts (p. 57).

Although I do not wish transition upon us, transition is here. Societies, communities, organizations, families, and individuals have choices and opportunities to grapple with. Where there are transition challenges, I hope there will also be designers and creatives working to support others to make sense of complexity, navigate systems, integrate diverse views, engage with difference, foster plurality, envision irresistible futures, facilitate experimentation, and develop changemaking propositions that help catalyze just and regenerative futures. Above all, I hope that we can do this for ourselves, our children, and those closest to us.

> *One can imagine a future in which our main interest in both science and design will lie in what they teach us about the world and not what they allow us to do in the world. Design like science is a tool for understanding as well as acting.*
>
> *… evolution brings about a proliferation of niches…Our essential task — a big enough one to be sure — is simply to keep open the options for the future or perhaps even to broaden them a bit by creating new variety and new niches.*
>
> *Our grandchildren cannot ask more of us than that we offer to them the same chance for adventure, for the pursuit of new and interesting designs, that we have had (Simon, 1996, p. 111-167).*

Appendix A: Empirical case studies

Examples are listed alphabetically by year

Gaziulusoy, A. İ., & Ryan, C. (2017). Roles of design in sustainability transitions projects: A Case Study of Visions and Pathways 2040 project from Australia. *Journal of Cleaner Production*, 20, (Supplement C), 1297–1307.

Irwin, T., & Kossoff, G. (2017a). *Mapping Ojai's water shortage: A workshop.* Retrieved from Academia.edu: https://www. academia. edu/30968737/Mapping_Ojais_Wa ter_Shortage_The_First_Workshop_January_2017.

Irwin, T., & Kossoff, G. (2017b). *Mapping Ojai's Water Shortage: The Second Workshop, May 2017*. Retrieved from Academia.edu: https://www.academia.edu/32353660/Mapping_Ojais_Water_Shortage_The_Second_Workshop_May_2017

Ekmekçioğlu, D., & Şen, M. Ö. (2018). A proposal for a method of the redesign of self-organising systems: The case of minibus transportation in the Istanbul public transport system. *Strategic Design Research Journal*, 11(3), 230-240. https://doi.org/10.4013/sdrj.2018.113.07

Mok, L., & Gaziulusoy, İ. (2018). Designing for sustainability transitions of aquaculture in Finland. *Journal of cleaner production*, 194, 127-137. https://doi.org/10.1016/j.jclepro.2018.05.013

Costa Gomez, T. (2019). Analysis of Ongoing Transition Projects in Barcelona. An Approach to Transition Design from a Southern Perspective. Cuadernos del Centro de Estudios de Diseño y Comunicación (73). https://doi.org/10.18682/cdc.vi73.1044

Dahle, C.J. (2019). Designing for Transitions: Addressing the Problem of Global Overfishing. *Cuadernos del Centro de Estudios de Diseño y Comunicación* 73, pp 213-233. ISSN 1668-0227.

Hyysalo, S., Marttila, T., Perikangas, S., & Auvinen, K. (2019a). Codesign for transitions governance: A mid-range pathway creation toolset for accelerating sociotechnical change. *Design studies*, 63, 181-203. https://doi.org/10.1016/j.destud.2019.05.002

Hyysalo, S., Perikangas, S., Marttila, T., & Auvinen, K. (2019b). Intermediate Codesigning in Transitions Governance: Catalysing and Channelling Participant Action. *The Design journal*, 22(6), 873-894. https://doi.org/10.1080/14606925.2019.1661557

Süngü, A. T. (2019). *Designing transitions towards integration: Entrepreneurial capacity development for Syrians in Turkey.* (Master's thesis, Middle East Technical University).

Wallace, N. (2019). Personal, Political, Professional: A Practice in Transition. *Journal of Management Policy and Practice*, 20(5), 66-79.

Clausen, C., & Gunn, W. (2020). Staging participatory innovation as transition design. In *Staging Collaborative Design and Innovation* (pp. 106-122). Edward Elgar Publishing. https://doi.org/10.4337/9781839103438.00017

Iwabuchi, M. (2020). Speculation of the Purpose of Life in 2050 from Kyoto: Case Study on Transition Design in Japan. *Pivot 2020: Designing a World of Many Centers*.

Karahasanovic, A., Culén, A. L., Skjetne, J., & Hasle, G. (2020). Designing for Transitions in Rural Transport. MCCSIS 2020, Proceedings of the International Conferences: ICT, Society and Human Beings 2020; Connected Smart Cities 2020; Web Based Communities and Social Media 2020. 2020, 57-64

Samuels-Ballantyne, E. (2020). *Con viv! Convivial food systems design in everyday* life (Doctoral dissertation, Swinburne University).

Juri, S., Zurbriggen, C., Bosch Gómez, S., & Ortega Pallanez, M. (2021). Transition Design in Latin America: Enabling Collective Learning and Change. *Frontiers in sociology*, 6, 725053-725053. https://doi.org/10.3389/fsoc.2021.725053

McCrory, G., Holmén, J., Holmberg, J., & Adawi, T. (2021). Learning to Frame Complex Sustainability Challenges in Place: Explorations into a Transdisciplinary "Challenge Lab" Curriculum. *Frontiers in sustainability* (Lausanne), 2. https://doi.org/10.3389/frsus.2021.714193

Cowart, A., & Maione, D. (2022). Transitioning Toward the Slow and Long: Developing Experiential Futures Approach Toward System Change in Fashion. *Cuadernos del Centro de Estudios de Diseño y Comunicación* (157). https://doi.org/10.18682/cdc.vi157.6844

Juri, S., Baraibar, M., Clark, L. B., Cheguhem, M., Jobbagy, E., Marcone, J., Mazzeo, N., Meerhoff, M., Trimble, M., Zurbriggen, C., & Deutsch, L. (2022). Food systems transformations in South America: Insights from a

transdisciplinary process rooted in Uruguay. *Frontiers in sustainable food systems*, 6. https://doi.org/10.3389/fsufs.2022.887034

Onafuwa, D., & Patel, K. (2022). Ancestors' Dreams: Transitioning to a More Equitable PostCOVID-19 Economy. *Cuadernos del Centro de Estudios de Diseño y Comunicación* (157). https://doi.org/10.18682/cdc.vi157.6852

von Flittner, Z. F., Gaziulusoy, I., Nielsen, S., & Marttila, S. (2022). Design for Sustainability Transitions: Reflections on Practice. *Cuadernos del Centro de Estudios de Diseño y Comunicación* (157). https://doi.org/10.18682/cdc.vi157.6850

Chen, L. (2023). Sustainable Transformation of Age-Friendly Community Centres Based on Transition Design. *Connectivity and creativity in times of conflict*.

Culén, A.L. (2023) The role of participatory transition design in mitigating erosion of participatory democracy, in De Sainz Molestina, D., Galluzzo, L., Rizzo, F., Spallazzo, D. (eds.), *IASDR 2023: Life-Changing Design*, 9-13 October, Milan, Italy. https://doi.org/10.21606/iasdr.2023.449

Culén, A. L., Junge, I. P., Stevens, N. S., & Gaver, W. W. (2023). Plurishop—A Workshop-based Method for Transitions Design. *Proceedings of Relating Systems Thinking and Design*, RSD12, 31.

Duan, X. (2023). Sustainable Product Strategy System Frame from the Perspective of Transition Design. *Advances in Economics, Management and Political Sciences*, 41, 199-207. https://doi.org/10.54254/2754-1169/41/20232067

Lähteenoja, S., Marttila, T., Gaziulusoy, İ., & Hyysalo, S. (2023). Transition co-design dynamics in high level policy processes. *Design studies*, 88, 101207. https://doi.org/10.1016/j.destud.2023.101207

Kashyap, K., Svejkar, D., & Tonkinwise, C. (2024). Relational Repair: Co-designing an Approach to Place-Based Circularity with an Ethic of Care. In *Design/Repair: Place, Practice & Community* (pp. 149-180). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-46862-9_7

Appendix B: Survey of methodological origins

The table below catalogues the methodological origins of the *practices* mentioned in the empirical examples. For each category of methodological origins listed, there is a brief description, with references, of some of the ideas, prominent authors, and discussions relevant to the category. This serves as an introduction to key terms and is not an exploration of theory, methodology, or the range of theoretic backgrounds named by Transition Design founders.

The table is organized based on my own clustering of categories of practice elements, within which there is overlap, and my current interpretation (which is likely to evolve) of texts based on a practice lens. As such, this list is neither definitive nor comprehensive, but rather seeks to provide context for some of the methodological origins associated with the range of practices that people have used in undertaking Transition Design.

Category	Methodological origins	Brief description, associated practices
Participation	Participatory	The involvement of people affected by research, design, and decision-making processes has been growing over many decades based on the ethical stance that people who are affected by design decisions should be involved in the process of making those decisions (Sanoff, 1990). Participatory action research calls for “research with and for people, rather than on people”, in which “responsibility for practical action and research is shared with participants” (Löfman, Pelkonen and Pietilä, 2004, p. 333); from which participatory design is "an approach to involve users in the design” (Ehn, 2008, p. 1). Participatory approaches are also associated with democratizing innovation (Björgvinsson, Ehn and Hillgren, 2010) and open, active, and collaborative processes (Manzini and Rizzo, 2011). For a guide to ‘community-engaged’ practice, see Lillie and Larsen (2024).
	Multi-disciplinary, Trans-disciplinary	Multidisciplinary as examining a research question from the perspective of many disciplines; transdisciplinary as transcending disciplinary boundaries in the examination of a research question and producing new knowledge (Schmalz, Janke and Payne, 2019).
	Co-design, co-creation, co-production	Co-design as “collective creativity as it is applied across the whole span of a design process” vs co-creating as “act of collective creativity”, which does not cover an entire design cycle (Sanders & Stappers, 2008, p. 6). “Active involvement of a diverse range of participants in exploring, developing, and testing responses to shared challenges”, including people as “experts in their own lives” (Blomkamp, 2018, p. 731, 732). Depending on the

		interpretation, participatory design, co-design, and co-creation may or may not involve people with lived experience. Co-production as citizens or users as partners in the "delivery of public services" (Blomkamp, 2018, p. 735).
	Knowledge co-production	In science and research, co-production can also mean "co-producing *knowledge* and action" (Chambers et al., 2021, p. 984, emphasis added); For further discussion and other examples see Baumber et al., 2018, Sannö et al., 2019, Turnhout et al., 2020, Hakkarainen et al., 2022, Fleming et al., 2023.
Transitions for Systems	Transition research (including the MLP and X-curve)	Conceptualizing transitions as the "structural and systematic reconfiguration of a stable societal system towards a new dynamic equilibrium, understood to evolve over decades or generations", Transition research is not just aimed at understanding the dynamics of change, it also seeks "leverage for guiding societal transitions" and "the role of agency in driving processes of change" (Hebinck et al., 2022, p. 1009). Over the past couple decades, the field of Transition research has arrived at a definition of sustainability transitions as "redirecting development pathways so that they more equitably advance the well-being of everyone today without compromising the ability of future generations to define and achieve their own well-being" (Geels, Kern and Clark, 2023, p. 1). In line with this definition, Transition research has come to focus on 'consumption-production systems… embedded in nature-society interactions', with attention to impacts across long horizons of time and long distances (e.g., in how the consumption patterns of one society can affect the sustainability outlook of another) (Geels, Kern and Clark, 2023, p. 2-3). The MLP is one of the most cited transition frameworks. To describe how transitions come about, Geels (2002) developed the MLP framework based on the work of Rip and Kemp (1998), and in Geels, Kern and Clark (2023) comments on the evolution of the field and the growing use of this model, offering an updated version. In the 'Power-Shift Framework' Fraser and Glass (2020) provide an alternative based on a reading of feminist and systems practice. In an empirical example Wallace (2019) sets out a canvas based on MLP that incorporates everyday behaviors (via social practice theory) and cultural aspects (based on design theory), which is further discussed in Wallace (2022). Another model of note is the *X-curve*, developed by Loorbach (2014) and others, with a recent update from Hebinck et al. (2022). The X-curve highlights the processes

		of regime destabilization, breakdown, and phase-out that need to occur simultaneously with processes of experimentation, acceleration, institutionalization, and stabilization, but are omitted from models like the MLP. Attending to these processes opens critical areas of research and helps ensure that 'actionable' guidance is enabled by transition research. Significant for this research and the next sections on transformations, adaptation, and resilience, the X-curve incorporates theory from social-ecological system studies, for instance ideas of "chaos, emergence, and co-evolution" originating from Complexity Theory (Hebinck et al., 2022, p. 1012), as represented in the Panarchy and the Adaptive Cycle models from Gunderson and Holling (2002). Critically, the X-curve sees "chaos and conflict as a functional space" (Hebinck et al., 2022, p. 2012).
	Transformations	Transformations has different origins than transition studies and is understood to view change in terms of global environmental impacts (like planetary boundary overshoot) and the need to create 'safe and just operating spaces' to avoid 'undesirable system change' (Hölscher, Wittmayer and Loorbach, 2018). As Hölscher, Wittmayer and Loorbach (2018) describe in comparing transition and transformation studies, transformation is understood as "fundamental shifts in human and environmental interactions and feedbacks"; strategies are often presented through the lens of resilience and adaptation (Hölscher, Wittmayer and Loorbach, 2018, p. 1) and purposive 'transformative adaptation' (O'Brien, 2012, p. 671). Particularly with the growing interest in intentional systems change and the recognition of the inseparability of humans and nature, the fields of transitions research and transformation "have moved closer together" in recent years (Olsson, Galaz and Boonstra, 2014; Hölscher, Wittmayer and Loorbach, 2018). The understanding that "deliberate transformation" represents an "adaptive challenge that calls for deeper inquiry into structures of meaning making" (O'Brien, 2012) correlates with the design role that is envisaged as well as the critical self-reflection and societal change that is called for in Transition Design (Irwin, Kossoff and Tonkinwise, 2015a). The empirical example from Juri et al. (2022) defines transformation as "as ethico-political...and social-learning processes that transcend scientific domains, disciplines, or siloed sectors (e.g., government)" (p. 02) whereas in Chen's 2023 case study the term 'transformations' is read societal outcomes and change resulting from systems transitions (p. 701).
	Adaptation & Resilience	Understood as the ability, or robustness, of communities and ecosystems to withstand and respond to stressors

		(adaptability), make changes (even transform), to return to a stable state (though perhaps not the same state); socio-ecological resilience sees "people and nature as interdependent systems" (Folke et al. 2010, p. 2). Resilience includes concepts like Panarchy and Adaptive Capacity (Gunderson and Holling, 2002), regime shift, thresholds, and transformability. Resilience is discussed with respect to design and cosmopolitan localism in Manzini (2013). Concepts of adaptation and resilience originate from the principles of Living Systems and Complexity Theory, described below.
	Systems Thinking (including Leverage points, Iceberg model, Causal loop diagrams)	As defined by Meadows (2008): "A system is an interconnected set of elements that is coherently organized in a way that achieves something...a system must consist of three kinds of things: *elements, interconnections,* and a *function* or *purpose*" (p. 11); "Systems can be nested within systems" and so "purposes within purposes" (p. 15); a systems is "often classified as its 'function' or 'purpose'" (p. 188). Systems thinking – holistic and integrative – evolving from the field of General Systems Theory (von Bertalanffy, 1967). Systems thinking is positioned "opposite of linear thinking...it focuses on relationships versus components, and integration versus dissection...it recognizes and addresses the dynamic nature of systems and that system feedback loops are essential to understanding system dynamic behavior; that systems exhibit self-organization and emergent properties; and that Systems Thinking has great power in analyzing, understanding, and influencing complex business, socio-economic, and natural problems and behaviors." (Monat & Gannon, 2015, p. 19). Stroh (2016) defines Systems Thinking as "the ability to understand [system] interconnections in such a way as to achieve a *desired* purpose", by understanding "the purpose that a system is accomplishing", "[reflecting] on the difference between what they say they want…and what they are actually producing", and "reconciling the difference" (pp. 16-17). Senge (2006), in pioneering the concept of learning organizations, describes Systems Thinking as a "discipline that integrates the disciplines" (The Fifth Discipline) with a key role in helping people move from "seeing ourselves as separate from the world to connected to the world, from seeing problems as caused by someone or something 'out there' to seeing how our own actions create the problems we experience" (pp. 11-12). *Thinking in Systems: A Primer* (Meadows, 2008) is considered a "seminal work on systems thinking" (Monat &

		Gannon 2015, p. 12). The concept of Leverage Points (from Meadows, 1999) refers to "places in the system where a small change could lead to a large shift in behavior" (Meadows, 2008, p. 145). Meadows names twelve Leverage Points, ordered from least to most leverage: constants and parameters, size of stabilizing stocks and flows (buffers), structures of stocks and flows, time delays, balancing feedback loops, reinforcing feedback loops, information flows and access, rules (incentives, punishments, and constraints), self-organization, purpose, and function (goals) of the system, paradigms, and the power to change paradigms. Systems Thinking is also associated with concepts, models and tools like the feedback loops, causal loop diagrams, stock-and-flow diagrams, and systems archetypes that Meadows sets out (for other descriptions, see Senge (2006) and Stroh (2015) as well as concepts like the Iceberg model (Hall, 1976).
	Social Impact, Community Development (Water of Systems Change, Social design pathways)	In terms of methodological origins, social impact is understood through three lenses, social design, social entrepreneurship, and community development. Design that seeks to benefit public, or social, good may be referred to as design for social impact. See the Winterhouse Institute's website (n.d.) to access the Social design pathways). For discussion of social entrepreneurship, refer to Dees, Anderson, and Wei-Skillern (2004). For discussion of collective action for social outcomes, refer to the seminal work 'Collective Impact' (Kania and Kramer, 2011), and further discussions on the outcomes and shortcomings of Collective Impact (Cabaj and Weaver, 2016; Collective Impact Forum, 2018; Wolff, 2016; and Wolff et al., 2017). Water of Systems change is a model used to understand social impact and power (FSG, n.d.).
	Living Systems / Complexity Theory	Living Systems Theory centers nature and views all that exists as interconnected, dynamically co-evolving phenomena governed by "principles such as self-organization, emergence, resilience, symbiosis, holarchy and interdependence" (Irwin et al, 2015b). According to Miller (1976), Living Systems Theory is the subset of general systems theory that deals with "a special subset of all systems, the living ones" (pp. 295-296). Preiser et al. (2018) track broad moves that led from Living Systems principles to Complexity Theory and Resilience Thinking, beginning with von Bertanlaffy's 1968 conceptualization of the principles of Living Systems, through developments in Systems Thinking, Complexity Science and Complexity Theory, social-ecological systems (SES) research, the identification of SES systems as a particular form of complex adaptive systems (CAS), and then to Resilience Thinking (p. 2). They acknowledge that the terms

		'Complexity Science', 'Complexity Theory', 'complex adaptive systems', and 'complexity' are often used interchangeably, and that a unified theory of complexity does not exist (p. 2). They do, however, believe that a general and overarching understanding and vocabulary exists for complexity and the properties of CAS (p. 2). Preiser et al. outline six "underlying causal explanations of CAS features: (1) CAS are constituted relationally; (2) CAS have adaptive capacities; (3) CAS behavior comes about as a result of dynamic processes; (4) CAS are radically open; (5) CAS are determined contextually; and (6) novel qualities emerge through complex causality" (p. 3), and are hopeful that the 'complexity turn' signaled by the prolific uptake and assimilation of complexity concepts and terminology may help produce a 'paradigmatic turning point', with particular promise in supporting researchers and practitioners in taking on the pressing, real world sustainability challenges of our time (pp. 3, 2, 1). Panarchy and the Adaptive Cycle (together, Panarchy Theory) (mentioned above, from Gunderson and Holling, 2002) help illustrate the properties of complex adaptive systems (Sundstrom et al., 2023). In Transition Design, an understanding of nature and living systems is often discussed in terms of what Capra and Luisi (2014) term the 'systems view of life', together with other lineages of scientific thought and research, like Goethean Science and Phenomenology' (Irwin, Tonkinwise, and Kossoff, 2020, p. 50). In 'The Systems View of Life', Capra and Luisi (2014) set out an overview of the developments in science, systems theory, and key influences that brought them to their conception of living systems (such as Complexity Theory, Arne Naes' Deep Ecology, and Maturana and Varela's account of autopoiesis and cognition, and spiritual practice). How "principles of living systems could inform a more responsible approach to design" is embedded within Transition Design framing (Irwin and Kossoff, 2017a, p. 36). Irwin (2011) lists ten principles of Living Systems (related to the six underlying causes of CAS listed above), their dynamics, and the relevance to design.
Visioning & Futures	Foresight and futures	Foresight and futures, often used in the literature without definition, pertain to various disciplines concerned (broadly) with "the idea of possible futures and using them as tools to better understand the present and to discuss the kind of future people want" (Dunne and Raby, 2013, p. 2). From the practice of 'strategic foresight', particularly in government, corporations, and other organizations for the purposes of "survival" and "renewal", foresight is

		understood as "'the ability to create and maintain a high-quality, coherent and functional forward view, and to use the insights arising in useful...ways'" (Ringland, 2010, p. 1494). Scenarios, "'internally consistent view[s] of what the future might turn out to be,'" are a common tool used in various forms of foresight and futuring (Ringland, 2010, p. 1495). For further reading, Popper (2008) discusses selecting foresight methods, Ringland (2010) defines the role of scenarios, Weigand et al. (2014) argue for collaborative foresight (which is frequently used in the empirical examples), and Gall, Vallet, and Yannou (2022) trace the history, instances, and maturing concepts linked to the cone of possible futures.
	Forecasting	Forecasting looks to "extrapolate trends into the future", with an eye to "adapt to trends", by looking at "dominant trends; likely futures; possible marginal adjustments" (Dreborg, 1996, p. 819). For further comparison as a contrast to backcasting, see Robinson (1982). Forecasting may be required for some projects, but the 'fruitfulness' of forecasting is sometimes questioned (Dreborg, 1996), particularly for endeavors like sustainability transitions which cannot be reached through forecasts of today's trajectories. The stance of design in this research seeks to keep the range of possible futures open in favor of enabling choices to desirable futures and so forecasting, seen as more conventional, are sometimes used to inform processes, or discarded altogether. For a project that opted to use a gamified process and a design game rather than conventional foresight analysis, see von Flittner et al. (2022).
	Backcasting	Described in the Ojai case study (Irwin & Kossoff, 2017a), backcasting is a method for "defining a desirable future and then 'backcasting' to the present to create a transition pathway along which projects, initiatives and programs are situated as 'steps' in the longer transition" (p. 16). Concerned with "desirable futures" and the "scope for human choice" to make "strategic decisions" that "retain freedom of action", a backcasting approach looks to "define interesting futures; analyze consequences, and conditions for these futures to materialise" (Dreborg, 1996, p. 819). Backcasting is typically conducted with multistakeholder groups, as a facilitated process. For origins, see Robinson (1982).
	Critical design, Speculative futures, and Design fiction	Critical design and speculative futures, from the work of Dunne and Raby (2013), under the umbrella of what they called 'conceptual design', sees design as "a catalyst for social dreaming" (p. *vi*). "By acting on peoples' imaginations" through design rather delivering designs into markets, "critical design aims to challenge how people think about everyday life...to see that everyday life could

		be different" (p. 45). Often using the device of "cautionary tale fast-forwarding", playing out less-than-ideal (dystopian) trajectories of "the technology industry...its market-driven limitations...[and] general social theory", "highlight[ing] weaknesses" in what is considered 'normal' today, "questioning underlying assumptions in design itself", and working with "dark, complex emotions...usually ignored in design", critical design and speculative futures "[create] the space for discussion" based on a "positive and idealistic" belief that "change is possible, that things can be better" (p. 33-45). Design fiction is one format that uses narrative to depict potential trajectories, often via dystopian futures, to provoke thought, dialogue, and action. For 'utopia' as a method, refer to Levitas (2013).
	Experiential futures	Because the future literally does not exist, and working with futures involves dealing with abstractions (Candy and Dunagan, 2017), the field of experiential futures brings together the worlds of design and futuring to use "'any medium or combination of media including image, artifact, and performance'" to make "'one or more fragments of an ostensible future world'" experience-able (p. 137). Experiential futures are linked with critical design and speculative futures and offers a tangible futuring counterpart to design fiction. For further reading, see Candy (2010), Candy and Potter (2019), and Cowart and Maione (2022).
	Causal layered analysis	As interpreted by Onafuwa and Patel (2022), causal layered analysis is "a method that seeks to combine different learning modes across empirical, interpretative scales to arrive at alternative futures. The model consists of four levels of engagement: the litany, social causes, worldview, and myth/metaphor" (p. 209). For further reading, see Inayatullah (2004).
Design Innovation	(Strategic) Design innovation	Broadly, design innovation—design thinking applied to innovation—is a model of innovation in which design processes are applied for the purpose of developing insight, ideas, and interventions, and is the basis for methods like human-centered design, user-centered design, and forms of social innovation that rely on design processes. Strategic design attends to 'product-service systems' and infers the development of 'radical innovation' that "results in a breakthrough that allows a system (a company, an enterprise or a social body) to evolve"—that is, "'to obtain a set of specific strategic results'" (Meroni, 2008, p. 31-33). Ceschin (2014) parlays strategic design into the context of sustainability transitions "A new strategic design role thus emerges, a role in which the ideation and development of sustainable PSS concepts is coupled with the designing of

		appropriate transition paths to gradually incubate, introduce, and diffuse these innovations. A key role in these transition paths is given to the implementation of socio-technical experiments: protected spaces where radical innovations can be tested, become more mature, and potentially challenge and change dominant socio-technical practices, habits and institutions" (p. *viii*).
	Design thinking, User-centered design, and Human centered-design	Made popular by IDEO and 'Change by Design' (Brown, 2009), design thinking was conceived as an approach to innovation based on a "radical [form] of collaboration...that blur[s] the boundaries between creators (read as: designers) and consumers (e.g., users)" (Brown and Katz, 2011, p. 382). Through "overlapping spaces" (rather than phases) originally labelled as 'inspiration', 'ideation', and 'implementation', design thinking aspires to tap into "capacities we all have but that are overlooked by more conventional problem-solving practices" so that "what is desirable from a human point of view" is integrated "with what is technologically feasible and economically viable" (Brown 2008, p. 16, 4). Ardoin et al., (2022) argue that the core principles of design thinking, which they define as "inspires creativity; is participatory and people-focused; encourages and inspires diversity in thought and action; adopts a holistic, systems-thinking mindset; and offers a streamlined, action-oriented process" (p. 329), are of benefit to sustainability solutions. Although human-centered design was intended to move the consumer- and user-centered focus of design thinking to include all involved, the reality has been that "User- and human-centered design approaches seldom have the objective of identifying all affected stakeholders and their concerns, nor do they examine the individual and collective beliefs, assumptions, and cultural norms that have contributed to the problem" (Irwin, 2019, p. 151). For a sampling of additional perspectives: Collopy (2009) advises what design thinking can learn from Systems Thinking; Dalsgaard (2014) examines design thinking within the philosophical position of pragmatism; and Gaziulusoy (2019) warns that "There is a danger that Transition Design might become the new 'design thinking'" e.g., "it might be reduced to a process model and commercially exploited by 'Post-it design consultancies' as yet another tool of incremental change, rather than push the boundaries of mainstream socio-ecological-technical and socio-political practices and imaginaries" (p. 77).
	Service design	Service design, using design-based approaches to innovation, is concerned with the designing as well as marketing of services for an improved customer experience e.g., improving the interactions between service providers and customers (Stickdorn and Schneider,

		2011). It is often associated with concepts and tools like touchpoints, customer journey mapping, and service model blueprints. For further reading on tools, methods, and process, see Stickdorn and Schneider (2011), Stickdorn et al. (2018a, 2018b), Penin (2018), and Morelli, Götzen and Simeone (2021).
	Social innovation	Manzini (2014) defines social innovation, "a normal component of every possible society", as "'a new idea that works in meeting social goals'" and describes how "Social innovation is a process of change emerging from the creative re-combination of existing assets...the aim of which is to achieve socially recognized goals in a new way" (p. 57). Social innovation is linked to the lineage of design thinking but may or may not involve a design-based process in the production of social innovations. For a sampling of further reading, see Mulgan (2006) and Leadbeater (2007).
	Frame creation	Frame creation is a method developed by Dorst (2015a and 2015b) which foregrounds framing (and reframing) as the "key and special element of designers' problem-solving practices" (2015b, p. 2). As Dorst (2015a) describes, "The core frame creation model centers upon a 9-step process that addresses open, complex, dynamic and networked problems by creating a new, broader context for the problem, and then concentrating on the emergence of underlying "Themes" that lead to the creation of "Frames" for action" (p. 26). For further examples of frame creation, see Dorst et al. (2016) and Kashyap, Svejkar and Tonkinwise (2024).
Ontological openness	Ontological design	NOTE: Each of the methodological lineages in this section are interlinked by the 'ontological turn' in design to recognize the ways in which design may close (defuture) or open possibilities, particularly pluriversal possibilities. Ontology is "the branch of philosophy which deals with the *nature* and structure of '*reality*.'" (Guarino, Oberle and Staab 2009, p. 1). Escobar (2017) emphasizes that "Design is ontological in that all design-led objects, tools, and even services bring about particular ways of being, knowing, and doing" (p x). As Willis (2006) sets out, concerned "with the *nature* and of the *agency* of design" and recognizing the "relationship between human beings and lifeworlds" in that "we design our world, while our world acts back on us and designs us", ontological design seeks to 'uncover' or 'unconceal' the 'thinging' and 'worlding' effects within our designing and that the things we design perpetuate. Beyond awareness of the damage that design can do and is doing, ontological design provides an inkling of what it might mean to avoid 'defuturing' (Fry 1994, 2020), to

		ensure we develop “futures that have a future” (Escobar 2017, p. 9), but also to facilitate ontological openness. Often cited readings and origins of ontological design include Heidegger (1962, 1977) and Heideggerian philosophy, Winograd and Flores (1986), the works of Maturana and Varela, including ‘Autopoiesis and cognition’ (1980), Willis (2006), Fry (1994, 2020), and Escobar (2017). Many of the innovation and futuring practices discussed in the empirical examples in this analysis are used to help support ontological openness and ontological designing.
	Pluriversal design	The ‘pluriverse’ is “*a world where many worlds fit”* (citing the Zapatistas”, a world of biological, epistemic, cultural, and ontological difference (Escobar 2017, p. *xvi*). Pluriversal design then, inclusive of ontological designing, is a reorientation of design “toward creative experimentation with forms, concepts, territories, and materials” with and for diverse peoples and cultures seeking to “redefine their life projects in a mutually enhancing manner with the Earth”—in manners that fit with their worldviews, cultures, ancestry, and ways of being, so that many worlds can coexist all at once (p. *xvii*).
	Relational design	In the project of ‘redesigning design’, Escobar (2017) highlights tuning design to the “*relational* dimension of life” as key to “nourish[ing] design’s potential for the transitions” (p *x*). Relational design simultaneously refers to designing ‘in relation to one another’ and ‘in relation to Earth, place, and environment’, designing by seeing humans as nature, in relationship with nature. Relational design attends to the spaces, places, moments, events, interactions etc. that allow for the primacy of relational being and wayfinding, “such as creating spaces and services for conversations and new learnings” (Samuels-Ballantyne, 2020, p. 154).
	Autonomous design	Autonomous design is based on the idea that “every community practices the design of itself” (Escobar, 2017, p. 5), as its own version of ‘autopoiesis’ (p. 173), and the “notion of *autonomía* (autonomy)” is coupled with “the parallel notion of *comunalidad,* or the recrafting of communal forms of being, and their associated practices”--and of community in ‘radical interdependence’ with the rest of the world (p. 166). Escobar notes that “Some say that autonomía is another name for people’s dignity and for conviviality...at its best, *autonomía is a theory and practice of interexistence and interbeing, a design for the pluriverse”* (p. 175).
	Convivial design	Conviviality, based on the “conviction” that “’in the advanced stage of mass production, any society produces its own destruction’”—was conceptualized by Illich as a political vision for the “reconstruction of convivial modes

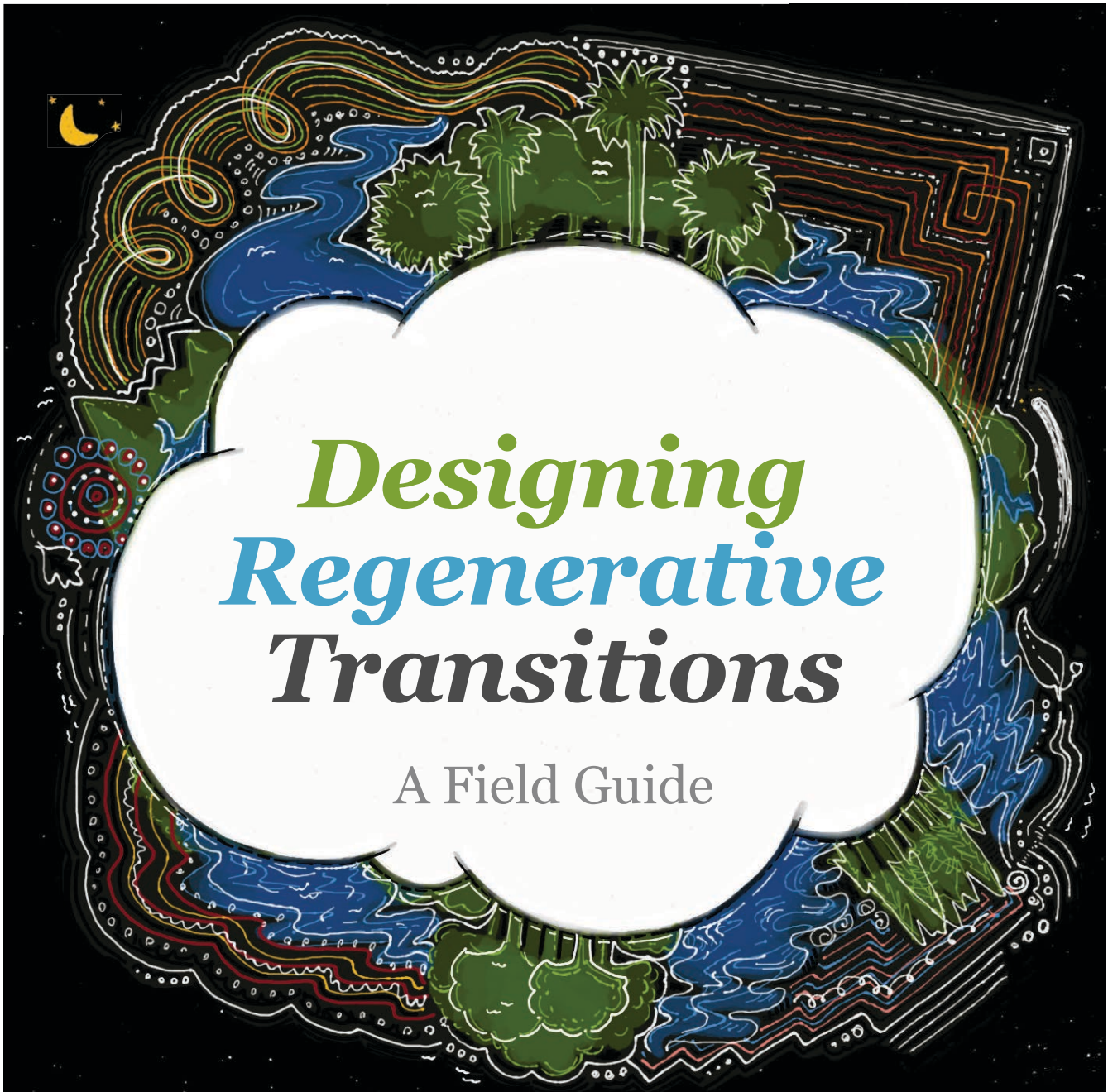
		of living" (Escobar, 2017, p. 8). Cipolla (2009), quotes Illich who defines conviviality as "'individual freedom realized in personal interdependence and, as such, an intrinsic ethical value'" and describes it as a quality that, once "'reduced below a certain level, no amount of industrial productivity can effectively satisfy the needs it creates among society's members'" (p. 5). Conviviality is also associated with the 'pleasure of being together' (Cipolla, 2009, p. 6; Samuels-Ballantyne, 2020). "Against the enslavement of man to his tools" (Cipolla, 2009, p. 5), Illich advocated the need for convivial tools that are "efficacious in fostering people's creative autonomy, social equity, and well-being, including collective control over energy and work (Escobar, 2019, p. 9). For readings in English, refer to Illich's 'Tools for Conviviality' (1973).
	Redirective design	Framing design as "the exemplary procedural site for the negotiation of possibilities", Fry and Dilnot (2003, 'reading the manifesto' section) posited a manifesto for redirective design that argues for ontological responsibility in design. To constitute the manifesto, under the heading "Ten points towards relearning how to make and shape the world" they list 1) recognizing, making present, critically reading design metaphysically and ontologically, 2) the same for technology, 3) reading design and technology in relation to each other, 4), understanding the destruction and creation, the ethics materialized or negated, in design, 5) eliminating much of what has been designed, by design, 6) remaking the old, 7) archaeologically exploring the forgotten wisdom in what was once known and designed, 8) learn to design in time, 9) reinvent and refine language that is ontologically unsuited, and 10) design things sacred, engendering the forms of care that preserve. Fry (2007) sets out three areas of focus for redirective practice: "three areas of focus: adaptation in face of what has to change to counter the unsustainable; the elimination of what threatens sustainment by designing 'things' away; and prefiguration, which is designing in order to redirectively deal with what is coming." (p. 5). For examples of the journey of redirecting practice see Moegerlein (2019) and Wallace (2019).
	Reflective and reflexive practice	Embedded within many of the methods here is an assumption of *reflective* practice that ladders up to *reflexive* practice, where *reflective* practice involves deliberate activities or moments within the design process for stepping back and reviewing what has been done, the direction the work is headed, and what that might mean for practice. *Reflexive* practice is understood to widen the scope of reflection to include practice in general, the designer's stance, role, and way of being, and how these are linked to perpetuating or shifting the status quo. These

		steps are one pathway to recognizing the ontological in design. Schön (1983) is credited with the term 'reflective practitioner' and a still-definitive exploration of the relationship between *reflective* practice and the idea of 'reflection-in-action', which describes the in-the-moment reflecting and iteration that designers enact in the process of attempting to materialize ideas in line with intentions. *Reflexivity*, on the other hand, is associated with 'critical distance' (Moegerlein, 2019) that is required to examine the designer's positionality, privilege, and ontology (etc.), and helps facilitate redirecting practice, for example, to "prevent [it] from becoming yet another colonial tool" (van Selm and Mulder, 2019, p. 204). It is anticipated that facilitating *reflexivity* and *reflexive action at scale* will be essential to enabling the societal self-reflection that is expected will be needed in transitions (Clausen and Gunn, 2020; Lu and Sangiorgi, 2021).
	Decolonising design	Decolonising design refers to unsettling and destabilizing colonial relations of power, including how the colonial ontology manifests in everything—in our worldviews, systems, and ways of relating to one another, etc. Relational, ontological, and pluriversal design are intrinsically bound with decolonising design. Vazquez (2017) asks, "Can we think of relational design as a decolonial form of being with earth and of worlding the world? Can we think of design as a mode of listening?" (abstract). For examples of studies in decolonising design and transitions, Emmanouil (2017), Tlostanova (2017), Vazquez (2017), Design and Culture special issue on Decolonising Design (Schultz et al., 2018), Da Costa et al. (2021), Barcham (2022), Goethe and Santolo (2022), Udoewa (2022), Torretta et al. (2023), and Tunstall (2023). For reading outside of design, consider 'Decolonising Methodologies' (Smith, 2012) and 'Decolonising Solidarity' (Land, 2015).
	Indigenous worldviews and ways of being	There is renewed respect for and growing interest in looking to, learning from, and creating change with Indigenous peoples and their worldviews, wisdom, and ways of being as we navigate transitions. In the 'Manifesto for Redirective Design' Fry and Dilnot (2003) call, for instance, for 'remaking the old' and 'design[ing] archaeologically' because "so much of what we need to know is held in that which was once known and design, but now has been forgotten" (Ten points towards relearning section). In Transition Design, Irwin, Tonkinwise, and Kossoff (2020) acknowledge Indigenous Wisdom as a 'key influence', from which "Transition designers have much to learn" in terms of their "approaches to designing and their

		symbiotic relationship with the natural environment" (p. 48). This turn is ontologically significant, but has risks, including perpetuating colonization, fetishization of Indigenous peoples, cultures, and histories, and appropriation and theft of Indigenous knowledge and Indigenous cultural and intellectual property (ICIP). Janke (2005) defines ICIP in the following terms: "ICIP refers to Indigenous peoples' rights to their heritage. Heritage consists of the intangible and tangible aspects of the whole body of cultural practices, resources and knowledge systems developed, nurtured, and refined by Indigenous people and passed on by them as part of expressing their cultural identity. The heritage of an Indigenous people is a living one and includes items that may be created in the future, based on that heritage. Each Indigenous community asserts ownership of this communally owned heritage material. Whether there are firm cultural rules and expectations will vary from community to community. In many communities, whether consent is necessary may depend on the circumstances of the proposed use, and if the person who wants to use it is part of the relevant cultural group. It is common for Indigenous communities to assert ownership over cultural material in those communities where cultural practices still occur or are being revived" (p. 96). To inform approaches for working with whilst protecting (and not appropriating) Indigenous wisdom and knowledge, Janke (2005), Woodward et al. (2020), Barlo et al. (2021). Janke (2019) proposes ten principles for ICIP best practice: 1. Respect 2. Self-determination 3. Consent & consultation 4. Interpretation 5. Cultural integrity 6. Secrecy and privacy 7. Attribution 8. Benefit sharing 9. Maintaining Indigenous culture (pp. 323-357). For works that embed Indigenous world views in research, design, and land management processes (as examples), consider 'Caring as Country' (Suchet-Pearson et al., 2013), 'Buran Nalgarra' (Dadd et al., 2021), and Kanngieser et al., (2024).

Appendix C: Field Guide

As a practice-based PhD, this research includes a Case Study output—a Field Guide for designing regenerative transitions. Refer to separate document: '*Designing Regenerative Transitions—A Field Guide: Transition Design Elements of Practice and Case Study in Agriculture*'. NOTE: The Field Guide is embedded in the soft copy of this thesis, and that version has its own page numbering.



Designing Regenerative Transitions

A Field Guide

TRANSITION DESIGN
ELEMENTS OF PRACTICE &
CASE STUDY IN AGRICULTURE

Michelle Miller

Designing Regenerative Transitions—A Field Guide

Transition Design *Elements of Practice* Framework and Case Study in Agriculture

This field guide outlines the discipline of Transition Design, presents a framework that sets out elements of practice for anyone interested in developing their own Transition Design practice, and offers a demonstration of practice through a case study that is based on a project to support farmer, sector, and systems transition to Regenerative Agriculture.

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Student #12816171 | UTS HREC Ref No. ETH18-3235 | ETH20-5436 | ETH22-7871

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Terminology

Sustainability In this field guide, the term 'sustainability' is used to mean a dynamic condition in which humans live within planetary boundaries—and contribute to ecological systems function and overall environmental health, wellbeing, regeneration, and abundance. It is not intended in a static, not-good-enough sense.

Agriculture & farmers The term 'agriculture' is used to refer to the food and fiber production system. The term 'farmers' refers broadly to all types of producers, noting that not all producers refer to themselves as farmers. The terms 'producer', 'land manager' and 'steward' are sometimes used in place of the term 'farmer'. I note the association of the terms 'agriculture' and 'cultivation' with the practice of plowing—which is minimized in Regenerative Agriculture. I acknowledge the colonial history of agriculture, and how western concepts of agriculture were used to dispossess people of their lands. This work seeks to help address and not perpetuate that history.



I acknowledge the Traditional Custodians of the lands on which this research was conducted and of the lands on which I live—the Gringai people, Wonnarua Country. Like the Traditional Custodians, may we all find ways to live, work and act in harmonious relationship with land, sea, sky, community, and creation. I pay my respects to elders past, present, and emerging.

I acknowledge my positionality and privilege as a designer and researcher from a Western context, having worked in corporate, social, and academic contexts. I have the deepest gratitude for those who have shared knowledge and wisdom with me so far, and those who continue to try to find ways forward together. I seek to pay it forward in service of a regenerative and just future for us all.

About

This is a two-part illustrated field guide for Designing Regenerative Transitions.

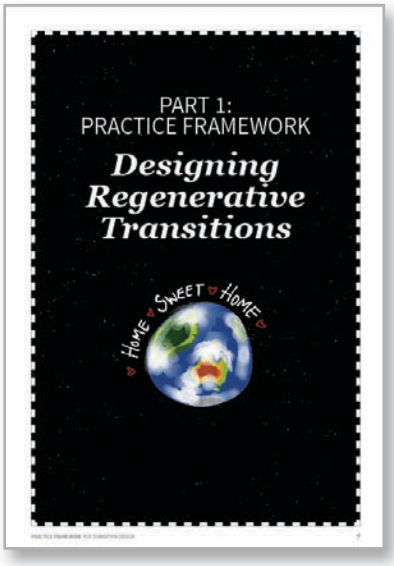
Part 1 gives an overview of Transition Design practice.
Part 2 presents a case study of design for Regenerative Agriculture transitions.

PART 1

Transition Design

Elements of Practice

Pages 7-40

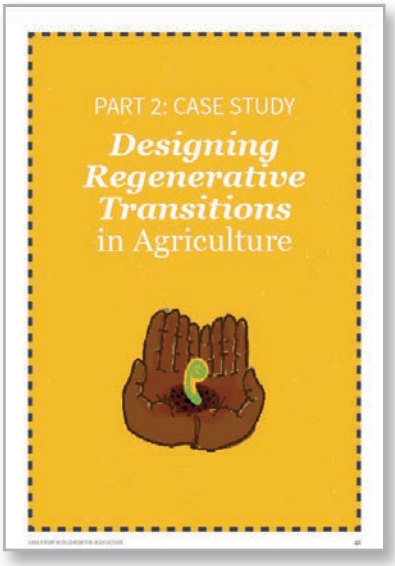


PART 2

Regenerative Agriculture

Case Study

From page 41



The elements of practice section describes Transition Design as a discipline. It outlines the methodology and practices. The purpose is to give an orientation to practice for anyone interested in Transition Design.

Who is it for?

- Groups collaborating on transition initiatives in complex social, economic, technological, and ecological contexts
- Practitioners interested in a design approach
- People working to bring about regenerative and just futures

The case study is an example of Transition Design in practice. The case study was undertaken to identify ways to support farmers and the sector more broadly to transition to Regenerative Agriculture, by design.

Who is it for?

- Anyone promoting, advocating, or curious about Regenerative Agriculture
- Design practitioners interested in how Transition Design may work in an agricultural context

This document does not seek to convince an audience of the merits of Regenerative Agriculture, or to influence people to undertake transition.

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Part 1: Elements of Practice 7

1. Transition Design overview..... 8

What is transition and why is it needed?
Why Transition Design?
What is design?
What is designing—in Transition Design?
Transformation through Transition Design

2. Introducing the Elements of Practice Framework..... 20

3. Elements of Practice..... 25

Transition Theory
Process
Protocols for practice
Decision-making
Practice Catalogue

Part 2: Case Study 41

1. Context..... 43

2. Initiate and Situate..... 48

What is Regenerative Agriculture?
Barriers to transition
Summary of existing enablers of transition

3. Reframe..... 63

Reframing barriers as opportunities
Summary of sub-projects

3. Respond..... 69

Opportunity Theme A: Farmer transitions and capability..... 71

1 Education, Extension and Support
→ *Project Example: TransitionAg*
2 Landscape repair
3 Transition pathways

Opportunity Theme B: Sector capacity..... 86

4 Science, research and measurement
5 Finance, investment and insurance
6 Supply, retail, processing and distribution
→ *Project Example: Compost as a Catalyst*
7 Local, global markets
→ *Project Example: WWF Local Learning Labs*
8 Governance, incentives, and policy
9 Collaborative regeneration initiatives

Opportunity Theme C: Narratives, discourse and cultures..... 98

10 The definition of Regenerative Agriculture
11 Reconciliation, reparations, and relationships
12 Consumer awareness and demand
→ *Project Example: Rewilding Moore Park*

4. Envision..... 103

5. In a nutshell—Transition in seven memes..... 112

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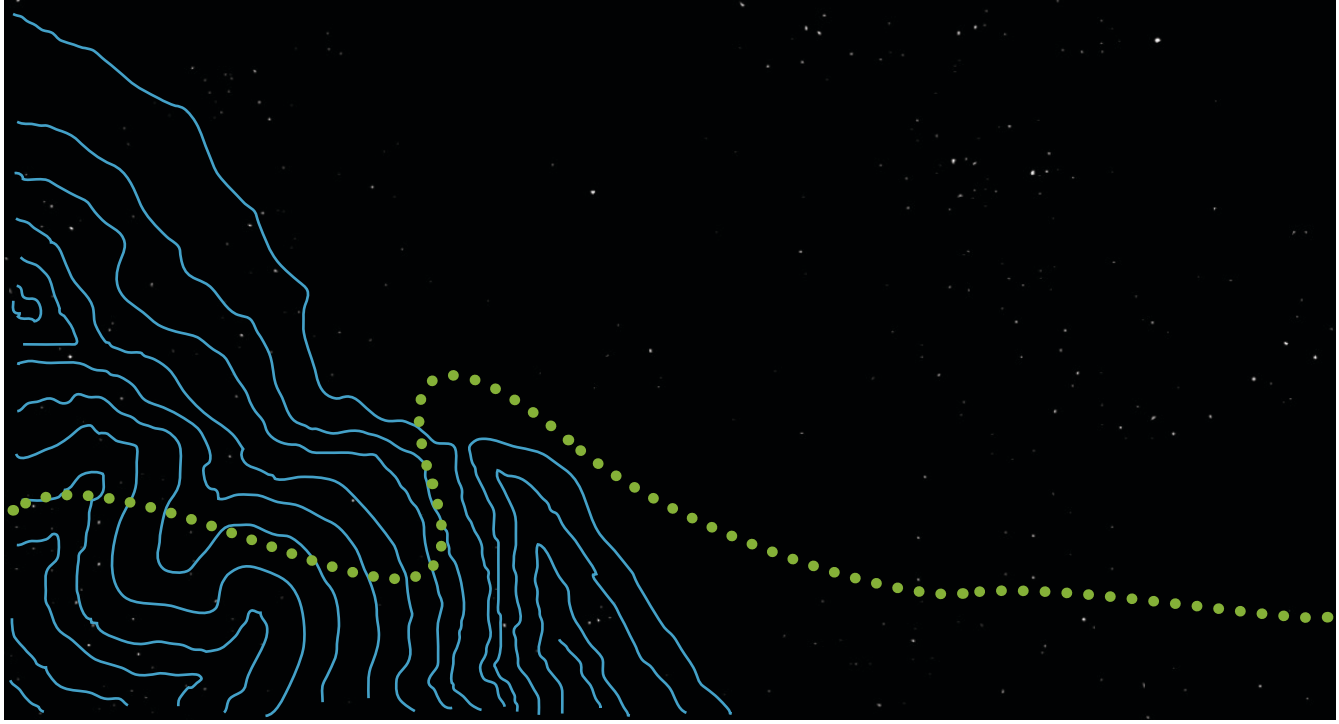
PART 1:
ELEMENTS OF PRACTICE

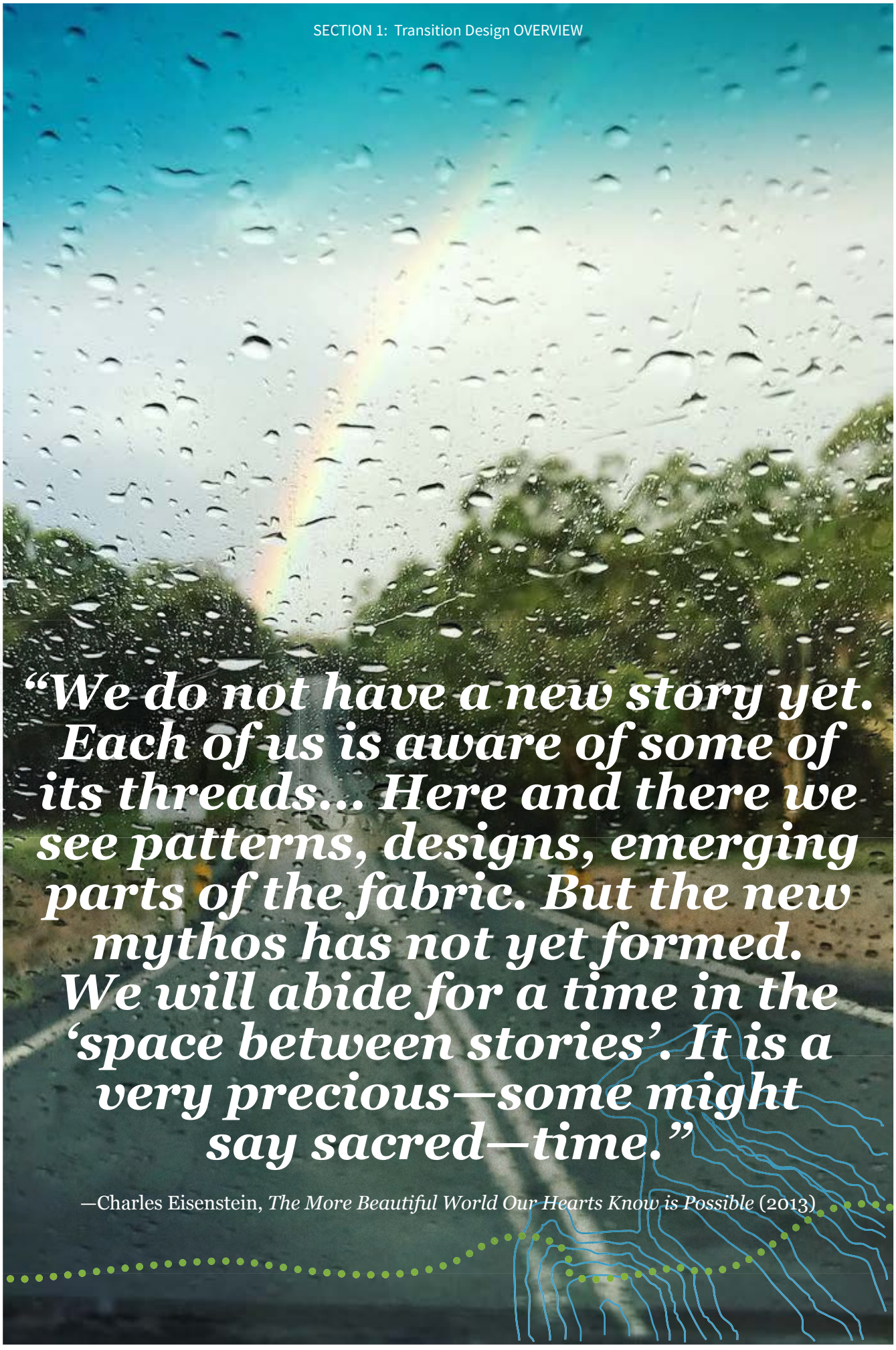
Designing Regenerative Transitions



SECTION 1

Transition Design Overview





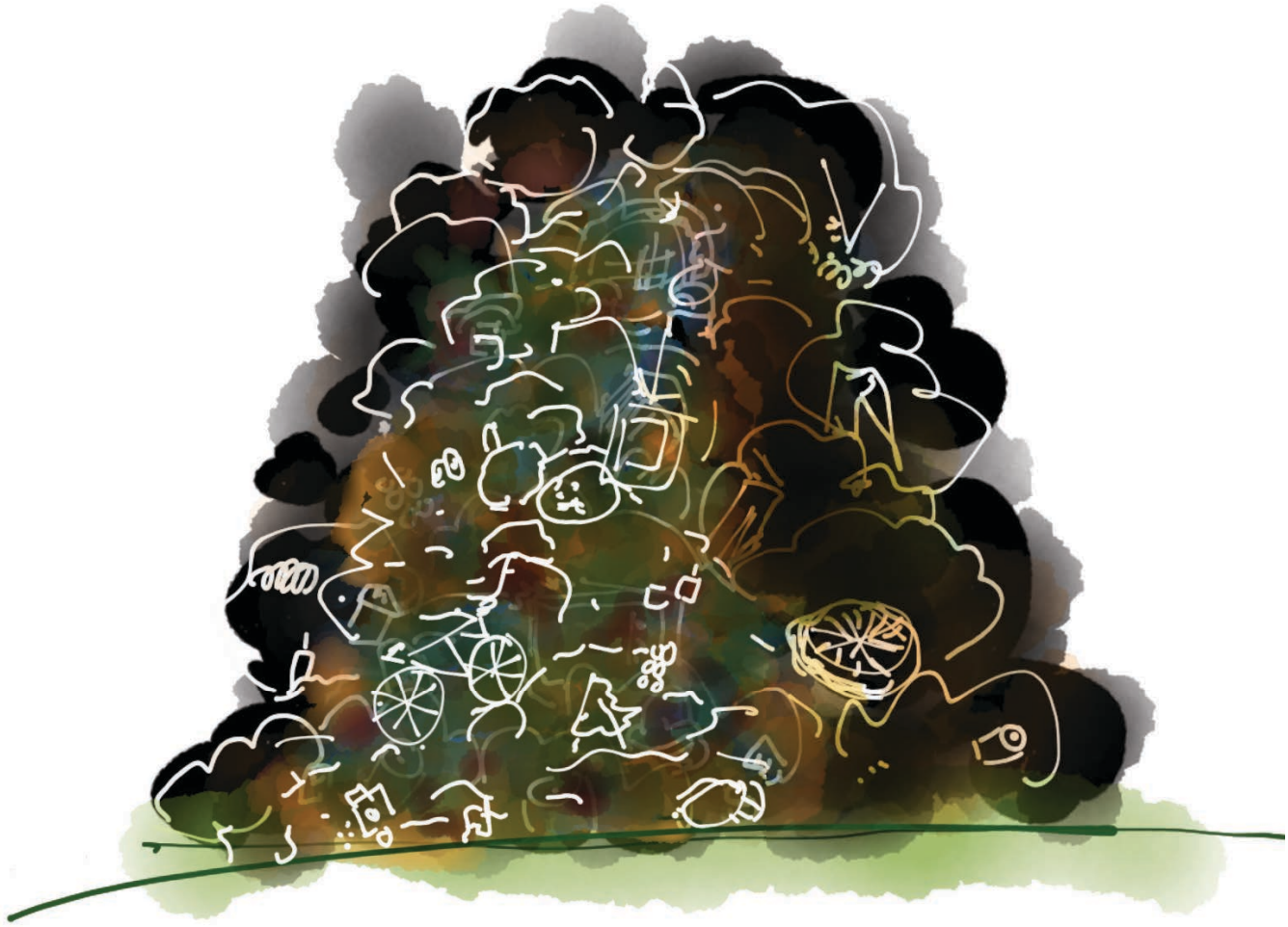
"We do not have a new story yet. Each of us is aware of some of its threads... Here and there we see patterns, designs, emerging parts of the fabric. But the new mythos has not yet formed. We will abide for a time in the 'space between stories'. It is a very precious—some might say sacred—time."

—Charles Eisenstein, *The More Beautiful World Our Hearts Know is Possible* (2013)

What we know:

Every system is perfectly designed to get the results it gets.

–W. Edwards Deming



For instance:
Waste. It's a thing.

(in our culture at least...)

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What is transition and why is it needed?

Tired of the word "unprecedented"?

Arguments for change often start with a burning platform. In keeping with that tradition, I will rattle off a series of challenges facing Australia and in particular the state of New South Wales (NSW), where I live. Over the past five years alone, NSW has faced unprecedented bushfires and then flooding, kicked off by one of the worst droughts in recorded history. Scientists point to these events as well as Australia's broken planetary boundaries (biodiversity, land system change, and nitrogen and phosphorus flows) as indicators of disrupted ecosystem function and impacts beyond the carrying capacity of our environment.

Land clearing, deforestation, agriculture, and land management have altered energy, nutrient, and water flows, compromising cycles and systems at many scales, from local ecosystems and small water cycles to broader ecosystems including rivers, underground aquifers, and ocean currents. These changes amplify loss of habitat, species, and biodiversity.

In a 'sunburnt country', water and nutrients are precious, and keeping these cycles intact is vital. Farmers are facing increasing input costs and threat of resource scarcity, meanwhile toxin accumulation in our environment and in our bodies continues to emerge in data.

Global dynamics further compound challenges. The COVID-19 pandemic crashed local economies, disrupted supply chains, and put Australian food security into sharp focus. Global political, economic, and market insecurity, complicated by Russia's war on Ukraine, creates a level of instability and uncertainty that hasn't been felt for nearly a century. A global market means global interdependence, and much of our policy, export, and infrastructure locks us into these dynamics, at least for the short to medium-term. The Australian population continues to grow, which places more demand on agriculture. Economic vicissitudes directly impact farmers, where some markets are up but others are down, and labor is harder to access. Meanwhile, urban and regional development puts pressure on peri-urban farming areas, and climate change puts more pressure on marginal farming areas. Agriculture, it seems, gets squeezed on all sides.

Not a pleasant read.

Hope perches in the soul

We humans don't tend to be very accepting of a grim prognosis, and the idea that we might have brought dire straits upon ourselves particularly rankles. We are an optimistic lot, for the most part. Even in complex, uncertain times, hope "perches in the soul / And sings the tune without the words - / And never stops - at all", as Emily Dickinson captured so elegantly.

There is growing interest in the idea of "regenerative", for instance, that is broader than agriculture and calls us to steward nature's innate capacity—and therefore our own innate capacity—for environmental, economic, social, and personal renewal. For me, the regenerative instinct shows up as an ache for and a stubborn belief that we can see wetlands, dense bush and grasslands interwoven to a much greater extent with our productive agricultural land, urban environments, and broader landscapes, in a way that nurtures all. Time in the landscapes is part of where renewal comes from, for me—so my own renewal and landscape renewal are connected. What ache-meets-stubborn belief shows up for you?

Author Charles Eisenstein named this (and his book), 'the more beautiful world our hearts know is possible" (2013). Otto Scharmer (2009) describes this as "the future that wants to emerge."

How we get from here to there

Getting from "here" (where we have a heap of structurally produced issues cumulatively impacting social, economic, and environmental wellbeing) to "there" (a regenerative and just future—socially, economically, and ecologically) is a question of transition. How do we lift and shift? How do we redesign the airplane while flying it? How do we find and amplify the patterns of the future already present today? How do we transition from where we are now to where we want to be when there is no known precedent in human history?

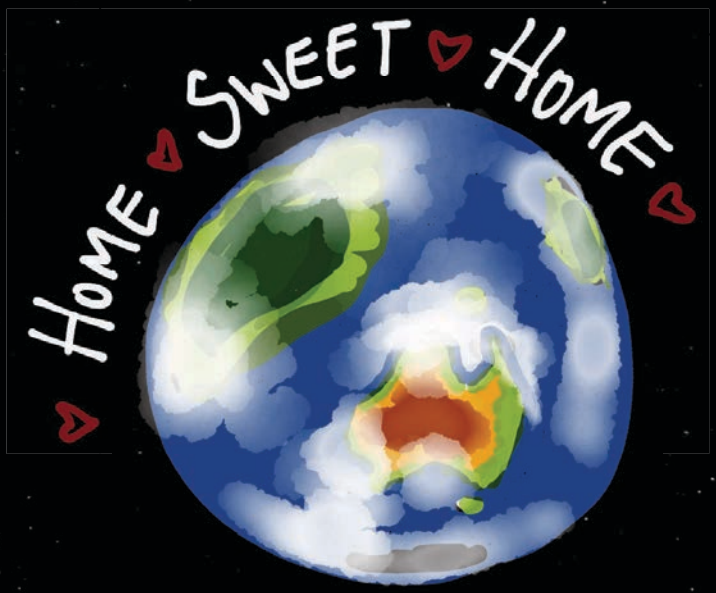
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Meanwhile, in Australia...

Unprecedented bushfires & flooding

Persisting, intensifying droughts

Disrupted water cycles

Escalating loss of habitat, species, and biodiversity

Toxin accumulation

Ongoing land clearing and deforestation

Increasing input costs and resource scarcity

Climate change

Global Pandemic(s)

Disrupted supply chain, food security

Political and market instability

*Global economic uncertainty mixed with structural 'lock-ins'**

Population growth

Pressure on marginal AND peri-urban farming areas and communities

Broken planetary boundaries

And more...

*SOURCE: Iles 2021

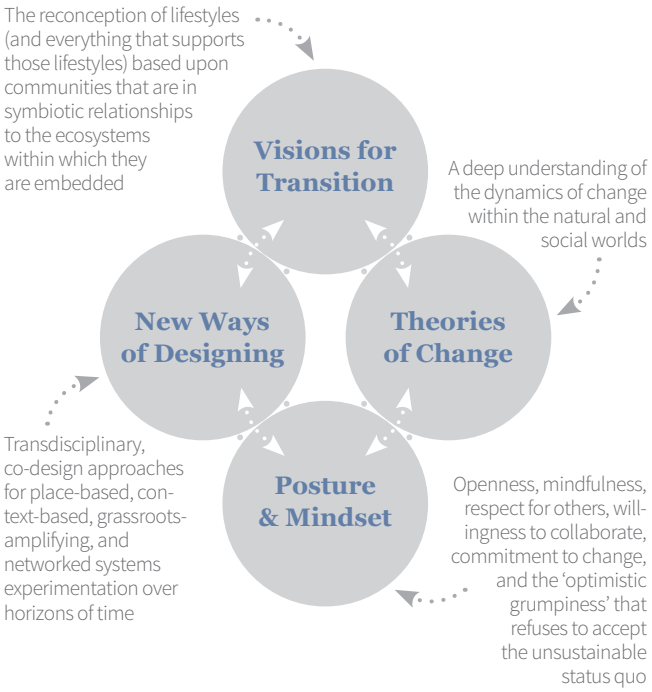
Why Transition Design?

Emergence of Transition Design

Transition Design is a growing area of research and transdisciplinary design practice framed by Terry Irwin, Gideon Kossoff and Cameron Tonkinwise in 2014 (Irwin et al., 2015). The term 'transition' connects Transition Design to transition research, which "[originated] in Northern Europe within the academic fields of Innovation Management and Technology Assessment", with a focus on socio-technical transitions like energy transitions (Irwin et al., 2015). In this context, the term 'transition' refers to the conviction that cumulative human endeavor is endangering all our futures and that "whole societies and their infrastructures must transition toward more sustainable states", and that it is expected "that these transitions will require systems-level change"—and design (https://transitiondesignseminarcmu.net; Loorbach et al., 2017).

Transitions deal with complex social, political, ecological, economic, and technological systems challenges,, in uncertain and unpredictable contexts. Scholars, academics, and business alike have pointed to the utility of design in working on wicked problems like transitions, so named by Horst Rittel who lists 10 characteristics that make wicked problems sticky, tricky, fraught and never truly solvable. Transition Design, then, is an opportunity for designers to contribute to global transition efforts. This practice guide and case study will demonstrate what Transition Design can look like in practice.

The Transition Design Framework (Irwin et al., 2015) names four mutually reinforcing and co-evolving areas of knowledge, action and self-reflection:



What is Transition Design?

"Transition Design brings together two global memes. First, the idea that entire societies must transition toward more sustainable, equitable and desirable long-term futures and second, that these transitions will require intentional, systems-level change...

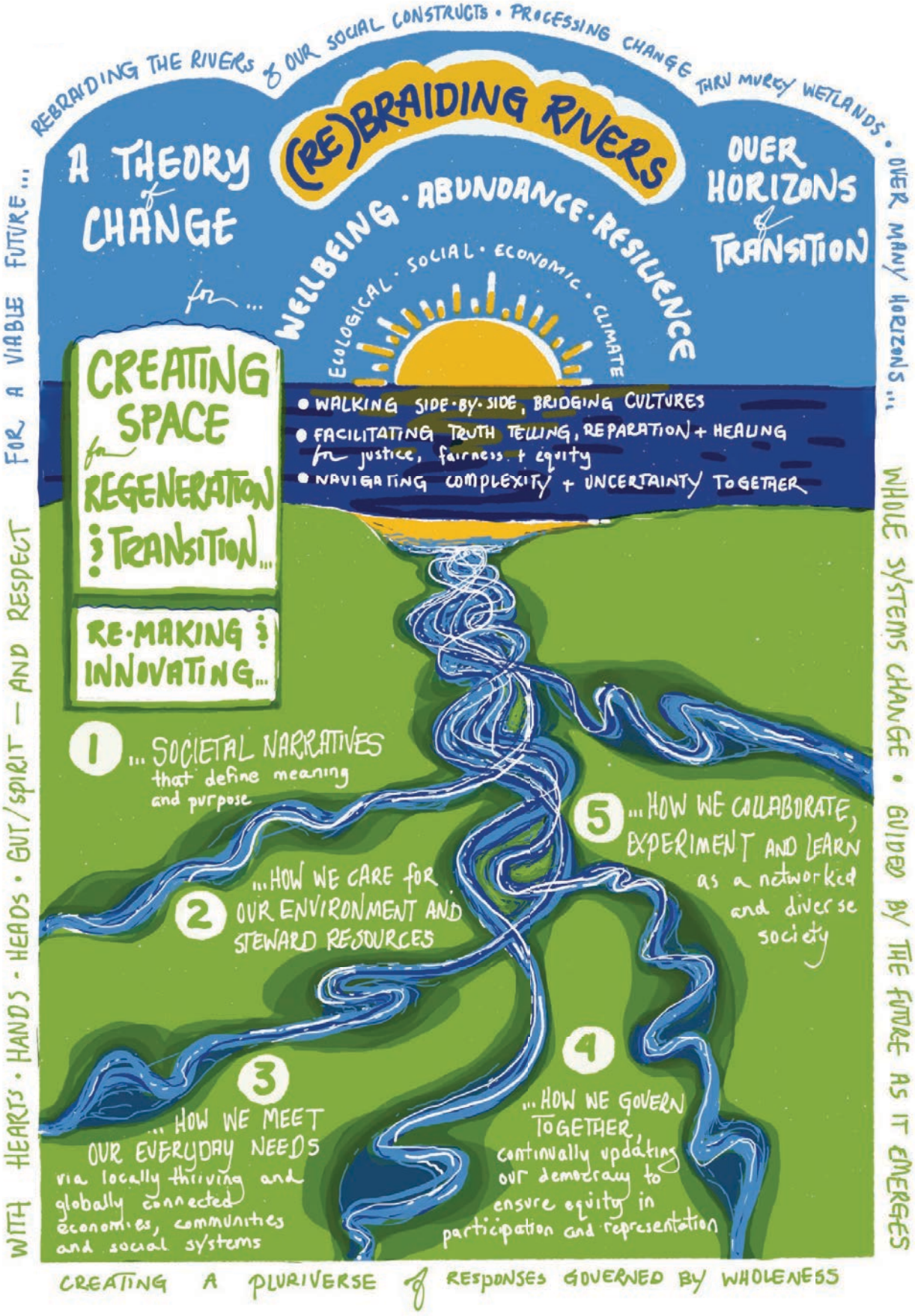
Transition Design is a transdisciplinary approach aimed at addressing the many 'wicked' problems confronting 21st century societies: climate change, forced migration, political and social polarization, global pandemics, lack of access to affordable housing/healthcare/education and many others. These problems are interconnected, interdependent and always manifest in place and culture-specific ways. Transition Design argues that new knowledge and skill-sets are required to address these problems..."

—from the *CMU Transition Design Seminar website*

An integrative and generative discipline

Transitions impact and require a pantheon of stakeholders, across numerous cultures, backgrounds, power structures, and disciplines (transdisciplinary). Transition Design offers an approach that can support diverse peoples to come together, integrate their thinking, generate new responses, build agency, and amplify the fragments of the future here today. Wahl (2016) draws out the integrative role of design:

> *"Design should not be considered a specialized field of human endeavor; rather, it can be understood as the integrative activity that connects human intentions to their material and cultural expression in the form of artefacts, institutions and processes. A design-based approach will not only help us to integrate many different perspectives and disciplines, it will also remind us that for the transition to be effective it will have to include not just a sound scientific basis informed by systemic thinking, but also ethical, aesthetic, social, cultural, economic and, of course, ecological considerations"* (p. 124).



Designing transition to regenerative and just futures

Transition as the object of design

Every form of design has its associated 'object(s) of design'. Product designers work on objects in our material world; graphic designers work on visual communications; architects design our built environment, landscape architects design landscapes, service designers design service processes, cultures, and operating models, etc. Transition Designers help catalyze transitions.

There are numerous domains undergoing transition that design could support, including: climate resilience and disaster response; water transitions; energy transitions; regional-industry-workforce transitions; urban transitions; land, ocean, and fisheries management; agriculture; regenerative and circular economy transitions; health and social sector; governance and policy; and more.

What are we transitioning to?

Regenerative and just futures

If our goal is a regenerative and just future, then we are asked to re-make, innovate, and re-integrate our societal cultures and constructs. The task at hand is to repair and remake our relationship to one another and the world we are a part of. The image, '(Re)braiding Rivers: A Theory of Change over Horizons of Transition', visualizes this existential challenge as rivers of societal constructs to be redesigned, murky wetlands for reintegrating, healing, and processing change, and transition over many horizons and oceans of time.

The diagram names five rivers of transition:

1) Societal Narratives—that define meaning and purpose
2) How we care for our environment and steward resources—seeing ourselves as part not apart
3) How we meet our everyday needs—via locally thriving and globally connected (cosmo-local) economies, communities, and our social, health, wellbeing, and care systems
4) How we govern together—continually updating our democracy to ensure equity in participation and representation
5) How we collaborate, experiment and learn as a networked and diverse society

These rivers merge into wetlands that help us create the space for regeneration and healing by:

- Walking side-by-side, bridging cultures
- Facilitating truth telling, reparation, and healing for justice, fairness, and equity
- Navigating complexity and uncertainty together

> ***"We will come to regard the creation of a globally regenerative civilization expressed in exquisite locally adapted diversity as the creative challenge of our times"***
>
> —Daniel Christian Wahl, Designing Regenerative Cultures (2016, p. 153) Emphasis added

What is design?

One of the most quoted definitions of design is from Herbert Simon: "'devising a course of action aimed at changing existing situations into preferred ones'" (Irwin et al., 2015b; Schön, 1983). Swann argues that "visual form is a form of knowledge", defining designing as a form of research that synthesizes findings not into words but into visible, tangible things. Swann quotes Mike Press (2002), who "suggests that…'A designed artifact is a researched proposition for changing reality.'"

Design can be a noun, a proper noun, and a verb. 'A design' as a noun is the output of creative, form-giving processes to achieve a specific end. Design is both a skilled activity and a universal activity. 'Design' as a proper noun is a professional discipline of form-giving in service of specific objectives. 'To design' or 'designing' as a verb is the universal process of form-giving to achieve an intended outcome. Regardless of the discipline (for instance: product design, interaction design, graphic design, service design, architecture, landscape design, etc.), designing is a goal oriented, form-giving activity in which the end output of multiple cycles of testing, obtaining feedback, and iterating is judged by how well it is 'fit for purpose'.



IMAGE: Small group discussion using an illustrated systems map at a transition workshop.

The output of design introduces a novelty into a context—and so design is inextricably linked to changemaking, whether the resulting changes are fully intentional or not. Not only do the outputs of design result in change, but also change happens during the process itself. As Schön (1983) notes, "We are in the problematic situation that we seek to describe and change, and when we act on it, we act on ourselves." When we go through a design process, we change. This characteristic of design—changemaking as both an end product and a phenomenon that occurs through process—is critical for Transition Design.

Design as a universal task

Daniel Christian Wahl (2016) names transition to sustainability as "the creative challenge of our times", implicating our collective imagination and ingenuity in the task of transitions. (Re)design is everyone's job:

> *"We are all designers! We all co-create the world we live in through our relationships and our behaviour as citizens, community members and consumers. We all have real and perceived needs and we all design our own strategies to meet those needs. […] Our intentions influence both our action and our inaction, they shape how we co-create the world"* (Wahl, 2016, p. 123).

In these terms, everyone engages in designing as a verb, as a means of acting upon a situation to bring about our intentions. It is our intentions, and how they flow through our choices and actions, that produce the world we live in—and we can change our choices and actions to bring our reality into better alignment with our intentions and the future we desire.

What is designing—in Transition Design?

You can't control the future but you can take a design approach

Can we really design a transition, given that transition involves working with complex adaptive challenges that are simultaneously social, technical, environmental, and economic, where change emerges over long horizons of time and not in straight lines? No. Not in the sense of design as problem solving and solution development.

However, we can design *for* transition. We can approach transition challenges using design processes. We can use design in ways that promote change and provide alternative choices, making transition more likely.

Wahl (2016) argues for taking a design approach:

> *"If we accept that questions rather than answers, and continuous experimentation rather than lock-in solutions are safer ways to guide us through these turbulent times and into the unpredictable future, then we also have to accept that there is a limit to the extent to which we can design our future in the face of complexity and uncertainty. Nevertheless, taking a design-based approach offers us a practical way to propose and implement solutions in order to continue to learn and improve our guiding questions….On the one hand we have to accept that the future will remain unpredictable and uncontrollable; and on the other hand we can work creatively with the future potential of the present moment to envision and navigate towards the third horizon" (pp. 123-4).*

Skills and capabilities

Transition Design requires many of the same skills that designers of all types use everyday, adapted for complex contexts. Highlighted by the 'Design Thinking' movement, design has become valued for how human, behavioral, cultural, social, and technical dimensions of change, etc. are taken together in context so that those involved can better make sense of and act in complexity:

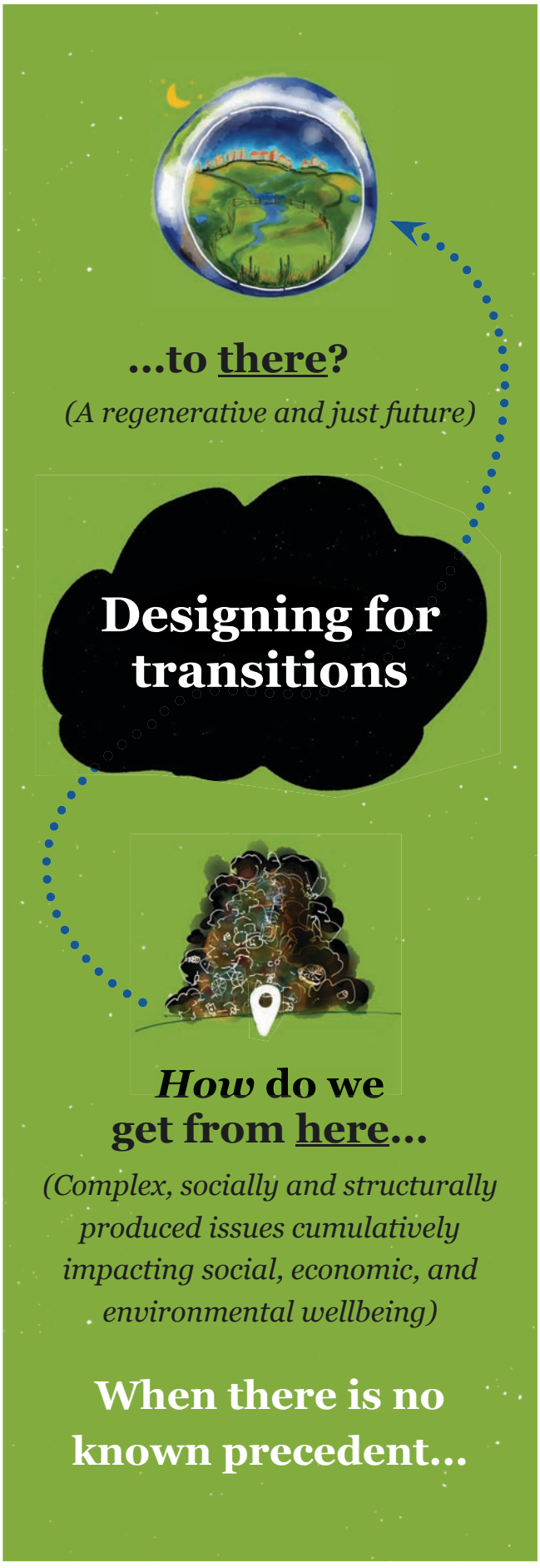
> *"Design...observes humans and the systems they interact with in their context and using the insights acquired...frames the problem with due emphasis on human experience and the meaning derived through that experience...It has been argued widely and for long that, design is suitable for addressing wicked problems (Dorst, 2003; Goldschmidt, 1997; Rittel and Webber, 1973)."* (Gaziulusoy and Ryan, 2017).

Design as sensing and making sense – seeking to better understand and represent various perspectives—for instance, the perspectives of people with lived experience of challenges, diverse stakeholder perspectives, and increasingly the perspectives of non-human entities and stakeholders like rivers and forests; engaging in sense-making through empathy, deep listening, discovery, and observation, parsed by sensing and synthesis (Scharmer, 2009; Kolko, 2007)

Design as an integrative, generative, form-giving practice—drawing upon creativity, imagination, and ingenuity, integrating information, stimulus, and reflection to develop new ideas and responses, which are made tangible, experience-able through the visual, technical, and communicative form-giving skills of designers—a practice of "making it up" (Irwin et al., 2015b; Wahl, 2016; Schön, 1983; Dorst, 2015; Sides et al., 2022).

Design through facilitated conversations and co-creative workshops—As design has extended from solo practices to more social and collaborative processes, designers have needed to develop facilitation skills. Designers combine facilitation skills with generative tools and creative experiences to host workshops, events, and conversations that enable participants to make sense of information, develop their own ideas and visions, sometimes prototype them on the spot or over elapsed time, and chart pathways forward. Design facilitation often occurs in newer design disciplines like service design, strategic design, design-innovation, and social innovation.

Design as progressive experimentation through reflection, (re)framing, and iteration to "[make] it real" – using reflection-in-action as a source of insight and novel action (Schön, 1983); framing and reframing challenge, opportunity, response, roles, and even intent (Schön, 1983; Dorst, 2015). By developing and testing not only an ecosystem of responses but also multiple options to address the same challenge, and deferring judgment to observe how ideas play out, experimentation reduces risk and helps us learn what creates outcomes (Sides et al., 2022).



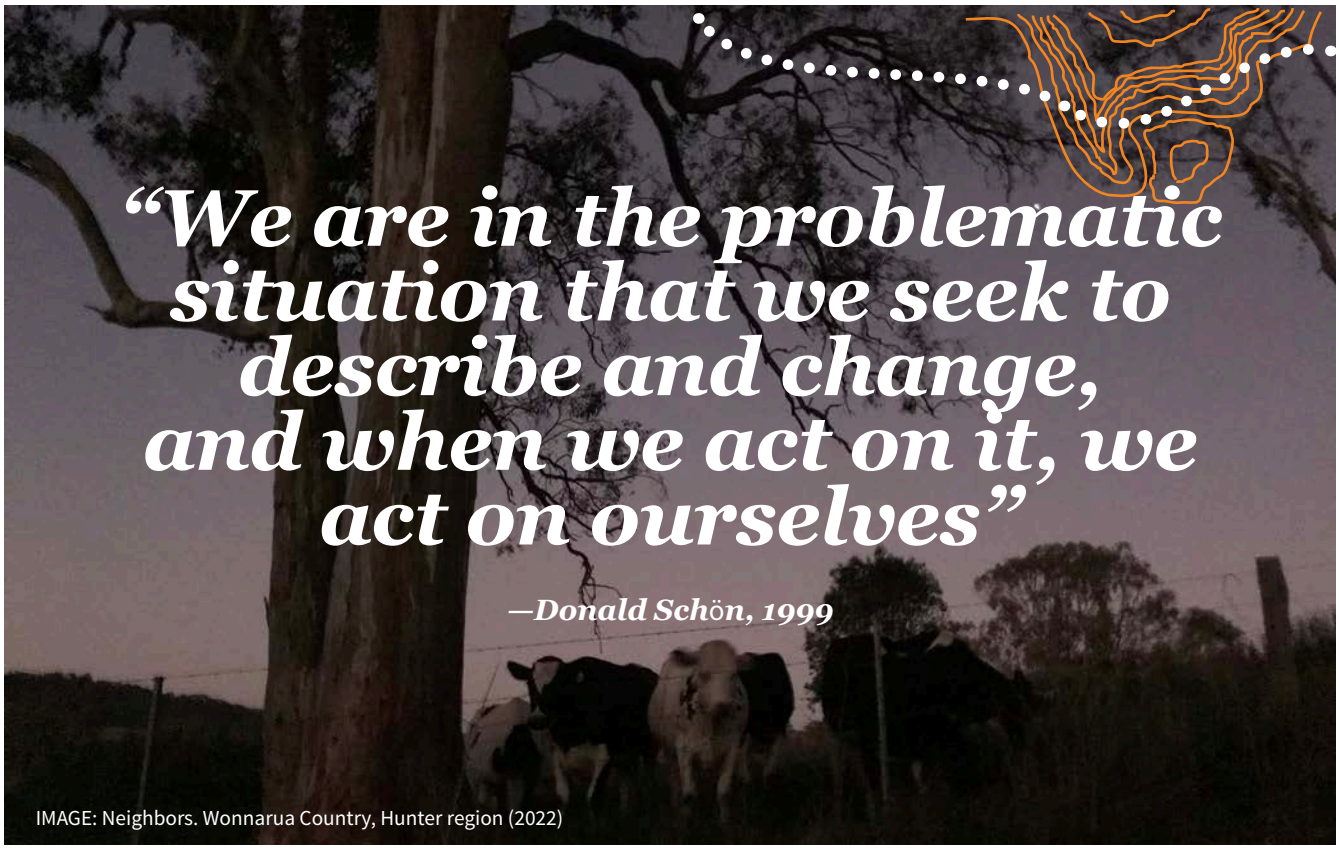


IMAGE: Neighbors. Wonnarua Country, Hunter region (2022)

An ethos of co-creation

Design conducted in social contexts follows an ethos that involves co-creating responses that work for people, with people. The underpinning philosophy is one of “doing research with and for people rather than on people” (Löfman et al., 2004). This type of approach originates from social research contexts and follows a similar ethical stance and approach as action research. The researcher/designer directly engages with stakeholders in context as collaborator, as another change agent, to work on ethical, moral, and political questions of the common good through democratic participation in action and self-determination for social change, contributing to the agency and capacity of others to enact transformation (Brydon-Miller, 2009). It involves taking a mutual approach that foregrounds local, contextualized knowledge — walking side-by-side, working shoulder-to-shoulder, and co-identifying challenges, dynamics at play, opportunities, and ways forward.

Transition Design never meets a blank page. Any change we might hope to make was made possible by others that came before us, and by others working right now. We stand on the shoulders of giants. Rather than being responsible for inventing the future, Transition Designers often help locate and amplify possibility. Borrowing strategies from other disciplines like community development and social innovation, a Transition Design approach includes highlighting positive deviance, amplifying existing work, enabling others to take action, and building capacity—particularly local and system capacity.

Transformation through Transition Design

As mentioned earlier, change is built into design itself. Transition Design processes can deliver new visions, theories of change, responses, and ways of working together, as well as be a crucible for societal, group, and individual change and transformation.

Transition Design processes give us the chance to engage and encounter others in new ways, to transform how we relate to each other and the world we are a part of. Design processes expose us to different perspectives, invite us to see our own perspectives as malleable, and develop critical thinking skills—enabling us to change our minds.

By exposing us to new ideas and visions and then making them visible, tangible, and experience-able, design makes new realities possible. Experimentation develops proof that new possibilities are feasible, making the future doable. When taken one step at a time, designing helps us figure out how to manifest, enact, embody, and inhabit a new reality.

People who are directly involved in a Transition Design process—whether as collaborators, co-designers, participants or stakeholders—are the most likely people to experience something that is transformative for them.

But transformation is possible at broader scales too. As insights develop, visions for the future emerge, and possibilities come to fruition, design can amplify changemaking efforts, engage audiences, increase accessibility, and build momentum. Outputs can be packaged and communicated in various forms (like this field guide) through written and visual communications and media. These outputs can then be used to facilitate broader conversations at the group, community, or even societal levels.

The ethos of co-creation tells us that Transition Design is most likely to be successful when we are working with people, building their capacity and agency to develop responses and to take self-determined action in their own contexts. Furthermore, if Transition Design is to help create regenerative and just futures, the means must be congruent with the ends. Working regeneratively also means learning to work holistically, with nature, and the self-organizing properties of life.

Postures: A designer's stance

Design has a particular posture or stance: believing that other futures and possibilities are not only possible, but also that we can bring those ideas into being. This generative, possibility-minded, and solution-oriented stance is intrinsic to design: we can imagine new ways to meet our needs within a myriad of constraints and requirements, and whatever can be imagined, can be made...if eventually. In transitions, where solutions aren't really possible, a solution-oriented approach can mean looking for responses that have *potential* to influence change in the desired direction.

The stance is inherently positive and full of hope—whilst holding to a pragmatism that leans into constraints and challenges. Factors holding the current paradigm in place, such as "structural lock-ins", are explored—looking for ways to remove barriers, work around constraints, and create shifts (Iles, 2021). That stance meets with a dissatisfaction with the status quo (when it comes to how we humans treat each other and our environment), to form what Transition Design framers call 'optimistic grumpiness' (Irwin et al., 2015).

Design outputs

Design is form-giving, and every form of design has its artefacts. For instance, when developing coffee mugs, product designers make various sketches, models, and functional prototypes, etc. This field guide presents a Regenerative Agriculture case study that illustrates a Transition Design approach and outputs. It includes artefacts like diagrams, illustrations, websites, and ads. This field guide itself is a Transition Design artefact.

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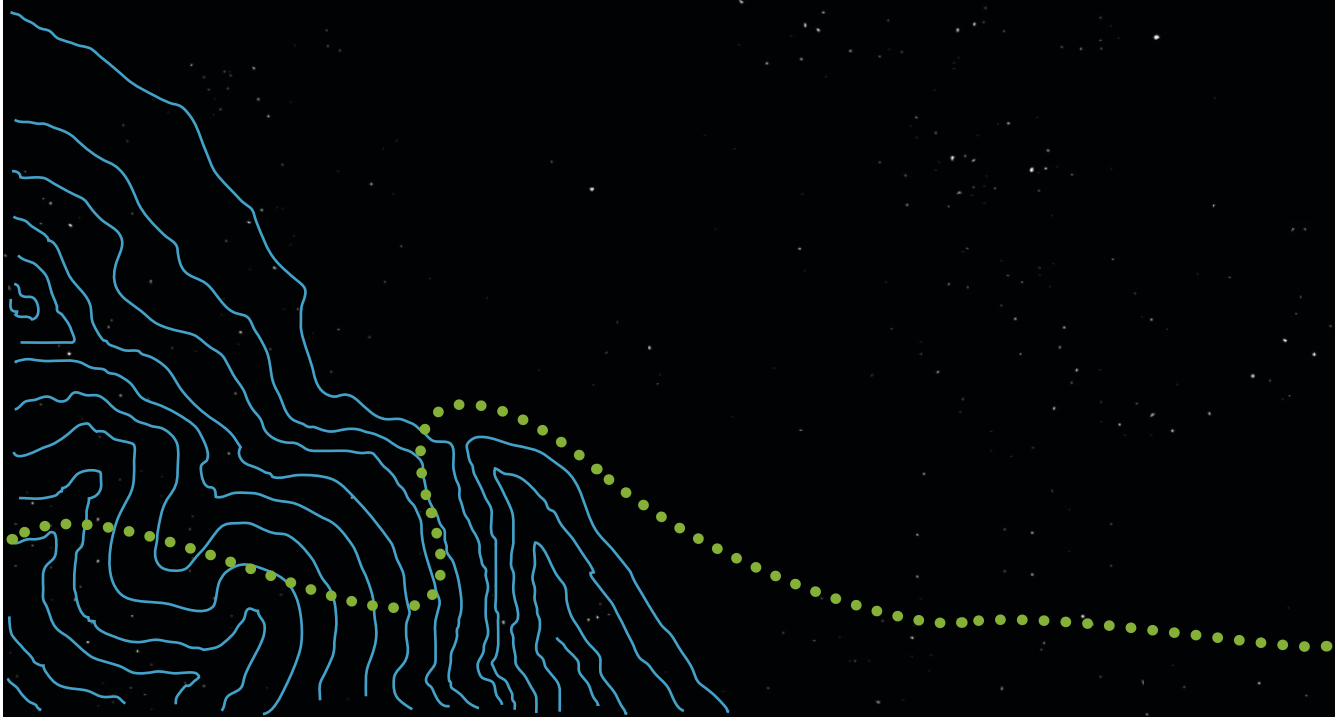
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SECTION 2

Introducing a Practice Framework



Transition Design
Elements of Practice Framework

What is envisioned and why



CONCEPTUAL

Theoretical and Methodological Framing

Visions
Narratives
Pathways

Format
Process
Role

Futures **Approach**

Way of working

Posture and Mindsets
Protocols

Responses **Practices**

Opportunities
Experiments
Changes

Methods
Activities
Tools



THEORY OF CHANGE

What we will change



THEORY OF ACTION

How we will take action

CONTEXT

Transition situation we are navigating



TANGIBLE

What happens "on the ground"



ITERATION AND EVALUATION

Through feedback, evaluation, reflection and learning, iterate and refine over time

Introducing an *Elements of Practice* framework for Transition Design

Building on the emerging Transition Design approach

How do you get started *doing* Transition Design? The good news and the bad news: you have to build your own compass. The same process or approach won't work in every situation. There are case study examples, lots of practices out there, lots of experiments you could do, and many ways to achieve a vision. Your job is to pick and mix to find the role(s) you can play in catalyzing systems change.

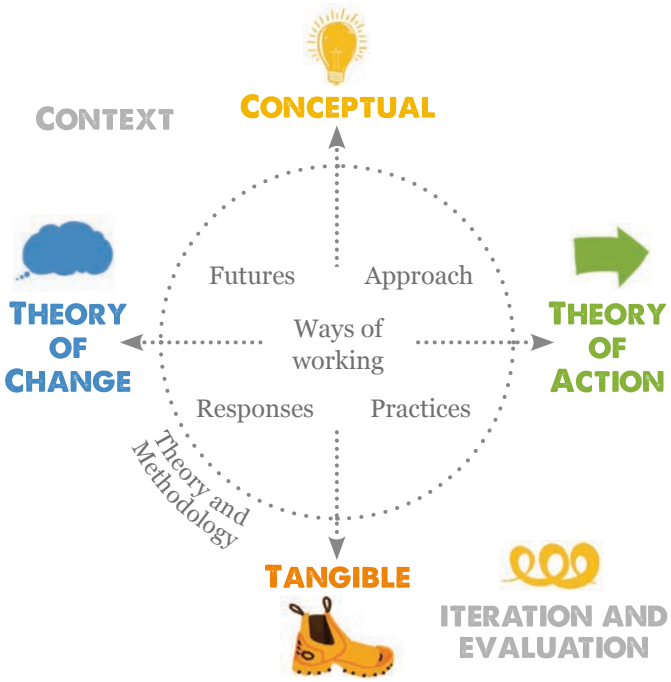
As mentioned, the Transition Design Framework (p. 13) calls for "four mutually reinforcing and co-evolving areas of knowledge, action and self-reflection": Visions for Transition, Theories of Change, Posture and Mindset, and New Ways of Designing (Irwin et al., 2015). The emerging Transition Design approach also includes three phases, reframing present and future, designing interventions, and waiting and observing, which are a reference point for the process I step out in pages 30-33. Because a little self-assembly is required, the elements of practice framework is intended to help in gathering or formulating—and structuring—all the components of practice needed to put the emerging Transition Design approach into action.

Using the framework: build your own compass

The elements of practice framework is intended to give structure to the process of assembling your own approach. The process is like building your own compass to navigate uncertain times. As you assemble the practice elements you believe you will need, you will work out *what* steps to take and how to *take* those steps. Particularly where you document it, that thinking should serve as a compass to guide you as you weigh options and choices along the way.

When starting Transition Design, use this framework together with any collaborators to help you determine your choices. Work through each component:

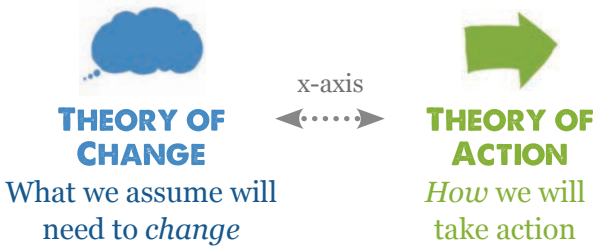
- What is your current best thinking about the future that is desired, the changes needed to reach that future, how you'll contribute, and activities you believe are useful?
- What ways of working will be needed for successful collaboration and changemaking?
- How will you document your thinking and learning? How often will you check back, reflect, and iterate your approach? How might this inform an evaluation framework? What do you learn over time about how to bring about change and impact transitions?



Anatomy of the practice framework

x-axis: Theory of Change and Theory of Action

Practice has two halves, a Theory of Change and a Theory of Action. These establish the x-axis of the framework.



- Theory of Change—Theories of Change hypothesize causal relationships between action and outcome, outlining the many changes we assume are required to bring about specific outcomes in a given context. A Theory of Change is built from Futures and Responses, underpinned by Ways of Working.
- Theory of Action—How we will take action to do our part in impacting the Theory of Change. What are we doing and how are we working to make the elements of the Theory of Change happen? What is our role? Transition Design is a Theory of Action. A Theory of Action is built from your Approach and Practices, also underpinned by Ways of Working.

y-axis: Conceptual versus Tangible

Both the Theory of Change and Theory of Action have conceptual/abstract and tangible/concrete aspects, and these aspects establish the y-axis.

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Sections of the framework

Futures—When you start an initiative, there may already be broad goals to aim for, like 'net zero' or 'the uptake of Regenerative Agriculture', as for the case study. When the stakeholder conditions are right, look for ways to develop multiple and diverse Visions, Narratives and Pathways for the future, including provocations about what is possible and desirable.

Responses—The responses, or interventions, you develop are based in desired futures. What opportunity areas, or domains for action, might you frame? Within those opportunity areas, what experiments and changes are needed, and which ones will you work on? Altogether, how might the responses you undertake form an 'ecosystem of responses' and connect with other ecosystems of responses that others are working on?

Approach—What methodology informs your approach and how might you that translate into a process, role for you and others, and then guide your choice of practices? What type of format will serve as a vehicle for working together, such as a 'lab', a project, or a platform? Formats are often the mechanisms that can be funded.

Practices—may be informed by the methodology you have selected, but your practices are not necessarily limited to that methodology. Practices from diverse contexts can be adapted to work with a given methodology with attention to the ontology of those practices and fit for context. Practices include: specific methods, for instance backcasting to develop pathways to a vision; activities, such as mapping complex challenges across a system; and diverse tools like using card sets to help generate ideas.

Ways of Working—Your ways of working are the posture and mindsets you bring to working with others and yourself, including practices of care. They are also shaped by protocols, the cultural norms for behavior, communications, and engaging with others including non-human beings and the environment around us.

Context—Practice sits within a broader context. In setting up a practice you will determine the 'system in focus' and the boundaries to which you will attend. But there are always broad contexts and other micro contexts operating that influence and can be influenced by your context. Continuing to attend to the layers of context can anticipate dynamics that will influence practice. Refer to the Adaptive Cycle and Panarchy theory (p. 31) for how different systems or system states can influence context.

Iteration and Evaluation—Practice, as represented by both the Theory of Change and the Theory of Action, must be adapted as you progress, circumstances change, and you integrate learning. Even theory may be iterated. Ideas about practice should be held lightly, treated as assumptions that are changeable if new insights come to light. Through feedback, reflection, and critical thinking, new perspectives may surface. How might you set up a reflective practice to enable you to evaluate and iterate your Theory of Change and Theory of Action, including all the elements? Once developed, you have also established a reference point for ongoing evaluation.

Theoretical and Methodological Framing

Transition Design is framed by theories and methodologies from different origins that, for instance, open the door to other ontologies, support a relational way of working, and/or help us to see and shift systems. This includes living systems theory, transition theory, participatory methodologies, pluriversal design, and more. You may need to blend your own mix of these and others. For further discussion please refer to my thesis.

What is a practice framework?

Practice frameworks translate underpinning theories, concepts, and ideas into concrete specifics about what it takes to achieve certain outcomes. They set out a logic and mental model for action, and then provide a collection of tools and concrete practices that enable a practitioner to put the ideas, intentions, and approach into action. They give practitioners a place to start, activities to try, and guidelines for effective practice.

"A practice framework 'integrates empirical research, practice theories, ethical principles and experiential knowledge in a compact and convenient format that helps practitioners to use the knowledge and principles to inform their everyday work' (Connolly and Healy, 2009, p. 32)" (Department for Health and Social Care, 2019).

SOURCE: Department for Health and Social Care. (2019). 'Strengths-based approach: practice framework and practice handbook". With support from the Social Care Institute for Excellence (SCIE). Accessed via: https://www.scie.org.uk/strengths-based-approaches/practice-framework-handbook

“‘Who are you?’ said the Caterpillar…

‘I—I hardly know, Sir, just at present,’ Alice replied rather shyly, ‘at least I know who I was when I got up this morning, but I think I must have changed several times since then.”

— Lewis Carroll, Alice’s Adventures in Wonderland

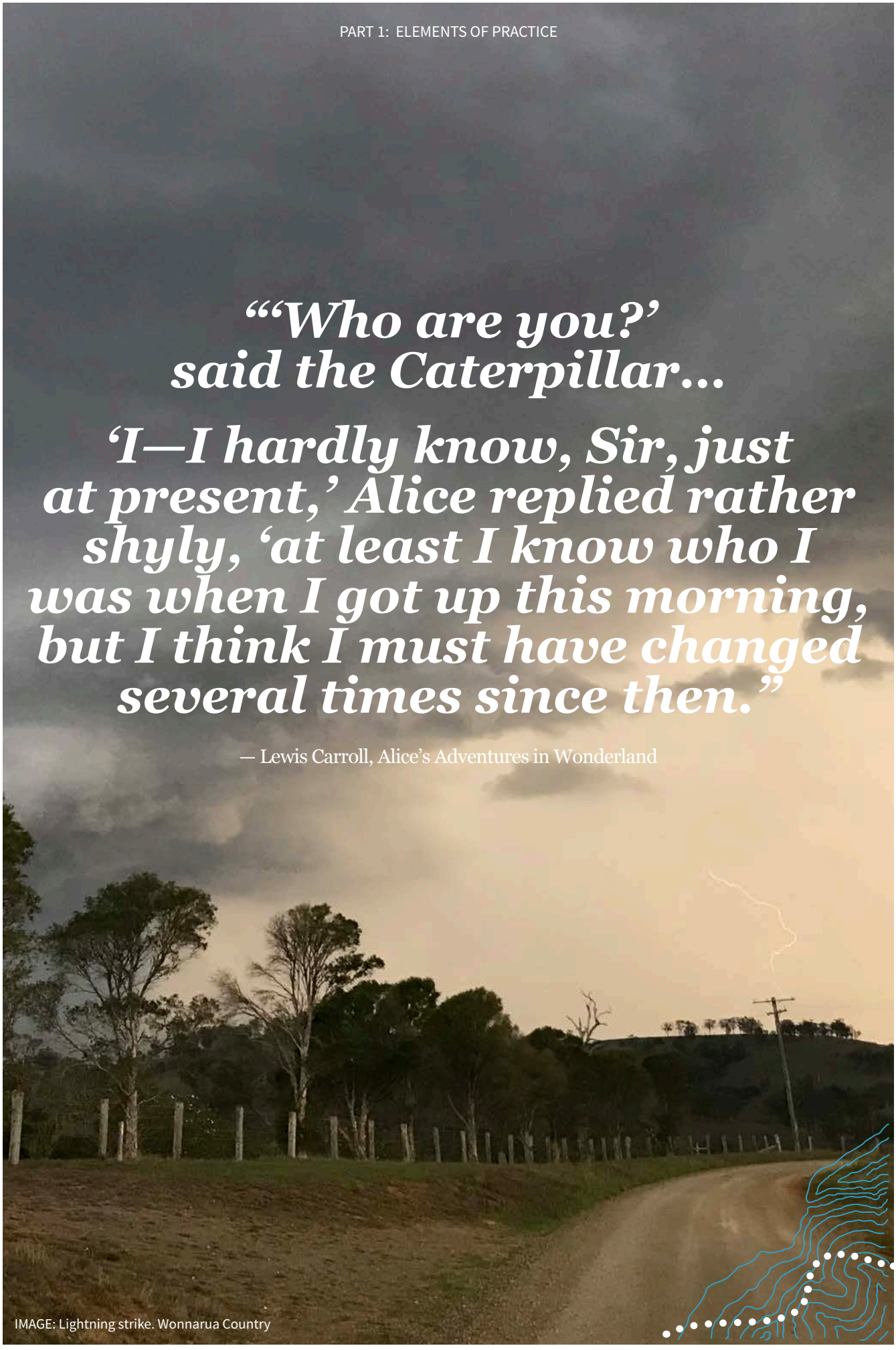


IMAGE: Lightning strike. Wonnarua Country

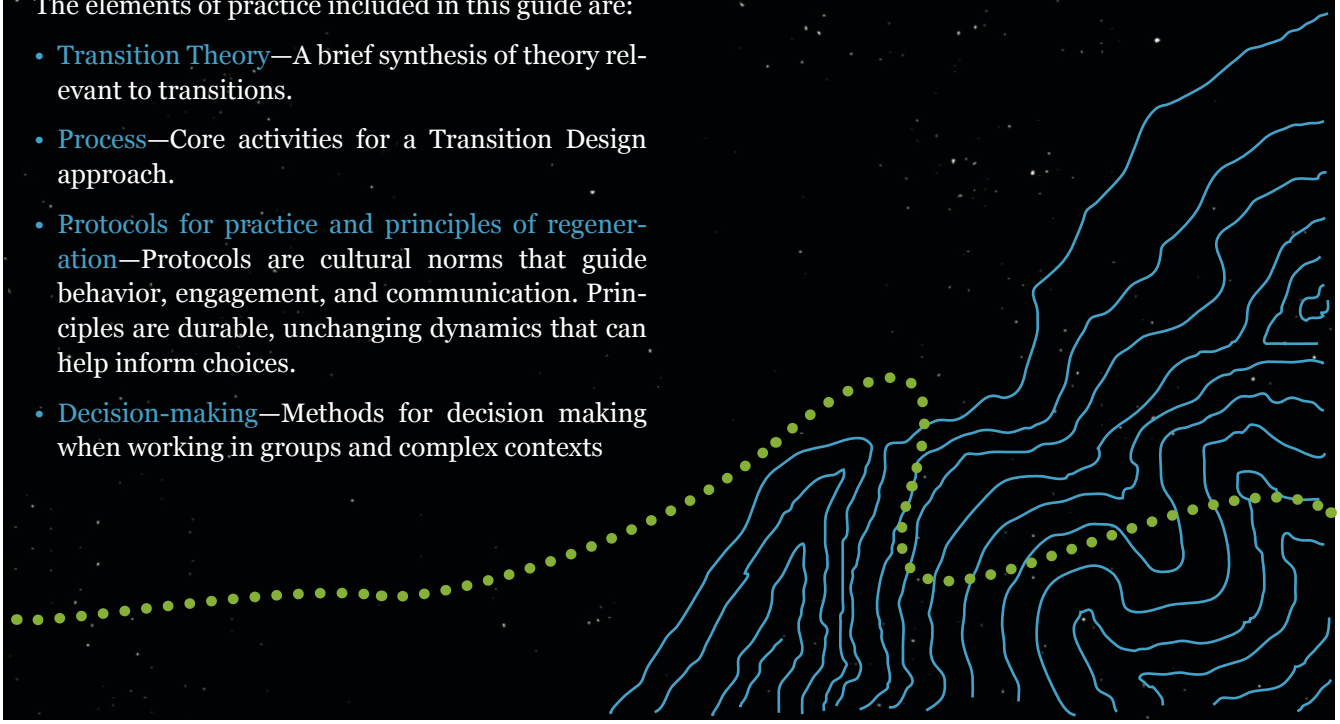
SECTION 3

Elements of Practice

Elements of practice in this guide

The elements of practice included in this guide are:

- Transition Theory—A brief synthesis of theory relevant to transitions.
- Process—Core activities for a Transition Design approach.
- Protocols for practice and principles of regeneration—Protocols are cultural norms that guide behavior, engagement, and communication. Principles are durable, unchanging dynamics that can help inform choices.
- Decision-making—Methods for decision making when working in groups and complex contexts



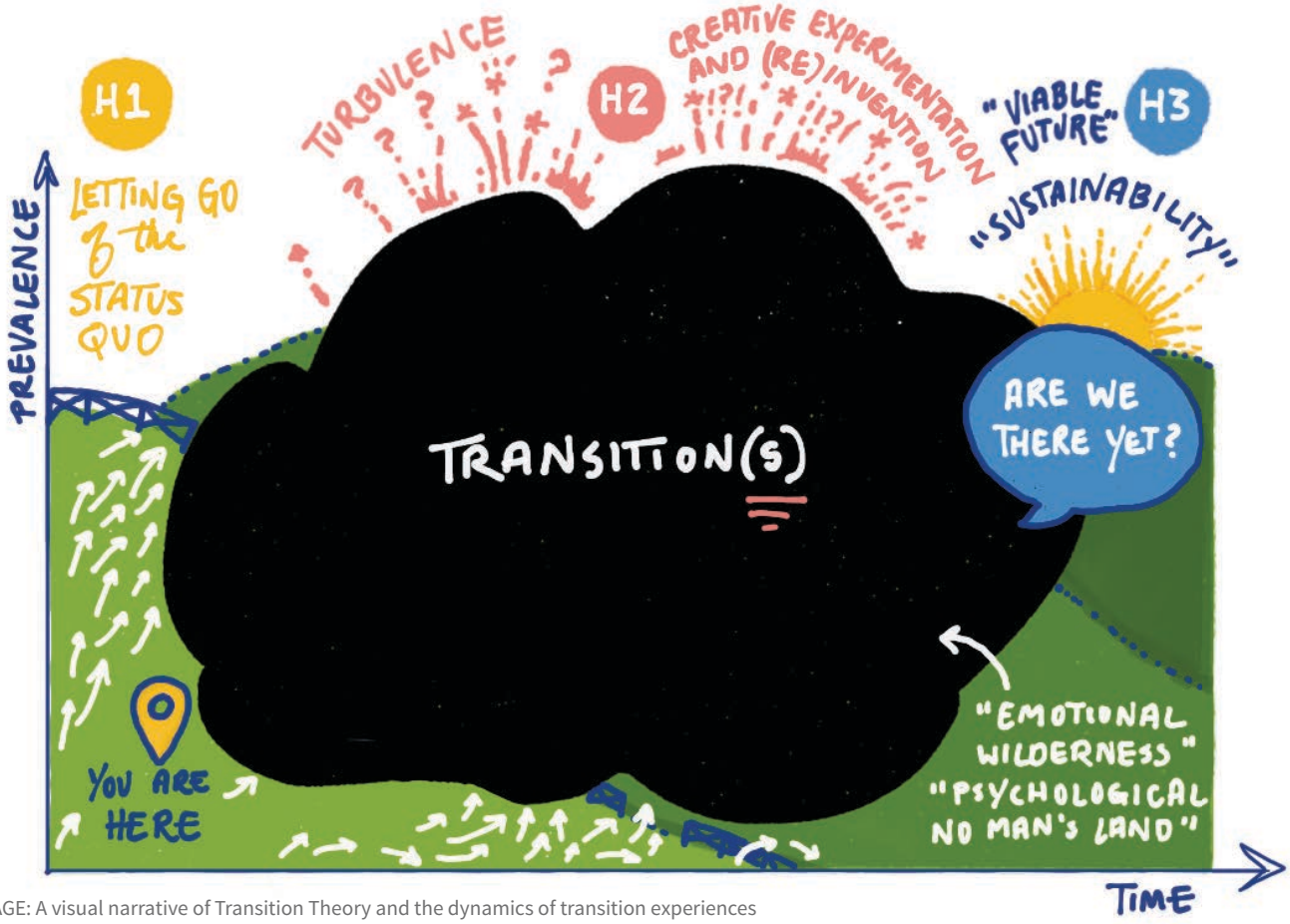


IMAGE: A visual narrative of Transition Theory and the dynamics of transition experiences

Transition Theory

What do we even know about transition, if we've never gotten from *here* exactly (a heap of structurally produced issues cumulatively impacting environmental, social, and economic wellbeing) to *there*, e.g. a viable future where global human activity is regenerative? What can we expect to experience in transition?

Narrating the experience of transitions

The Adaptive Cycle of invention, growth, breakdown, breakthrough, and reinvention underpins most Transition Theory. Three models are compared and combined here in the 'Transition Theory' visual narrative: Geels' MLP, the Three Horizons Framework, and Bridges Transition Model.

Geels' MLP establishes an overview of what's happening between actors and structures to influence change, where niche innovations and emergence influences the dominant regime in an interplay with cultural and contextual shifts in the broader 'landscape'. Niches (small arrows) encounter each other and align into movements that come into friction with the dominant regime (fences).

The Three Horizons Framework and Bridges Transition Model put transition into phases over time horizons, tracking the challenge of letting go of the status quo, the upheaval of change, and the unfamiliarity of the emerging future. We can nurture seeds of the future here today, quoting William Gibson: "The future is already here—it's just not very evenly distributed".

We can anticipate major phases of transition and personal experiences of transition to be disorienting and turbulent, an "emotional wilderness" (Bridges, 2004). We can expect and work to hold space for loss, conflict, and backlash, while working through power dynamics. This is represented by the dark cloud. Carefully tending to the seeds of the future that come to us through niches, disruptive innovations, and grassroots efforts, it is the very disorientation of transition that creates the opportunity and space for the creative experimentation and re-imagination that is necessary to build bridges to a viable future.

The future, once we get "there", turns out to be a sequence of transitions. The axis of time does not carry a promise that transformations will deliver exactly what "we" want. The third horizon isn't utopia, and it could be dystopia depending on your point of view. The horizons connotate the advent of stable new paradigms, but transition is not guaranteed, circumstances will keep changing, and we will have to continue adjusting what it means to regenerate and protect a viable space for humanity. We will keep asking, "Are we there yet?"

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Six dynamics of transition experiences

1. First dynamic: Transition has its own dynamics

Transitions are rife with challenging experiences particular to transitions. Inspired by and drawing from the work of William Bridges, this draft list of the dynamics of transition experiences draws together the rules named by Bridges with dynamics highlighted by Geels' MLP, the Three Horizons Framework, observations from Charles Massy's work, and principles of transformations in living systems. It is my hope that becoming attuned to these dynamics can help us be ever so slightly more aware of what to expect and more likely to allow ourselves to be transformed by the experience. These dynamics point to what we can do, whilst offering us a means to empathize with and have compassion for what we and others experience.

2. Endings are part of transition

Bridges (2004) declares that "Every transition begins with an ending". As "business as usual...[loses] its fit for purpose", transition asks us to let go of the status quo (Wahl 2016). Massy (2017) similarly points to the role of loss and crisis in helping to create the mindset shift required for transition to Regenerative Agriculture. What many don't anticipate (as Bridges explains) is that, even if we choose change, we incur loss—and loss comes with grief.

3. Cycling back to old ways over horizons of time

Following Bridges' (2004) first rule that "when you're in transition, you find yourself coming back in new ways to old activities," and bringing this together with the Three Horizons Framework, we may predict that the past or "status quo" will be with us in some way for a very long time. We can hypothesize, as we transition over horizons, that we will find ourselves and society cycling back to familiar territory, old habits, but also remembering what is vital to keep as sacred from the past—whilst equipped with new sensibilities, dynamics, and resources to meet the moment anew (Bridges, 2004 and 2009; Wahl, 2016).

4. Expect backlash; Transition is not guaranteed

Systems have "allergic" responses to change, with friction and conflict arising as niches encounter the structures, norms, and power of dominant regimes—this is the 'revolt' or backlash aspect of change (Wahl, 2016). Transition theories talk about 'turbulence' and 'upheaval, but don't necessarily convey the risks and the losses. There are diverse actors and power structures at play, each with their own agendas. "Successful" transition is not guaranteed. It is likely that some shifts will occur, but they may not be (entirely) the changes we seek. When transition does occur, the result may look like loss rather than success for many. We also personally resist transition's uncertainties, even when it is something we seek. We may get stuck if we do not reckon with transition (Bridges, 2004).

5. Lost is on track to new ways forward

Eisenstein (2013) describes this in-between stage of "lostness" as the sacred space between stories. Getting lost is what helps us "come home" to the future we seek. The act of being present (presencing in Scharmer) and grappling with the challenge of transition creates a crucible for creative experimentation and reinvention. It this stage that Bridges, Scharmer, Snowden, and Wahl assert is the perfect time for probing, sensing, making, reflecting, re-making, innovating, re-structuring, and re-patterning.

6. Beginnings come after endings

The future, once we get there, turns out to be one in a sequence of transitions. Transition to sustainability is not guaranteed, circumstances will keep changing, and we will have to continue adjusting what it means to regenerate and protect a viable and just space for humanity. We will keep asking, "Are we there yet?" Meanwhile, every horizon brings the wonder of new learning.

7. Everything is connected

Transition eventually involves everyone and everything. Coming back to ecology and laws of nature, John Muir reminds us that everything is connected: "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." Understanding and making decisions based on the interconnection—relationality and wholeness—of everything (Yunkaporta, 2021a), is a advocated by many scholars and First Nations peoples (Mollison, 1988; Scharmer, 2009; Kimmerer, 2013; Suchet-Pearson, 2013; Wahl, 2016; Yunkaporta, 2019, 2021a, and 2021b; Cultural Survival et al., 2020; Bortoft, Goethe, and many more).

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Comparing theories—more detail

The three transition models cited here all underscore that change is not linear, but that shifts occur over time where changes take effect.

Geels' MLP framework provides a narrative of the interlinked causal factors that create change in the status quo of socio-technical regimes and paradigms. Geels also helps us conceptualize how a dominant paradigm is comprised of many independent but interdependent components, all of which have to shift in some way for change to occur. This narrative underpins most transition theory, offering a guide to the dynamics at play.

The Three Horizons framework and the Bridges Transition Model put transition across time horizons. Calling out horizons helps us better conceptualize the time element and even visualize Geels' changing landscape. The metaphor of horizons over a landscape is an accessible idea, helping us to imagine the longitudinal experience of transition.

The phases of the Three Horizons Framework and the Bridges Transition Model have parallels, even though the Three Horizons Framework tracks transition at a societal level and the Bridges Transition Model tracks transition at personal and group levels. They both describe how transition follows a sequence of simultaneously occurring yet dependent phases that re-balance in prevalence over time, and that achieving transition is a result of reckoning with the transition itself.

The Bridges Transition Model draws out the psychological experience of transition and, given the parallels with the Three Horizons Framework, I postulate that the personal and group psychology described in Bridges will have parallels at societal and cultural scale, thus making the Bridges Transition Model relevant to Transition Theory. Likewise the four rules of transition that Bridges defines (cycling back to old ways; endings are the first phase of transition; expect yourself to resist transition; and that endings have to come before beginnings—with a fallow or neutral zone of lostness in between) also scale up, as discussed in 'Six Dynamics of Transition experiences'.

The "psychological wilderness" and "emotional no-man's land" in Bridges describes the black hole that is the unknown of transition phases. It seems we can expect transition to be tumultuous, with the advancing, growing, adapting niches mixing with elements of the dominant regime. All models agree that it is the in-between zone, the mixing of niches and regimes—like the "brackish water" where freshwater floods meet salt water—that is the most fertile zone for re-imagining, experimenting, and re-making (Yunkaporta, 2019).

Relevant transition theory literature

This section gives an overview of relevant models and frameworks that examine how transition occurs.

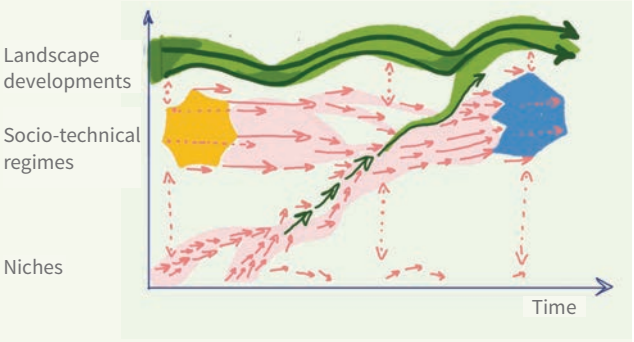


IMAGE: Multi-Level Perspective. Redrawn from F.W. Geels (2002).

Multi-Level Perspective (F.W. Geels)

Multi-Level Perspective (MLP) is one of the most widely cited transition models, conceptualizing transition as the interplay between niches, the dominant regime, and the broader contextual landscape, as Gaziulusoy (2018) observes, *"It would not be an exaggeration to state that MLP is the most commonly used theoretical model and analytical tool in the field. MLP explains system innovations and transitions with references to three dynamically interactive levels: i.e., the landscape level at the top, the socio-technical regime level in the middle, and niche innovations at the bottom level of a nested hierarchy*." Dahle (2019) steps out how change comes about according to MLP: *"Geels (2005) and his colleagues theorized that change unfolds through a system as niche activities, like demonstration pilots and disruptive companies, find some traction, and begin to affect the formal processes that are part of a system, for example, business supply chains. Over time, the changes embraced in formal structures lead to changes in mindset and/or the broader social landscape and context*." This model calls attention to the importance of niche activity—which could be called 'grassroots' or 'bottom up'—and how niches influence, and are influenced by existing power structures and a changing environmental, societal, economic, and technological context.

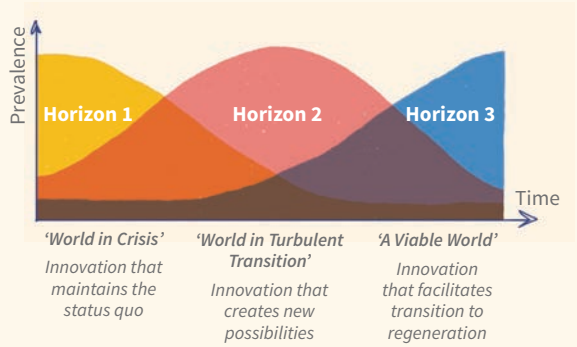


IMAGE: Three Horizons Framework. Redrawn from Wahl (2016).

Three Horizons Framework
(Hodgson, Sharpe, Curry)

Wahl provides an overview of this framework developed by Hodgson, Sharpe, and Curry: *"The 'Three Horizons' framework is a foresight tool...a versatile methodology for inviting people to explore the future potential of the present moment through a number of perspectives that all have to be considered if we are to steer our course wisely into an unpredictable future"* (Wahl, 2016).

Horizon 1 signifies the 'world in crisis', and innovations that maintain the status quo. Horizon 2 *"represents...the entrepreneurial and culturally creative space of already technologically, economically and culturally feasible innovations that can disrupt and transform H1 to varying degrees..."* (Wahl, 2016). Not all H2 innovations change the status quo, but some 'disruptive innovations' can be thought of as a possible bridge from H1 to H3.

According to the Three Horizons framework, we never truly reach and maintain H3, a 'viable world'. Firstly H3 is not the end, rather a new H1—*"the pilgrimage towards a sustainable and regenerative future has an endless string of false summits"* (Wahl, 2016). Furthermore, *"there is no arriving at and maintaining an H3 scenario forever"* (Wahl, 2016).

The Three Horizons framework preferences "*solutions that create conditions conducive to life and establish regenerative patterns*" (Wahl, 2016).

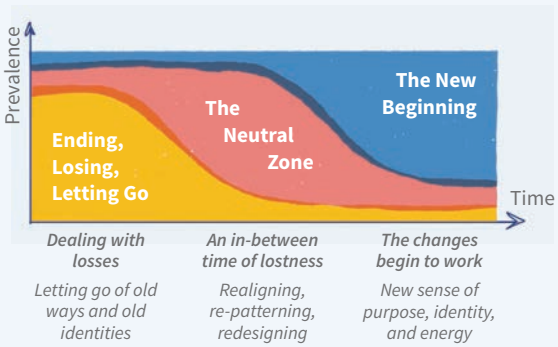


IMAGE: Bridges Transition Model. Redrawn from Bridges (2009).

Bridges Transition Model (W. Bridges)

The Bridges Transition Model comes from the work of William and Susan Bridges in personal and organizational change. Bridges sets out three overlapping phases of transitions and four rules of transition. Phases: 1) Endings; 2) The Neutral Zone; 3) New Beginnings. Bridges explains how the psychological experience of transitions is counterintuitive at each stage.

The idea that transition begins with an ending catches people by surprise—we have to let go of the status quo (H1). In new beginnings, rather than stepping into a shining new world with ease, Bridges describes people experiencing discomfort and even chaos 'coming home' to the future.

Bridges names the in-between phase the 'Neutral Zone', which turns out to be anything but neutral. Bridges describes the Neutral Zone as a deeply confronting "psychological no-man's land...a kind of emotional wilderness". And it is this very poetic darkness, this sacred space between stories (quoting Charles Eisenstein), that is the space for probing, reframing, innovation, and experimentation, just as in H2 of the Three Horizons framework.

Each step to restructure and reorder our lives is a step to further embed new behaviors and identities. When we come to the horizon of the New Beginning, we can see that there is more to do in order to reach our intended goals—just as described in H3 of the Three Horizons. But Bridges reassures us that because we have reached that new horizon that we will have the energy, resources and mindset needed for the next horizon.



Process

About "process"

Curiously, designers use the words "design" and "process" interchangeably. Designing *is* the process. Designers talk about being "led by the process" and "trusting the process". When pressed for more detail, design is set out as phases. The 'double diamond', a frequently cited process version developed by the Design Council UK, offers four phases to help communicate design: discover, define, develop, and deliver. Meanwhile, designers insist that design is not linear, as represented by another famous depiction of design process as a scribble which eventually becomes a line (Onø Design). Transition Design founders emphasize that it should be thought of as an "approach" rather than a process to underscore flexibility and adaptation instead of rigid and linear interpretations (Irwin, 2019).

Designing through core activities...

This version of process sets out six core activities: Initiate, Situate, Envision, Respond, Harvest, and Reframe. Process can be both sequential and cyclic, and some of these activities can be undertaken at *almost* any time. These activities, once commenced, may occur throughout the life of the initiative or be repeated at intervals.

Initiate and Harvest activities are starting and ending points, or milestones. Initiate activities are critical to building trusting relationships, and they take as long as they take. Initiate activities are not meant to be treated as a list of items to be ticked off, but as a vital and precious time for demonstrating respect and developing the willingness, capacity, and trust needed for working together. Allow generous time and space for Initiate activities.

For an example of what might be involved in Initiate activities, particularly when working with communities and/or complex collaborations, refer to Collaboration for Impact's 'Collaborative Change Cycle' (accessed via Platform C, 2023). For discussion of engaging with Indigenous peoples, refer to Tyson Yunkaporta's book, '*Sand Talk: How Indigenous Thinking Can Save the World*', Clare Land's book '*Decolonizing Solidarity: Dilemmas and Directions for Supporters of Indigenous Struggles*', and Linda Tuhiwai Smith's book, '*Decolonizing Methodologies: Research and Indigenous Peoples*'. If considering meaningful co-design with marginalized people and families, refer to Kelly Ann McKercher's book '*Beyond Sticky Notes—Co-Design for Real: Mindsets, Methods & Movements*'.

Harvest activities are often a matter of timing. A group may come to the end of a project or their funding, or may have completed a big phase of work. But Harvesting is also an activity that helps support others to be aware of and engage in work. The feeling for when Harvesting is needed or may be beneficial is a skill that is built with experience.

As mentioned, these activities may be undertaken in patterns or sequences. For instance, Situate-Envision-Respond is a common sequence, but these three particular activities could be done in any order in the right context. Initiate and Situate activities sometimes occur together, complementing and facilitating the other.

...in cycles, over horizons of time

These activities may be undertaken more than once during a process, but they also tend to occur in cycles. A group may undertake multiple cycles of these activities in one project. Multiple projects over time may also form cycles through which knowledge is built cumulatively. A collaboration may be involved in an 'ecosystem of responses', and so the aggregate of initiatives may have their own cycles and horizons. Horizons of time, marked by changes that occur in context, also shape the cycles of activities undertaken. [See next spread for images].

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...bounded and anchored by framing

What gives design its rhythm is a pattern of framing and reframing through cycles of these activities. Designing is bounded and anchored by frames and driven by the generative way we frame and reframe to find a fit—a 'click'—between situation, vision, and response (Dorst, 2015). The extent to which frames are deliberately held, inspected, and treated as malleable builds capacity for innovation and change making.

Design is an Adaptive Cycle

The Adaptive Cycle and Panarchy models describe ecological processes of change and transformation. An Adaptive Cycle is: *"a model of natural patterns of change in ecosystems and eco-social systems. It consists of four distinct phases: 'growth or exploitation' (r); 'conservation' (K) of established patterns and resource distribution; 'collapse or release' (Ω); and reorganization (α). The Adaptive Cycle...is often drawn like an infinity symbol or Möbius loop that joins these four phases" (Wahl, 2016; citing Gunderson and Holling, 2001).* The Adaptive Cycle expresses cycles of birth, growth, death, decay, composting, and renewal. A Panarchy is a stacked or 'nested' set of Adaptive Cycles that scale from the micro to the meso, macro, and meta. The term 'Panarchy' comes "from the Greek god Pan representing the unpredictable and elemental forces of nature" (Baumber, 2012). The Adaptive Cycle and Panarchy models explain and help us navigate transitions as ecological processes.

It is not just that Transition Designers should be aware of Adaptive Cycles; design *is* an Adaptive Cycle. Consider the tiniest cycle of sketching out an idea, sitting back in your seat to have a look at it, crumpling it up, and making a different version—informed by what you learned in that set of steps. In those few minutes, you demonstrated the Adaptive Cycle by crystallizing your thinking into an idea you could sketch then elaborate (growth), tinkering with it for the short time that you were still happy with it (conservation), shedding the idea to make room for the new version of the idea that emerged (breakdown / release), and then working through a new series of sketches to get your new idea working (reorganization). The idea you are holding, your concept, is akin to the 'stable state' which is either responding with resilience or being transformed into a new concept (a new stable state).

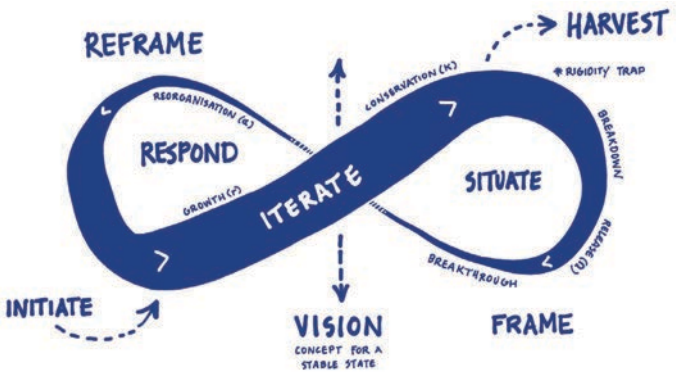


IMAGE: Design as an Adaptive Cycle
(Adapted from Gunderson and Holling, 2002)

This pattern holds for design activities and processes at other scales—including Transition Design. In transitions, the Adaptive Cycle pivots around a vision for society, the stable state. As that vision proves flawed or insufficient, it begins to crumble. Different actors, moving at different speeds, begin to (re)situate within the rapidly changing (collapse) context. As actors begin to get a sense of an alternative preferred future they reframe and respond in new ways to bring about that future, reorganizing in niches and reconfiguring the regime, working to articulate and grow the resilience of those visions in the power grab to anchor a new stable state. It is into this complex adaptive dynamic that Transition Design seeks to intervene in different ways appropriate for each stage to catalyze systems change.

In this version of a Transition Design approach, I have spatched together—with the deepest respect—the work of: Terry Irwin, Gideon Kossoff, Cameron Tonkinwise, Tyson Yunkaporta, Daniel Christian Wahl, Donella Meadows, and Donald Schön; Andrew Curry, Anthony Hodgson and Bill Sharpe's work on the Three Horizons Framework, Otto Scharmer's Theory U, the William Bridges Transition model, Dave Snowden's Cynefin Framework, Kees Dorst's Frame Innovation, Cheryl Dahle's Future of Fish case study, Collaboration for Impact's 'Collaborative Change Cycle', Tony Golsby-Smith and Second Road's Thinking Wave and AcdB method, and Madeline Sides, Hillary Carey, Erica Dorn and Noah Theriault's take on three types/themes of action in Transition Design; and the work of Lance Gunderson and C.S. Holling.

Further reading on Process

Theory U and Social Labs

place-based Collective Impact

Deliberative Democracy example: the Lewis method

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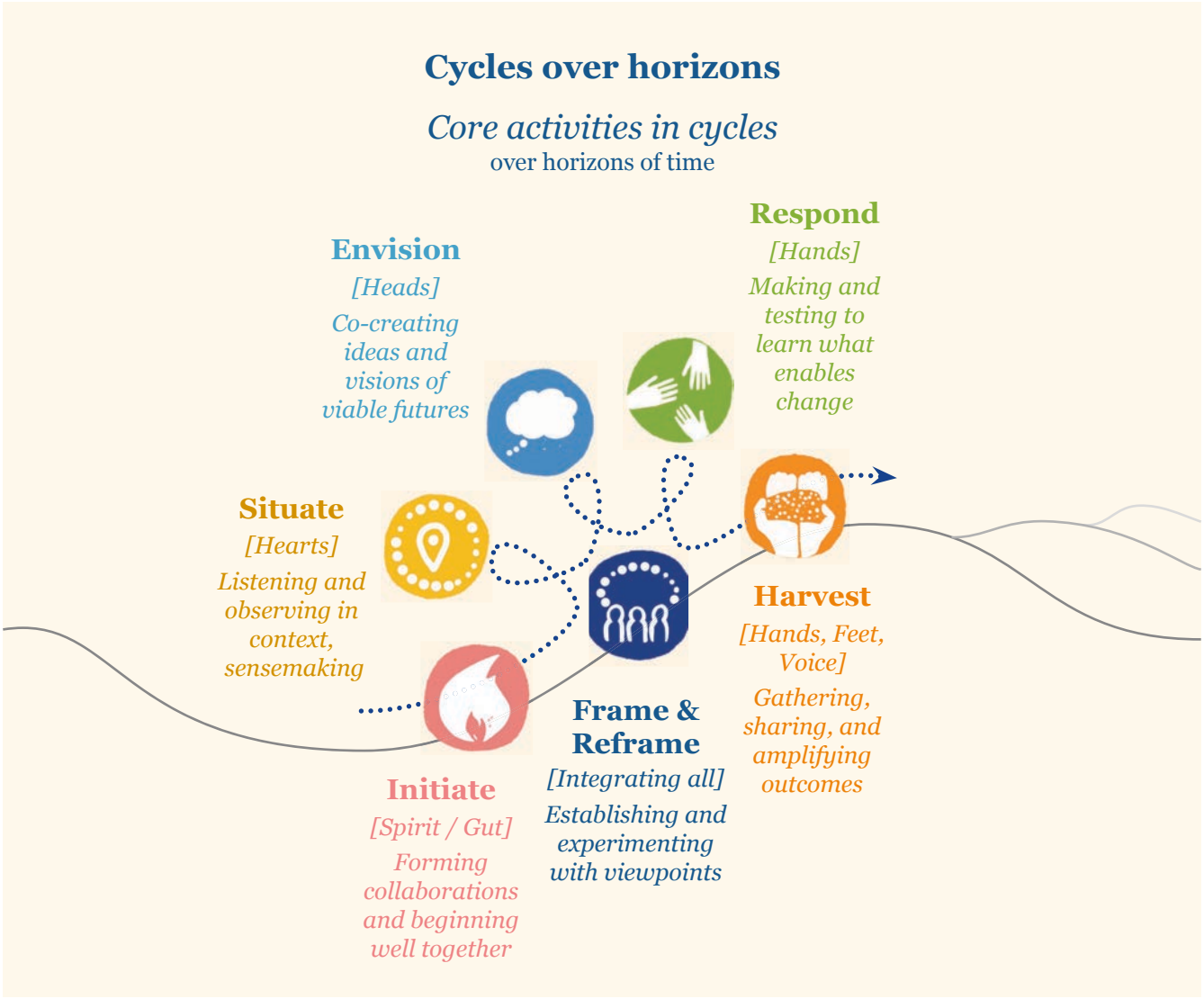
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Process Cycle

One sequence or cycle of potential activities
(Lucky / Scribbly Gum version)



"Muddling through"—cycling through collective inquiry, imagination, and experimentation, putting creativity in service of the future, to bring about transition together—*in place*.



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IMAGE: Regenerative grazing example during drought with reduced stock, South East New South Wales (2019). With farmer David Marsh.

Protocols for practice

How do we translate theories of transition into action? Having a process or approach plus a collection of methods gives structure and activities that can be undertaken. *How* we work matters as well. There are often mindsets, postures, protocols, and principles underpinning personal, group, and organizational activities, whether explicit or implicit, and they shape how we work together. Working explicitly with them can help collaborations be more effective. So, what ways of working help promote the goals of transition?

What are protocols?

Protocols are cultural norms that guide behavior, engagement, and communication. Protocols for different contexts are filtered by the values, ethics, and principles that we personally hold and/or the cultural context we are operating in. First Nations peoples, for instance, have protocols of respect for introduction, acknowledgment of country, roles, and boundaries that may be unfamiliar to people who are not from those cultures.

Protocols originate from the intent to live in accordance with values and goals. How we manifest our values, ethics, and principles are choices. Collectively, we as societies, organizations, families, etc. preference certain cultural norms as representations of our ideals and goals. These preferences become protocols for behavior and communication, and each culture has its own protocols.

For instance, as a sign of respect for others and a signal of being organized and competent, some cultures place high importance on timeliness and punctuality. Other cultures may have different ways of showing respect, and a different relationship with time.

As cultures change, protocols can remain attached to previous values and generations of people. Protocols can also cause unintended consequences. Work cultures that focus on innovation may value playfulness and hold ‘safe to fail’ protocols. Without balancing protocols of learning and accountability, for instance, ‘safe to fail’ cultures can become places where no one discusses issues or merit.

What are principles?

Principles are fundamental truths or propositions that form a basis for beliefs, behaviors, or lines of reasoning. As an example, the case study identified three principles that define ‘regenerative’. An approach is regenerative when it is holistic and works with nature, and is regenerative in ends when it is regenerative in means.

Defining practice protocols & principles

Negotiating protocols in early stages and establishing processes for attending to them over time–doing regular ‘housekeeping’ to make sure they are working—can help groups navigate working together.

In the image, ‘Shaping your own Practice’, consider the principles of regeneration from the case study and examples of protocols of collaborative practice. Which of these feel particularly relevant? What would you add? How would you translate them into your own work and into the work of different groups you are involved in?

Shaping your own **Practice**

Consider the below principles of regeneration, from the case study, and the examples of protocols for collaborative practice, drawn from literature and best practice.

What might these principles mean, in practice? What protocols might guide your approach?

Principles of **Regeneration**



Holistic. Governance by wholeness



Working with nature and the self-renewing properties of life



Regenerative and just in means and ends

Examples of **Protocols for Collaborative Practice**



Relational. Start with connection, convening, initiating



Respect cultural protocols, honor and bridge cultures



Learn what is needed to build trust and relationships over time



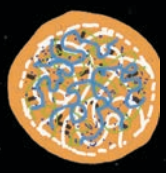
Honor gifts; take strengths-based approaches



Transparent, respectful, and open communication



Enable self-organizing, build on momentum, capacity, and capability



Interact and diversify. Engage with different people and groups



Tend to individual and group reflection. Keep experimenting, learning and adapting



Take care of yourself, and check that others do the same



Know where the boundaries are; work within limits

SOURCES:

Meadows, D. (1999). Leverage points. Places to Intervene in a System, 19.

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Schön, D. A. (1968). The reflective practitioner. New York.

Yunkaporta, T. (2019). Sand talk: How Indigenous thinking can save the world. Text Publishing.



IMAGE: Sheep blocking the farm gate as I go to drive home after a few weeks of interviews (January 2019). Wiradjuri country.

Decision-making

Decision-making at the scale of transition has its own dynamics. Sometimes decision-making dynamics are shaped by the structure of industries, like the decentralized agriculture sector versus the centralized energy sector. Decision-making at scale is also shaped by leadership, political cycles, public sentiment, and social license.

Decision-making with groups

Collaborations require groups to decide how they will decide. Which decisions can be made by a single individual? Which decisions need to be made together? *Who* gets to participate in decision-making? How will the group decide? Consensus, majority, consultation, blind voting, etc.? Working through these decisions about decision-making when a group forms helps to establish group norms, but the protocols for decision-making need to be re-visited periodically as part of group housekeeping.

Decision-making criteria

Design disciplines have their own decision-making practices, including during the early days of concepts when potential is difficult to discern. For instance, designers are trained to participate in critiques, and although the word may give some people a shudder and has been replaced in some contexts with the Agile concept of “showcases”, the habit of having to regularly defend your decision-making attunes designers and teams to their design rationale and criteria. Teams often set up design criteria at the beginning of projects, which helps mitigate the risk of falling down the rabbit hole of opinions and “taste”.

Different design criteria are used in different situations. The criteria of desirability, viability, feasibility, and usability are a famous example. An organization’s vision, mission, and purpose can guide decisions. When evaluating the quality of emerging designs, designers talk about intangibles like whether or not the design is congruent, elegant, and generative. These are defined as:

- Congruent: self-similarity; ends and means aligned; all parts belong to the same whole
- Elegant: aesthetically pleasing, no more complicated that it has to be, no more simple than it can be, and complex in its simplicity
- Generative: the idea has energy, leads to more ideas, seems to “design itself” and “has a life of it’s own”.

These last three criteria—congruence, elegance, and generativity—are very interesting for Transition Design practice because they speak to the same ecological criteria as the principles from the Regenerative Agriculture case study: holistic, working with nature and the self-renewing properties of life, and congruence between means and ends.

These are a starting point only—further research and development is required for decision-making approaches and criteria in Transition Design.

There is a decision-making framework used in agriculture that may apply to Transition Design: the Holistic Decision Framework, taught as part of Holistic Management practice—which is commonly known for practices like high-density, small cell, rotational/ration grazing.

Opportunity to adapt the holistic decision-making framework for transition

My very first on-farm interview was a bit of luck. An interviewee ended up not being able to meet me and, by way of apology, introduced me to a friend. This other friend was a well-known early adopter of what later came to be known as Regenerative Agriculture. The farmer generously gave me a tour of his property, master plan, and grazing charts, orienting me to what I was seeing. When I asked about how farmers can be confident in their decisions, he stopped the ute, opened his glove box, and pulled out a well-creased copy of the 'Holistic Management Framework', originally from the book 'Holistic Management: A New Framework for Decision Making' by Allan Savory and Jody Butterfield. During the project that happened *three* times.

Interviewees talked extensively about the importance of having the framework to support their decision-making, sometimes reporting that this was even *more* valuable than the farming practices taught in holistic management.

The Holistic Decision Framework is relevant to Transition Design because it is used in complex, adaptive contexts where consequences play out over long horizons. There is precedent for adapting it into other contexts, for instance in the work of the late Dan Palmer.

A starting point to adapt the framework would be to work through it with a collaborators, for instance:

- The 'Whole Under Management'—the System in Focus
- Holistic Goal—outcomes, including quality of life
- Ecosystem Processes—social, ecological, economic, and technological system structures, processes, and dynamics at play
- Tools available for addressing the situation—the range of possible actions and responses
- Testing Questions—your design criteria and testing protocols for any prototypes and pilots
- Management Guidelines—protocols for each person's role and activities of the group
- Planning Procedures—what is your Transition Design approach (process) and what are your related sub-processes for planning, coordination, etc.?
- Feedback Loop—How will you gather and evaluate feedback? How will you conduct group reflection and decision-making?

A completed holistic decision framework would set out a strategy and 'standard operating procedures' for a group, providing the ground rules for group processes and decision-making, and setting the group up to further develop your Theory of Change and Theory of Action.



SOURCES

Savory, A., & Butterfield, J. (1999). Holistic management: a new framework for decision making. Island press.

Practice catalogue

This section summarizes the roles Transition Design can contribute to, and related methods, capabilities, and pathways for collaborative action. It also provides a summary of the elements of the Elements of Practice framework set out in this guide.

Elements of practice framework—a compass

Constructed in two halves, Theory of Change and Theory of Action, the Elements of Practice framework includes the following sections:

Futures
- Visions and narratives
- Pathways for transitions

Responses
- Opportunity areas
- Changes and experiments—which can take innumerable forms: campaigns, processes, projects, businesses, services, and more
- The sum of responses should form an Ecosystem of Responses and link into and help amplify other Ecosystems of Responses

Approach
- Formats—mechanisms and vehicles for experimentation and collaboration (at right)
- Process, including design as an Adaptive Cycle
- Underpinning methodologies

Practices
- Including specific methods and activities
- Tools, outputs, and artefacts
- Skills and capabilities

Way of working
- Postures/stance, mindsets and protocols

Iteration and evaluation
- Pursuing feedback, reflection, and learning
- Iterating and refining over time
- Including evaluation as needed

Context
- Explicitly placing the Theory of Change and Theory of Action within the transition context

Roles for Transition Design

The Transition Design framers name three areas of practice for Transition Design: "(1) narratives and visions of the future... (2)...amplify and connect grassroots efforts and projects... [and] (3)...work in transdisciplinary teams to design new, innovative, and place-based solutions..." (Irwin et al., 2015). In *'The Reflective Practitioner',* Schön (1983) describes a need for practitioners to help facilitate processes of cooperative societal inquiry, and that role is included here.

Transition Design is uniquely positioned to bring together skills for discovery, reframing, invention, and experimentation to play a role in supporting groups and society at large in transition efforts. Transition Design has a role in the following:

- Cooperative societal inquiry for a sustainable future— I imagine societal inquiry to be a collective act of exploration that involves making the activities of listening, imagination, experimentation, reflection, and reframing accessible at scale, inviting people to participate in numbers. Transition Design can help facilitate collective exploration by finding ways to engage people at scale in Transition Design processes and activities, and by making those processes and outputs visible, e.g. through social media, campaigns, and other ways of communicating. Transition Design can influence *what* people see, and support people to experiment with *how* they see things
- Developing narratives and visions of the future, and for transition as well—helping groups, communities and our society at large better "see" a regenerative and just future as well as how we might get there
- Amplifying and connecting grassroots efforts and projects by weaving people together and supporting them to explore ways to mature, spread and scale their efforts
- Designing responses—facilitating and contributing to the development of new, innovative, and place-based responses

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Methods, Tools, and Outputs

Examples of methods and tools:

- Data collection and discovery—including methods like semi-structured interviews, "rigorous hanging out" and observation, focus groups, surveys, generative tools and methods, critical design ethnography, literature review, and any methods under the category 'design research' together with social research and scientific research
- Sense-making—through analysis and synthesis, visual synthesis and mapping, including systems sense-making and mapping
- Framing—as a skill and a process. For examples of framing process, refer to Dorst's book 'Frame Innovation' (2015)
- Futuring—practices like visioning, backcasting, scenario modeling, and critical design futures; developing futures visuals, illustrated and written narratives, and conceptual 'provocations'
- Invention and idea development—through co-creative and generative activities. May draw on tools from service design, strategy, and entrepreneurship (etc.)—like service model blueprinting, Lean Startup, and Business Model Canvas
- Materializing change, particularly through prototyping—sketches and paper prototypes, tabletop prototypes, interaction prototypes, online prototypes, functional models, live prototypes. Trials and pilots. Anything can be prototyped: interactions, services, policies, processes, businesses, etc.
- Media, art and culture—via mediums like films, videos, books, magazines, art, theatre, music, campaigns, social media, and social 'sculpture' (performative demonstrations)
- Group facilitation and deliberative democracy methods—refer to resources like the Lewis method of Deep Democracy, 'The Handbook of Large Group Methods' by Bunker and Alban (2006), the 'Facilitator's Guide to Participatory Decision-Making' by Kaner (2007), and the NCDD website, https://www.ncdd.org
- Participatory decision-making—perhaps through dialogue, debate, consensus, and/or voting. Consider experimenting with the Holistic Decision Framework.
- Reflection, learning and evaluation—through reflective practice, enable iteration over time

Collaboration formats and strategies for amplifying what exists

Collaboration for transition initiatives requires some sort of container or mechanism to hold and give shape to collective action. Formats, backed by legal entities, are often the "thing" that can be funded.

- Workshop series
- Projects and programs
- Social Labs (Hassan, 2014), Living Labs
- Innovation Funds, Incubators and Accelerators
- "Sandboxes" - regulatory, policy, legal, and commissioning agreements that have settings to enable and facilitate experimentation
- Cooperatives and collective action—including "backbone" organizations (see Collective Impact)
- Platforms, networks and peer-to-peer models
- Movements and campaigns
- Catalyst models - for systems change incubation and amplifying the work of change makers (see Dahle, 2017)
- Personal practice and life projects (self-funded)
- Education studios

Skills and Capabilities

Transition Design draws upon skills from design as well as from systems thinking, strategy, community development, and more. Collaborations also require skills relevant to the topic area and the responses being designed. Key skills and capabilities:

- Connecting and weaving relationships; communicating, bridging and being an ambassador
- Leadership and entrepreneurship
- Integration—supporting transdisciplinary and participatory sensemaking, framing and synthesis
- Process, including facilitation—designing and facilitating group dialogue and deliberation
- Inventiveness, creativity, imagination, ingenuity
- Producing changemaking propositions—Technical skills for "making" and knowledge of "the system in focus"; technology skills
- Design experimentation, prototyping, testing
- Understanding of ecology and living systems

Transition Design also seeks to learn from and acknowledge the wisdom and knowledge that First Nations peoples are open to sharing and contribute to sustainability efforts.

Examples of practice in this field guide

Imagine: Regenerative futures for agriculture



'(Re)braiding Rivers' Vision for Transition



Transition Theory visual narrative



Theory of Change for Regenerative Agriculture transition

Theory and Methodology

Futures

Approach

Ways of working

Responses

Practices

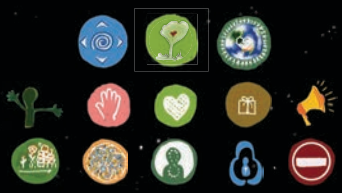
Adaptive Cycle



Cycle of Activities



Practice protocols and Design stance





Opportunity Areas

Tools
for example



Farm transition strategies



Personas



Systems mapping



Generative processes and tools





Responses
Compost as a Catalyst, Rewilding Moore Park, TransitionAg, Local Learning Labs



Design provocation

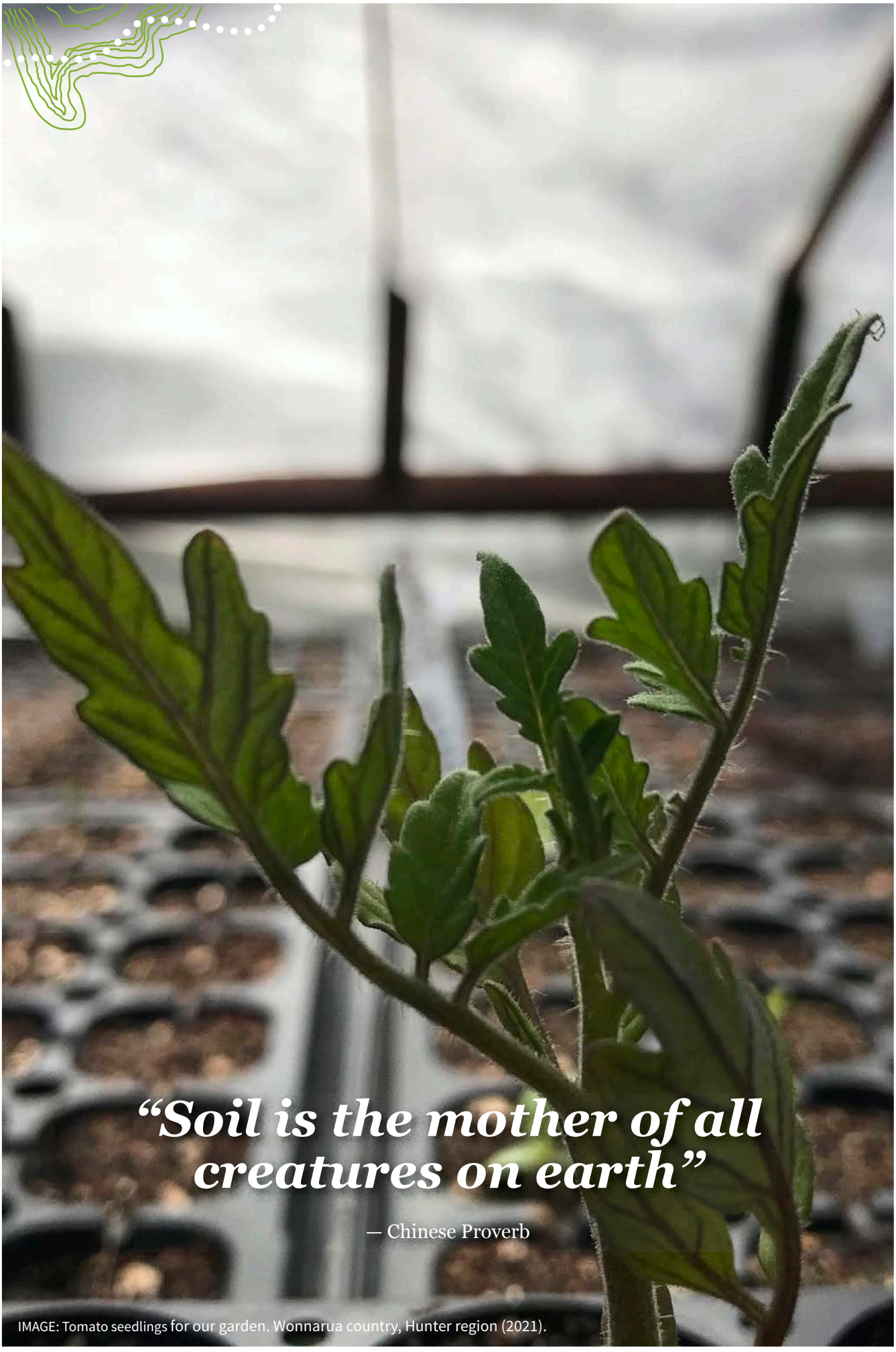


Decision-making frameworks and design criteria

PART 2: CASE STUDY

Designing Regenerative Transitions in Agriculture





“Soil is the mother of all creatures on earth”

— Chinese Proverb

IMAGE: Tomato seedlings for our garden. Wonnarua country, Hunter region (2021).

SECTION 1

Context





PHOTO: January 2019 (summer), leaky weir during drought. South East New South Wales, Australia. Mixed cropping and grazing. Regenerative management practices helped retain water and moisture in the landscape through the 2017-2020 drought. Water from this property was used to help fight catastrophic bushfires in 2020.

PART 2: CASE STUDY—SECTION 1

Context

Identifying a suitable transition project

Working on viable futures means wading into complex social, political, economic, technological, and ecological systems challenges that manifest in ways unique to places and cultures. In Transition Design, designers join in collaboration across disciplines and the many parts of society to work on these complex and interlocked challenges, putting collective sense-making, imagination and experimentation in service of regenerative and just futures, and how we transition from *here* to *there*.

Transition Design projects:

- Seek to catalyze systems change
- Involve transdisciplinary and multi-stakeholder collaboration
- Envision regenerative and just futures and then look for practical, tangible ways to contribute to transition

In Transition Design, the designer-researcher is an active change agent, seeking ways to influence change. In this case study, I narrate the project through my first person experiences as a designer seeking to support farmers and the sector more broadly to transition.

Focusing on Regenerative Agriculture

This case study is in fulfillment of PhD research into Transition Design *practice*—exploring what it means to do Transition Design in a real transition context. It is my story of getting to know the agricultural sector in my state, and working with others to influence change.

Like most PhD research, my topic changed a few times. I arrived at agriculture after some soul searching a couple setbacks, asking myself what I cared about most. The long term viability of agriculture and vitality of the environment is very close to my heart, sacred to me.

In the first iteration of my research question, I identified

governance of ecosystem services as a potential project topic. However, the feedback I received in a first round of interviews revealed that ecosystem service governance was still conceptual, and there weren't many regions engaging with the idea near me.

But there was growing interest in Regenerative Agriculture. It had been around in various forms for nearly 30 years, and uptake was slow but it was gaining traction. This was early in 2018 and Charlie Massy had just released his book, *'Call of the Reed Warbler: A New Agriculture, a New Earth'* in 2017. I was pointed to this challenge and opportunity.

Meanwhile, Australia is home to the oldest continuous living culture on the planet. Aboriginal and Torres Strait islanders have been here for 65,000-80,000 years, depending on the source. Their worldview, cultures, and practices ensured ecological resilience in ways that other cultures have not.

Poet Dorothea Mackellar put to words the beauty and the vicissitudes of this "sunburnt country",

> *"...A land of sweeping plains,*
>
> *Of ragged mountain ranges,*
>
> *Of droughts and flooding rains..."*

The time from 2017 to 2023 has seen "regenerative" become a global, cross-sector phenomenon. Will the term "regenerative" follow the same fate as so many buzzwords and trends, painfully falling into disuse or abuse after so much energy and hype? Or will it have a more enduring role in agriculture? Will it translate into changes in our relationship to the environment, our planet, and each other? That is entirely up to us.

The purpose of this Transition Design project was to identify what it takes to transition to Regenerative Agriculture, and what it might require for our agriculture to contribute to global regeneration.

2017-2023: Challenges for agriculture in New South Wales, Australia

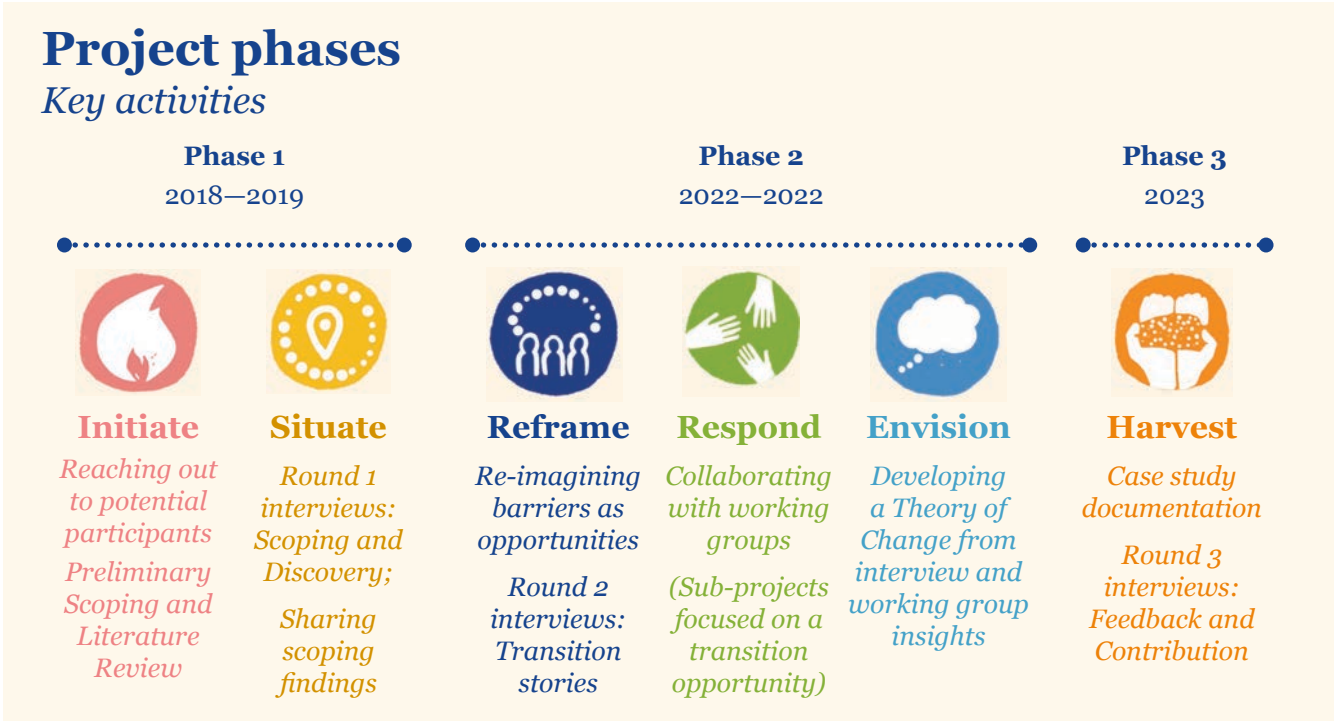
Drought, dust, bushfires, and floods

This research was conducted from 2017-2023, amongst some of the most challenging conditions on record. Industry NSW reports that: "The 2017-2020 drought was the worst over the historical record from the 1890s until now for most river valleys across NSW, with some more impacted than others." Many farmers, seeking to minimize damage to the landscape, sold off stock. The summer from the end of 2019 to 2020 saw catastrophic bushfires across the continent. News outlets reported that "Australia was burning".

In Australia, legend holds that droughts are followed by flood. Multiple cycles of La Niña 2021-2023 delivered repeat flooding at unprecedented levels across the state, which is 1.15 times the size of Texas, as well as in the neighboring states of Victoria and Queensland. Some areas flooded catastrophically more than once, with the Lismore area flooding twice—and one time at 2 meters higher than previous recorded floods. The Varroa mite, a honeybee parasite, was discovered in a sentinel hive in Newcastle, NSW in 2022, leading to the euthanization of more than 13,000 beehives in the state.

It's an understatement to say that growing conditions haven't been ideal in many parts of the state for much of 2017-2023. Food production has been compromised in many areas. Meanwhile, a global pandemic and war in Ukraine disrupted supply chains and economies around the world.

PHOTO: January 2019 (summer), dust storm in drought. Central West New South Wales, Australia.



Project phases

Phase 1: Initiate and Situate

Phase 1 began in January 2019, traveling around my state of New South Wales (NSW) in a campervan named 'Fish'. I visited 12 properties, of which 8 used regenerative methods. 32 people met with me, and 25 agreed to participate in semi-structured interviews. Because I was unknown to the sector, many people wanted to meet me first, hear about the research in person, and then decide if participation was right for them.

This first phase involved a preliminary round of scoping and discovery. Through semi-structured interviews, I tested the research question and, as the potential became clearer, tested the viability of a project focused on Regenerative Agriculture transition. I compiled the findings of preliminary scoping and discovery into a report and presentation on barriers and opportunities for transition, as identified by participants, and obtained their feedback.

The semi-structured interviews and feedback on findings was just a beginning. To research Transition Design in practice, I needed a project in which I could actively contribute to Regenerative Agriculture transition as a change agent. This approach is referred to as 'action research'.

The process of sharing the scoping findings gave me a way to build relationships and seek out projects—to 'initiate' the potential for working together. Holding onto the idea that systems change requires an ecosystem of responses, I sought out diverse opportunities at different leverage points—or 'acupuncture points'—across the sector, looking for projects that might contribute to transition to Regenerative Agriculture.

Over time, a number of collaborative opportunities emerged that met the criteria for potential to contribute to transition. Some opportunities turned into projects, others never fully materialized. Some collaborative opportunities that I never expected arose over time. The elapsed time for the Initiate phase and for the research overall also effectively resulted in ethnographic-type immersion with the local agricultural community.

Phase 2: Reframe, Respond, and Envision

The second phase was when the bulk of the project work was undertaken. Seeking a number of transition 'acupuncture points', I got involved with a diverse range of opportunities and continued interviews. You might suspect this already, but to my genuine surprise, seeking an "ecosystem of responses" meant I quickly found myself involved in more than I could realistically contribute to. It was a good sign for the need for a focus on transition, but proved tricky to manage. Transition Design lesson number one, manage to your carrying capacity. LOL ;)

Some of the project opportunities never really materialized. Take, for example, two different ideas with two different sets of collaborators: 1) a research and knowledge hub and 2) a course focused on the financial and business side of transition. Both of those ideas required funding, dedicated coordination, and significant time from all collaborators—which we just weren't able to make happen for either of those projects. This is a dynamic that people working in collaborative spaces know well, and which works in tension with capacity: plant more seeds than you expect to grow.

Reframe activities occurred iteratively with Respond activities. Sprints of working group activity led to opportunities for reframing and re-presenting findings, so that new thinking was incorporated at each step.

Four sub-projects (working groups) are discussed in this case study:

- **Compost as a Catalyst**—to help develop a market for source-separated recycled organics (e.g. compost), as part of enabling farmer transition to more ecological, regenerative approaches to agriculture.
- **TransitionAg**—a business experiment in meeting farmer transition needs.
- **Rewilding Moore Park**—A look at Regenerative Agriculture from the perspective of public awareness, higher education, and landscape design.
- **WWF Local Learning Labs**—An experiment in building local regenerative entrepreneurship.

Bringing together the findings from the first and second round of interviews with the findings from the working groups, the next step was to draft a Theory of Change. The Theory of Change summarizes all of the elements identified in this research that can support transition to Regenerative Agriculture. It may look daunting, but it's not meant to present a big a task—it is meant to show that everyone has a role to play in transition.

Phase 3: Harvest

In the final phase of the project, I shared this field guide and sought feedback from agriculture sector participants, practitioners, and change makers interested in regenerative transitions. The feedback enabled me to notice what I had missed, better articulate the research and findings, and keep honing the approach to enhance the potential for transition.

Once begun, this work never ends. It is my sincere hope that these projects and the relationships that they have helped foster will continue on, in various permutations, for a very long time. I take comfort in the advice from Wes Jackson of The Land Institute:

> *"If your life's work can be accomplished in your lifetime, you're not thinking big enough."*

Project participation

The findings in this guide are based on input from a broad range of sources, including at least 444 project participants, interviewees, and collaborators.

Semi-structured interviews

50 participants (12 were also collaborators)

- Innovators / Early adopters – 8
- Regenerative / ecological farmers – 6
- Farmers in transition or working toward transition – 8
- Skeptics – 2 (spoke to more but they declined)
- Consultants and advisors – 8
- Extension and research – 4
- Educators and academics (2 regenerative farmers) – 5
- Supply chain – 2
- Advocates of agriculture change / regenerative ag – 2
- Design / social / transitions practitioners – 6

Working Groups

27 people across 10 projects/groups

Over the course of this project, I engaged with 10 different projects or groups, including: a project to grow the market for source separated recycled organics, an advocacy cooperative, a research and knowledge hub concept, an idea for a course focused on the financial and business side of transition, a group working to scale landscape and hydrology repair, a class looking at rewilding a 20 hectare section of a city park, and a learning lab for regenerative entrepreneurship. Some of the collaborations were able to progress, some were not. Stories and anecdotes from those experiences are included in this guide. Some of the collaborators participated in the interviews.

Workshops

160 people over 8 in-person workshops with input via group discussions; an additional 193 people via 5 Facebook Live events.

Of the in-person workshop participants, roughly 35% had already transitioned to Regenerative Agriculture, 40% were in transition, and 25% were potentially interested but had not yet transitioned. Of the total, roughly 10% were actively working to promote or support Regenerative Agriculture. Workshops were linked to the source separated recycled organics working group.

TransitionAg

29 survey responses

To inform the development of my TransitionAg business experiment, I conducted a survey to test offers and better understand farmer transition support needs. Within the first week of launching the business I had 29 responses, and published those responses on the TransitionAg website. Insights from that survey are included here.

SECTION 2

Initiate & Situate



Initiate and Situate

Barriers to transition

Process

In this project it was important to allow time for 'Initiate' activities. This included reaching out to potential participants, opening new conversations, and creating the potential for new relationships and experiences. It requires respecting cultural values and acknowledging existing and previous work. Particularly when working with First Nations peoples, it requires following protocols of introduction, roles, and boundaries.

If collaboration is agreed on, it is a time for doing all the relational, logistical, communication, and organizing tasks that help people 'start well' together and participate equitably. This can mean ensuring the work is accessible, open, visible, and transparent—across scale, levels, and power.

Getting 'situated' means getting oriented to context. It is a time for building connection between people—and place. It is a time for listening, inquiry, and sense-making.

Two road trips through NSW (one in the campervan named Fish) and countless phone calls helped me to build relationships and become more familiar with the context and sector. Time invested in initiation, situating the research, and discovery enabled the longer-term project activities.

Semi-structured interviews

Two rounds of semi-structured interviews were conducted in this phase. The first was to understand Regenerative Agriculture context, barriers, and opportunities from the perspective of farmers and people in the sector. The second set of interviews focused on stories of supported transitions.

Literature review

As is standard in research approaches, a literature review was conducted to understand what has been published on supporting Regenerative Agriculture transition and Transition Design.

Design methods

Personas are a tool borrowed from service design. The idea behind using personas is that there are different needs among beneficiaries of a service (for instance) and that understanding the patterns can help tailor to differing needs. Personas are one way designers use their own capacity for empathy to help build empathy among others.

Systems mapping is used to make systems and their dynamics visible. When people involved can literally see and better understand systems dynamics, they are better equipped to take productive action and assess improvements in how systems work.

Generative approach — Designers make and remake things like systems maps together with participants in order to draw out and experiment with ideas live, on the fly. Generative approaches bring out participant knowledge and experience, inviting play, curiosity, and creative problem solving.



IMAGE: Fieldwork with the campervan named Fish (2019). Wiradjuri Country, Central Tablelands, NSW.



IMAGE: No-kill cropping example with oats, Central West New South Wales (2021). No-kill is a method pioneered by farmer and innovator Bruce Maynard. This method involves planting and harvesting in grassland, without tillage and without compromising the biodiversity of the grassland.

What is regenerative agriculture?

One of the first tasks of this project was to understand what Regenerative Agriculture is, and what that means out in the paddock. What makes Regenerative Agriculture work, *how* do regenerative outcomes come about? Looking across a fence that divides two paddocks with two different management practices, the difference in outcomes you will see emanates not just from the practices but also from the paradigm behind the practices.

In this project, participating farmers—primarily with grazing and mixed grazing and cropping operations—discussed a series of mindset shifts required for them to manage regeneratively, for example: managing holistically—for ecosystem, animal, and human health; viewing the landscape (inclusive of soil, plants, and hydrology) as the primary asset to invest in and steward rather than the product e.g. the livestock (becoming "grass growers"); preferencing natural and biological approaches rather than synthetic chemical approaches; decreasing off-farm inputs and minimizing intervention; viewing soil health, ecological life, and biodiversity as resilience; stimulating biology and fertility; working with beneficial insects like dung beetles and certain types of wasps, seeking the adaptive strength of native plants, especially perennials; seeing weeds as a sign of needs in the landscape; valuing quality, like nutrient density, together with quantity; managing for profitable production and long-term viability rather than yield at any cost. These practices were described as "getting out of the way of nature" so that the self-renewing properties of nature can operate:

> *"According to Mary E. White, it was twice as dry and four times as windy 18,000 years ago—and [Aboriginal] people lived through that. The plants know how to deal with conditions much more extreme than they are currently. Because of evolution, they've adapted. Whether the climate further out west becomes our climate, the plants know how to change. I've come to the view: we need to lessen our interventions and allow for natural processes to take place. The natural world is always trying to move to a more complex state—if not, it's because of our interventions. We are intervening with grazing and [so] we're giving long periods of rest to allow natural processes to express themselves"* (122 Regenerative Farmer).

For some practitioners, taking a regenerative approach has led them to get to know the history of their land, meet Aboriginal neighbors and community, and appreciate traditional custodians and their knowledge in new ways.

Some participants discussed the mindset shift in terms of holism and spirituality, which puts some people off:

> *"I learned about complexity and how we need to work with and manage for it. Knowledge of whole systems is important in that. But holism sticks around because it provides something fundamental that people*



IMAGE: Regenerative grazing example during drought with reduced stock, South East New South Wales (2019).

> *need...In working holistically, we can find that connection back to everything around us...Connection to the spiritual is a basic human need – that's why holism doesn't go away"* (135 Ecological manager).

Participating farmers stated over and over again that Regenerative Agriculture works because they took a mindset of farming *with* nature'. Nature has life-giving, self-healing, renewing, self-organizing properties, and these qualities are referred to as the regenerative qualities inherent in nature—that is, in the sum of all that is living and non-living, including humans.

Farmers identified that they were achieving ecological and human wellbeing, climate resilience, and production by working with the self-renewing properties of life itself, in the way that nature works. In how farmers described Regenerative Agriculture, there is congruence between means and ends: the approach to farming works with the capacity for renewal, and so yields regenerative outcomes. To restate that, **Regenerative Agriculture achieves regeneration *and* production by working with the self-renewing qualities inherent in nature.**

Regeneration has nested, fractal, and interdependent qualities. Taking this concept further, we can ask the question 'Is it regenerative?' at different scales. Farmers can evaluate whether their management feasibly contributes to regeneration at micro, meso, macro, and meta levels. Refer to image 'Scales of Regeneration'. For example, regeneration at the scale of the:

1. Plant, animal, individual, microbiology, and soil
2. Family, herd, paddock/field, riparian zone, and block of land (e.g. multiple paddocks/fields)
3. Local watersheds, regions and communities
4. Planetary boundaries

Listening to farmers describe how regenerative farming achieves regeneration by working *with* nature and its self-renewing properties draws out the paradigm—the mediating factor between practices and outcomes—that makes Regenerative Agriculture successful.

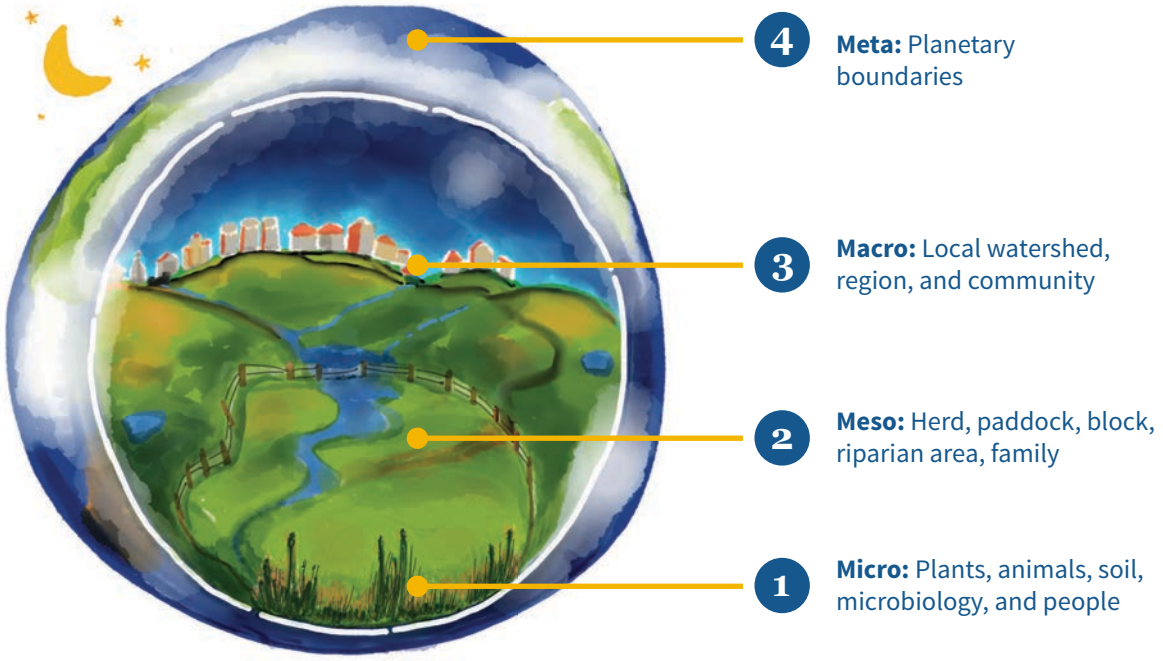
Redefining the farmer's pride and joy

Rather than pitting production against conservation, the regenerative mindset brings the two together. Furthermore, regenerative management provided resilience during times of stress, as one farmer described:

> *"In a drought if there's no green leaf there's no farm. You have no production, no factory"* (125 Regenerative Farmer).

The implication of this, however, is profound and profoundly painful: climate stresses like drought have been made worse by our approach to managing landscapes. And this is why Regenerative Agriculture is seen as an avenue for farmers to contribute to ecological resilience: agricultural management impacts climate resilience. Participants shared how they perceived that taking up Regenerative Agriculture has afforded far reaching benefits for the landscape, for themselves, their families, and their communities. This is why proponents believe that taking up Regenerative Agriculture at scale has potential to be a primary contributor to creating climate resilience at the scale of planetary ecosystem health (Hawken, 2017).

All of this adds up to a completely different view of success in farming. More than a different way to manage a property, participants described how Regenerative Agriculture redefines what a farmer takes pride in: stewardship of health, wellbeing, and resilience across many dimensions for long term viability of production—and to be able to stay on the farm.



A contested definition

Although there was consistency in how the farmers participating in this project defined Regenerative Agriculture, the formal definition is contested.

On one hand, Regenerative Agriculture may be framed by associated practices: continual ground cover, multi-species cover cropping, no or low tillage, high density rotational/ration grazing, using natural/biological inputs like compost, vermicast, fish emulsions, biochar, etc., increasing biodiversity above and below ground, natural pest control, low-stress/stress-free stockmanship and self herding, repairing hydrological function, and more. There are an unlimited number of practices that could contribute to regeneration and participants underscored the need to leave room for innovation.

On the other hand, definitions emphasize outcomes or attributes of Regenerative Agriculture: building soil health, increasing biodiversity, capturing carbon, improving the water cycle, promoting ecosystem function, delivering holistic benefits, contributing to farmer and community health, reversing climate change, etc.

Grelet et al. (2021) argue that Regenerative Agriculture is unquestionably outcomes focused:

> *"While [Regenerative Agriculture] is informed by the many predecessors of alternative agricultures, unlike them it does not preclude any particular practice if it is needed to facilitate the transition of the agroecosystem to a state of increased health. In other words, the means are less important than achieving the ends. Therefore, a defining attribute of [Regenerative Agriculture] is that it is 'outcomes-focused.'"*

Academics and institutions do not all agree. To encapsulate the discussion: at one end of the spectrum definitions begin with "soil conservation as the entry point to regenerate" (Giller et al., 2021); meanwhile at the other end of the spectrum, agriculture on the whole is asked to draw upon holistic, ecological and systems approaches to not only "transition the agroecosystem to a state of increased health", but also to regenerate our environment, society, economy and spiritual wellbeing as an ultimate goal. I would observe as well that what is being debated is 'regenerative' as a production system versus 'regenerative' as an agricultural paradigm. Some frame the debate as: Should we define "Regenerative Agriculture [as] an end, or a means to an end"? (Giller et al., 2021). Listening to farmers, I would argue that Regenerative Agriculture is successful when it is regenerative in means *and* ends.

There are risks at both ends of the spectrum e.g., practices versus outcomes, production system versus paradigm. Definitions focusing on "soil conservation as an entry point", practices, and production system have been criticized as making the movement vulnerable to green-washing. In these definitions, anyone who uses prescribed methods without attention to broader ecological outcomes can use the term 'regenerative'. This end of the spectrum may whittle outcomes down to single measures like soil organic carbon, which risks encouraging behaviors like carbon credits for practices that are not carbon neutral. This measure is also easily parlayed into a technology problem—as an example, driving investment in pursuit of the ultimate soil organic carbon molecule, microbe, and product. Critics perceive this form of definition as side-stepping the contentious use of chemicals, and serving corporate and political agendas. A too-familiar definition risks watering down the potential for making a difference in agriculture, as Gordon et al. (2022) observe,

"Regenerative Agriculture cannot be understood differently if the language still frames it within the conceptual confines of industrial–productivist thinking."

On the opposite end of the spectrum, a definition that calls for holistic outcomes that include the transformation of the agricultural paradigm and our worldview may further alienate and put on the defensive those who already are inclined against Regenerative Agriculture, risking slowing down or impeding the growth of the movement. In a 2020 policy brief from the Menzies Institute, the authors chose to go with the term 'Resilient Agriculture' because they felt the term 'Regenerative Agriculture' was too divisive:

> *"Resilient Agriculture is the mix of agricultural practices that results in the improvement of soil health... The term 'Regenerative Agriculture' was not used for the policy brief because it was seen as too divisive, e.g. 'overly prescriptive rules on the types of farming that should or should not be practiced' vs 'simply... practices aimed at improving a farming system's sustainability'" (Hyett, 2020).*

It is worth further understanding the extent to which this conundrum poses a problem to the growth of the Regenerative Agriculture movement and regenerative outcomes. Does the definition need to be palatable to a broad audience right now for the movement to keep growing and ultimately become mainstream? To what extent does a palatable definition compromise regenerative outcomes?

Transition requires pluralism

Meanwhile, transformation of agriculture means working within the dominant farming paradigm at some point. For wide-scale transition to occur there is opportunity for "transformative organizing" that "constructively [engages] with those who have oppositional beliefs," including "'conventional' farmers who are threatened and annoyed by the 'holier than thou philosophy' (Henly, 2021, p. 77) of Regenerative Agriculture" (Gordon et al., 2022).

What does wading into dialogue in "oppositional" territories mean for Regenerative Agriculture? What are the key areas of tension? To what extent should this interaction between niche (Regenerative Agriculture) and dominant paradigm (conventional agriculture) produce a plurality of new forms (like resilient agriculture)? Might these interactions bring innovation to Regenerative Agriculture? In what ways can practices vary and still have regenerative outcomes? Are incremental changes enough to make a difference in climate outcomes?

Weathering drought

"We don't have any machinery anymore – we sold all our equipment. We didn't have a lot – we weren't big in cropping. We had a tractor and the gear we needed. Never owned chemical spraying or harvesters – that was all contracted. The tractors and cultivation gear – sold. Used [the money] to put into [our] water scheme and fencing and reduce debt. Diverting the former chemical and inorganic fertilizer budgets for two years paid for the water and fencing infrastructure...

As soon as we started practicing holistically we went into a 9-year drought then in 2006 we had a bushfire that burned 1/3 of the property...Challenging times. 2006 was the driest of the nine dry years. We destocked by 30% immediately and for the rest of 2006 we were shearing and selling until we were totally destocked in November 2006. This combined with several small falls of rain meant we were confident to purchase a large mob of ewes for $5 a head in a collapsed market, which began the process of rebuilding our livestock capital.

We spent absolutely nothing on feeding. We used to reduce by 30% and then feed. I calculated [if we had done that] we would've spent half a million dollars but instead we weren't going backward, we didn't have that expense. So effectively our livestock capital was in our bank account."

—122 Regenerative Farmer

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People see *"success"* in agriculture very differently

SOURCE: Rebecca Cross

Barriers to transition

This section discusses dynamics that complicate the adoption and spread of Regenerative Agriculture.

Allergic reactions and differing views

Systems thinking and change management teach us that a system is set up perfectly to get the current outcomes it's achieving (for better or worse)—and that the people within systems and seemingly the system itself will defend the status quo. Defensive mechanisms can be like allergic reactions—automatic. That being said, not every reaction is defensiveness, and differences in perspective cannot be discounted. People working in change employ various strategies to work with this dynamic as well as differing perspectives, whether with humor, non-confrontational conversation, carrot, stick, small steps, negotiation, direct confrontation, grassroots, advocacy, influencing, etc.

Push back—"cultural scripts"

Regenerative Agriculture challenges industrial agriculture, and there is push back. This section outlines a handful of the most common "cultural scripts" (Vanclay and Enticott, 2011) that participants noted.

"We have to feed the world."

Skeptics of Regenerative Agriculture who participated in this research discussed their concern that Australia has to 'feed the world' (in particular, China), as a reason for not switching to other forms of agriculture. They see industrial agriculture as the only way to meet this challenge in a competitive market.

As reported by 'Our World in Data', (citing Vincent Ricciardi et al.) half of crop production and 55% of the world's food comes from farms 10 hectares and less. Furthermore, contrary to "*conventional wisdom that the world cannot be fed without chemicals and synthetic fertilizers... the U.S. Department of Agriculture is now running trials on farming methodologies that eschew tillage and chemicals. Evidence points to a new wisdom: The world cannot be fed unless the soil is fed.*" (Hawken, 2017)

"Where's your data? Glyphosate is good science"

There is a belief that "glyphosate is good science" and a perception that there is not enough independent evidence behind Regenerative Agriculture—regardless of the mounting evidence against the widespread use of synthetic chemicals in agriculture. Meanwhile proponents of Regenerative Agriculture voiced concern that the science being undertaken is not doing it justice:

> *"Modern ag is...a multidisciplinary field – plant science, animal science, physics, soil science. The one field [of science] that industrial ag doesn't do well is ecology. It's the integrative field of science...brings these all together. [And] that's the problem with industrial ag [and the science]: most of the time it doesn't include ecology within its approach"* (129 Agroecologist and Extension Consultant).

"It won't work for me"

Proponents reported being challenged by the assertion that regenerative practices were 'fine for them' but that they wouldn't work for others. This assertion needs to be investigated further, and may be tied to the idea that Regenerative Agriculture involves a limited set of practices, rather than an "open and flexible toolbox" (Grelet et al., 2021). To counteract this, proponents in this research emphasize that demonstration (and teaching) sites are required in every biome and for every farming type.

"It's hard to go green when you're in the red"

Proponents in this research tend to emphasize that the cost and time to transition to Regenerative Agriculture are not insurmountable, but it is a barrier to transition for some, as one researcher shared:

> *"[The farmers say to me], 'This is how my family has been doing it – pesticides, herbicide and good seeds'... What stops some people is 'how do I get from a to b'? They say to me 'It's hard to go green when I'm in the red. I feel trapped'...Farmers are very proud. They don't want handouts. Charity. Sympathy. None of them want to see their crop fail or shoot their animals due to starvation. That's what can lead to depression, family breakdown and potentially suicide. [We have] got to prevent farm families from going into a downhill mental spiral that they get to that point. If the government spent money on education and training to transition rather than bail out..."* (123 Researcher).

SOURCES

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SYSTEM IN FOCUS: AGRICULTURAL PRODUCTION SYSTEM
2020.01.11
SUPPLY CHAINS
POWER ?
HOW MIGHT WE... DECREASE CHEMICAL INPUTS ? COSTS ?
MANUFACTURERS
SUPPLIERS
CONSULTANTS
ABORIGINAL WAYS OF KNOWING
CIRCLE OF LIFE
?!
UNIS
R&D DEPTS
RESEARCH INSTITUTES
COMMODITIES & PRACTICE
AG EXTENSION
SCIENTISTS AGRONOMISTS CONSERVATIONISTS ...
LEARNING CYCLES + DATA
INNOVATORS
SALES/REPS
- ECOLOGICAL - BIOLOGICAL/ NUTRIENT CYCLES
CLIMATE & WEATHER EVENTS
HOW MIGHT WE... ENABLE THE SELF-ORGANISING QUALITIES OF NATURE... AND GET OUT OF THE WAY ?
TECHNICAL CYCLES
HOW MIGHT WE...
... RETURN NUTRIENTS TO FARMS ?
... ENSURE FARMS DO NOT LOSE NUTRIENTS ?
FARMS
$
BANKING LOANS & INTEREST
INSURANCE
ECONOMIC CYCLES
GOVERNANCE ? ACCOUNTABILITY
LOBBYING
'TECHNICAL' COMPONENTS ARE MAKING IT INTO OUR FOOD & AND US AND OUR BIOLOGICAL CYCLES
MANY LAYERS
FARM
LOCAL
STATE
NATIONAL
GLOBAL
REGIONAL
CORPORATE
PROCESSING, TRANSPORT PACKAGING
HOW MIGHT WE... INCREASE THE QUALITY + QUANTITY OF NUTRIENTS IN OUR FOOD ?
• LOCAL LAND SERVICES
• LAND CARE
COMMUNITIES
• PRACTICE
• SOCIAL
RETAILERS MARKETING ADVERTISING
WASTE OUTPUTS
HOW MIGHT WE...
... REDUCE WASTE ?
... REDUCE THE QUANTITY OF TECHNICAL NUTRIENTS GOING INTO LANDFILL ?
SOCIAL ? POLITICAL CYCLES
MEDIA
HOW MIGHT WE... DEVELOP CONSUMER AWARENESS ? DEMAND FOR SUSTAINABLE PRODUCTS ?
DEMAND CYCLES
CULTURE
AWARENESS + TRENDS
BEHAVIOUR CHANGE
HUMAN PSYCHOLOGY
EDUCATION
HOW DO WE FEED 9BN PEOPLE SUSTAINABLY IN 30 YEARS' TIME ?
POPULATION

Mapping barriers and constraints

In interviews and workshops, participants were provided with the systems map on the previous page, 'System in Focus'. This map gives a visual representation of how the Australian food production system operates. Interview participants were asked to consider this visual, whether or not the system was working as depicted, how the system might not be functioning optimally (for instance, note the gap between waste and nutrient cycles), and what might be missing or in the wrong place. Feedback from interviewees was used to iterate the map to this version, which was then shared with Compost as a Catalyst workshop participants. Both interview and workshop participants were asked to name barriers and constraints that they felt make it difficult to transition. Themes are described here.

Definition

Because the definition of Regenerative Agriculture is not fully settled (at the time of this research), it makes it tricky to transition. Debates rage on social media as to who can call themselves a "regenerative farmer".

Education and constructing your own approach

In addition to the moving target that is the definition of Regenerative Agriculture, there are no turnkey solutions to adopting Regenerative Agriculture. "Conflicting advice" got 2 workshop mentions and the need for demonstrated examples was also raised. Each property requires a unique mix of approaches which farmers must individually learn, test, and implement. This takes time as well: Having the time or making the time to plan and implement transition amongst the rest of life garnered 5 mentions in 3 workshop locations.

Education was a common theme for interviews and workshop participants, as both a barrier and an opportunity. At 24 mentions, it was the most commonly identified topic in workshops—but the comments were often general, e.g. "Education", and some comments may have pertained to consumers and/or farmers. Specific farmer education themes included: Education for transition (7 mentions); Mentoring (2); Getting the message out to farmers (2); Outdated education and data (1); Bringing the many practices together (1) for organic (1), resilient (1) outcomes; and blending conventional and new approaches (1).

Markets and distribution

Markets were the second most frequently mentioned barrier in workshops with 27 discussion group mentions, noted in all 8 workshop locations. "Competing in (cheap) commodity markets" was specifically noted in 8 groups. Other themes included: Access (4 mentions); Size of farm and price taking (2); Unable to meet minimum orders (e.g. birds min order 1000) (1); Variability of prices (1); Middle man (1); Getting premium prices for regenerative products (1); Primary producers paying retail for inputs and getting paid wholesale for their outputs (1).

One aspect of distribution that came up separate to the discussion of markets was the identification of the need for abattoirs suitable for regeneratively produced products (5 mentions, in 5 locations). Regulatory restrictions were discussed, and participants mentioned looking for independent abattoirs with little luck, on-farm abattoirs, and home kill options.

Scale and distance

Small- and medium-sized farms have been finding that legislation, policies, grants, markets, etc. are designed for larger scale operations, making it hard to access supports available and customers.

Distance is a factor in Australian agriculture. Even regions have distance challenges. Distance to markets got 3 mentions in 3 locations.

Policy and regulation

Interviewees discussed the mismatch between Regenerative Agriculture and current agricultural policy, regulation, and incentives (like subsidies). In workshops, regulation got 13 group mentions, coming up in 6 locations. Themes included: Amount of compliance/paperwork and over-governance (6 mentions); Opportunity to embed the concepts and philosophy of Regenerative Agriculture within government, regulators and authorities (3); Governance of unmanaged grazing (2); Specific rules /governance as roadblocks to adopting specific practices (1); Regulation standards for compost/soil (1).

Supply—Relevant equipment and natural inputs

Appropriate tools/machines and natural, biological inputs are slowly becoming more available. Many farmers modify equipment to make it suitable for regenerative practices.

In terms of natural inputs, demand for quality compost outstrips current supply, and interest has only just begun to turn to compost, vermicast and other biological inputs at scale in Australia (inclusive of bulk compost, liquid applications, and pellet products). It is worth noting that 160 people turned up at 8 workshops across the state of NSW to learn about and discuss farmer adoption of compost and growing the market for source-separated recycled organics.

Workshop discussions were split between the lack of organics recycling in regional and rural areas, frustration with current compost supply quality, interest in using (more) compost or more affordable alternatives, and interest in making compost on farm. 31% of workshop participants were already making their own compost, and 52% of participants (63% of land managers) were interested in making compost on farm.

Consumer demand

Consumer demand was discussed as both an opportunity and a barrier. Consumer sentiment, arising from awareness, education, culture, and connection to provenance, were seen as a driving force of demand for regeneratively / ecologically grown, nutrient dense foods. Thus, a major enabler or barrier to transition: people asking more for regeneratively produced items.

Financials and planning

As noted, there are costs associated with transitioning to regenerative management, whether transitioning an existing property or taking on a new property. Financials were mentioned in 12 workshop groups, coming up in 7 of the 8 locations. Themes: If you don't already have land, the cost to begin farming is high (4); If you need to shift your infrastructure, there are costs associated (3); Cost barriers too high for large farms (1); Limited grant availability (1).

Measurement and science

Existing measures, "reductionist science", and controlled trial methods were considered unsuitable for researching Regenerative Agriculture (e.g. methods not accounting satisfactorily for ecological factors and dynamic management decision-making).

Succession

Some of the newer generation have difficulty convincing their families to take a different approach. Some farms want to transition but do not have family succession available to help make that happen.

Social pressure

Despite the reputation of farmers for being independent, there is known to be a significant amount of peer pressure to do what everyone else does. Success, pride, and identity in farming are tied to the dominant approach: *"Being a good farmer is tidiness…going with the pack. Not stepping outside the main group identity in your district"* (129 Agroecologist and Extension Consultant). Financial and reputational prestige are attached to industrial, productivist farming approaches.

The social pressure is isolating. Farmers have reported having to develop a very tough skin in the face of criticism and judgment from neighbors and community:

> *"There is real social unacceptability of the regenerative approach or natural farming. It almost pits neighbors against neighbors. To me, if you are able to explore the social blockages, why it hasn't been taken up, that would be helpful. It's also rattled the cages of state government extension services, local Landcare, DPI and technical sales people—of which there are a lot.*
>
> *Incredibly strong, well-resourced departments are undermining it. It's a threat. No wonder it's almost become an underground movement. I think to explore why is there so much negativity – when a farmer does something different on his farm – would be helpful. When a farmer doesn't take traditional best practice advice and still achieves as good or better outcome, why does that agent see it as criticism? There is a lot of stuff bound up in it. For the sales guy – it's their livelihood. You can see it at the moment – people have ground cover and others have bare ground. And it probably drifts into where there are change agents…*
>
> *We can no longer look to government for the lead. We're looking for those positive deviants. Where are they in agriculture? We don't have many of them because it's such a tough social environment. I can't recall a time when there's been so few private farm consultants in NSW. We could be some of the few left. These are some of the questions that are important to look at"* (120 Holistic Management consultant).

Whether tied to social pressure or the risk of transition, both, or something else, the word "fear" turned up as a barrier on three post-it notes in 2 locations.

Vested corporate interests

Proponents felt that the conventional model hinges on "selling something" and "making money off farmers" rather than "what may be best for the land". Large industry, chemical companies ("big money") are perceived to be holding the relationships with political players, government, and research bodies.

Climate

Climate is at the forefront of farmer thinking at all times. Climate-related weather challenges were named as opportunities for forward planning but also barriers in the future (5 workshop mentions).



IMAGE: Tocal workshop. Michelle Miller facilitating.



IMAGE: Wagga Wagga workshop. System barriers discussion.



IMAGE: Albury workshop. John Barton presenting.



IMAGE: Tocal. David Sivyer and Lee Fieldhouse presenting.



IMAGE: Tocal workshop. Bruce Maynard presenting.



IMAGE: Ellenborough workshop.

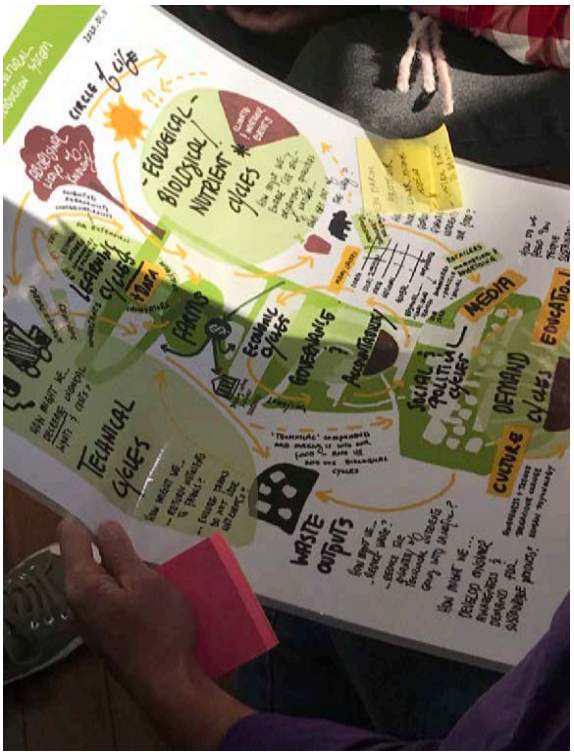


IMAGE: Wagga Wagga. System barriers discussion.



IMAGE: Weethalle silo painted by Heesco Khosnaran (2019). Riverina region

Structural lock-ins

This research focused on the barriers, constraints, and opportunities for transitioning to Regenerative Agriculture, which is a growing niche, and how it intersects with conventional agriculture, the dominant regime. Although agroecology is connected but not the same as Regenerative Agriculture, recent research in agroecology transition is comparatively illuminating for Regenerative Agriculture transition as it reveals the landscape and dynamics of the regime which Regenerative Agriculture seeks to influence.

One of the most common frameworks used to explain and analyze transition is the Multi-Level Perspective (MLP). As Iles (2021) describes: "First developed by Dutch sociologist Frank Geels (2002), the MLP framework follows the growth of a transition through many processes interacting simultaneously with one another at niche, regime, and landscape scales. A transition happens when these processes 'link up and reinforce each other.'"

Arguing that "relatively few analysts have applied transitions scholarship to agroecology, particularly the Multi-Level Perspective (MLP) framework", Iles (2021) draws attention to the interaction between the regime and the broader landscape, raising the challenge of "structural lock-ins", or architecture of the dominant conventional agricultural regime that reinforces and supports this regime—and impedes related alternatives to the regime like agroecology, Regenerative Agriculture, organics, permaculture, and more.

Iles (2021) sets out the enormity of the transition challenge:

> *"Australia faces seemingly impossible barriers to transitioning to agroecology. Since the 1980s, Australian agricultural policy has taken a strong neoliberal stance. Farmers are exposed to global markets with little government assistance. Like other industrial countries, corporate power has intensified through domestic market oligopolies. Supermarkets and food processors have pursued low-cost strategies, further squashing many farmers. Instead of a national food policy, the country has an agricultural competitiveness policy that devotes superficial attention to environmental concerns. Atop long-running environmental declines in biodiversity, soils, and forests that make it harder to farm, climate change is amplifying the effects of drought and bushfire. Policy-maker, industry, and scientist elites believe in technological solutions to sustain growing production."*

Iles outlines and defines eight structural lock-ins, which I will quote in detail here for their relevance to Regenerative Agriculture transition in Australia. These were also raised by participants as barriers, particularly interviewees, if not in the same terms.

Lock-ins facing Australian "agroecological prospects":

1. **European agricultural model** – "Ongoing challenges of adapting to dynamic climate; land/soil damage; destruction of biodiversity; production heavily based on less suitable crops and animals; dependence on irrigation and 'cash crops'"
2. **Settler colonialism** – "Erasure of Indigenous agricultural knowledge and practices; 'war' on nature; frontier exploitation attitudes"
3. **Geography** – "Diverse agricultural/land zones; mostly semi-arid continent; lower soil fertility in parts; extremely dynamic climate"
4. **Policy-making institutions** - "Capture of government decision-making by industry interests and economists; farmer lobby predisposed to productivism; major parties committed to extraction"



IMAGE: Bushfire (2019). Nundle, North West region

5. **Neoliberal agricultural policies** - "Evisceration of historical rural welfare system; lack of farmer support; growing farmer and rural poverty; emphasis on exports and competitiveness; absence of national food policy"
6. **Industry supply chains** - "growing industry consolidation; dominance of supermarket chains; emphasis on low cost food"
7. **Environmental / climate developments** - "Accelerating climate impacts; lengthy droughts (2 in the past 20 years); bushfires; water scarcity"
8. **Science & technological visions** – "Long-running scientific agricultural paradigm; emerging interest in robotics, big data, gene editing, glasshouse production" (Iles, 2021).

Not unlike agroecology, Regenerative Agriculture in Australia (when the definition includes regenerative outcomes), circumscribes an approach to agriculture which: is climate adaptive and opportunistic; works *with* nature; focuses on increasing ecosystem function through biodiversity, plant density and biomass, photosynthetic capacity, ground cover, forests, wetlands, hydrology, and nutrient cycling, etc.; (is becoming more) encouraging of diversity of crops, animals and business models; (is becoming more) (re)appreciative of Indigenous knowledge and land management practices; eschews extractive, reductionist, and exploitative land management; cautions against productivism; builds and protects soil fertility and biology; is recentering around local communities and economies together with export; originates from a grassroots movement and is in danger of capture by corporate interests; comes from an eroded farmer and rural power, economic, and population base; involves investing in national food sovereignty; struggles to differentiate and protect revenues amongst industry consolidation and low cost supermarket maneuvering; is working to establish climate resilience at a time of unrelenting unprecedented climate events; incorporates ecology in the scientific agricultural paradigm; and is often overlooked in technology-oriented visions.

All of these qualities of Regenerative Agriculture and agroecology stand in contrast to the dominant regime and structural landscape, and face risks posed by the 'structural lock-ins' named here.

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IMAGE: Pasture raised chooks (2021). Awabakal country.

Summary of existing enablers of transition

Adoption of innovation is extensively researched in agriculture, and the sector has developed a broad range of 'social technologies' to support farmers to take up new methods. Some of the most common enablers are extension services like those available via Local Land Services, tertiary and vocational education, such as the Regenerative Agriculture degree at Southern Cross University, training like that offered for Holistic Management or offered by consultants, peer networks, and grassroots initiatives like Landcare. The range of supports available has taken various forms over the years. Participants, in search of independent advice, recounted swings between supports being available via government versus supports being provided by private services.

Other factors are known to influence transition as well. In *'The Call of the Reed Warbler',* Massy describes the role of personal crisis in facilitating change. Participants spoke to the role of consumers in demanding food and fiber that is produced regeneratively, noting that farmers grow what people buy.

The table at right summarizes known enablers of transition in three categories:

1) Farmer transitions and capability
2) Sector capacity
3) Narratives, discourse and culture

Known enablers of transition

THEME A: FARMER TRANSITIONS AND CAPABILITY	Crisis Personal reflection
	Holistic decision-making, including articulating the holistic context and goals
	Whole farm planning, including landscape repair, farm layout, production plan, business model development, and more
	A persistent friend or partner
	Education, extension, peer networks, mentoring, and support—including: Technical advice, 'boots on the ground' support, and lowering the thresholds for adoptability of methods in how they are explained or enabled
THEME B: SECTOR CAPACITY	Strategic extension—whole sector or region approach
	Group workshops and projects, including collaborative ecosystem or watershed regeneration projects
	Consumer demand, market dynamics
	Policy incentives
THEME C: NARRATIVES, DISCOURSE AND CULTURES	Campaigns, journalism and reporting, social media, and social movements
	Cultural norms of success in agriculture
	Societal visions and narratives

SECTION 3

Reframe



CASE STUDY—SECTION 3

Reframe

From barriers and enablers to opportunities

Process

Analysis, synthesis, and reframing

All interview and data analysis in this research involved practices like reviewing transcripts of interviews, and identifying and coding themes using qualitative research methods. Themes were identified for barriers, known enablers of transition, and potential opportunity areas.

Opportunities—areas for action

Design processes involve identifying opportunities, and in some cases this includes reframing barriers and constraints as opportunities. Opportunities are then clustered into opportunity areas.

Opportunity areas in this research are organized by the same themes named in the analysis of barriers, Those themes are continued across Sections 3, 4 and 5:

A. Farmer transitions and capability
B. Sector capacity
C. Narratives, discourse, and cultures

Sub-projects—experiments in action

In design, it is important to analyze and understand, but the dominant stance is to take action, to 'make' things that help bring desired conditions and futures into existence. This is why I engaged with collaborative working groups. For this case study, by the end I had engaged with 10 different working groups and associated sub-projects to support experiments in bringing about transition. In this section the sub-projects are summarized, and then four are highlighted in Section 4.

Design methods

Reframing is experimenting with different frames—conceptual viewpoints—to find a 'click' between our understanding of the situation and responses that might help. Sometimes reframing is as straightforward as re-imagining a problem as an opportunity. But reframing also involves looking for different ways to see situations. For instance, a problem of dependency on fertilizer can be framed, for instance, as an opportunity for natural options, or of needing transition pathways to reduce dependence, or both.

Opportunity areas are domains where (new/innovative) action can be taken to help facilitate, enable, or accelerate transition. Each 'opportunity area' is a chance for innovation, re-invention, and design. From a positive, problem solving stance, they are leverage points where new ideas, actions, and responses can be introduced to effect change. Opportunity areas should point to the known sum of places for action, the potential for an ecosystem of responses.

DESIGNING REGENERATIVE TRANSITIONS ©2024 MICHELLE MILLER

Theme

Opportunity Areas

(A)
FARMER
TRANSITIONS
AND CAPABILITY

1 
Education, Extension & Support

2 
Landscape repair

3 
Transition pathways

(B)
SECTOR
CAPACITY

4 
Science, measurement, & research

5 
Finance, investment, & insurance

6 
Supply, retail, processing, & distribution

7 
Local, global markets

8 
Governance, incentives, & policy

9 
Collaborative regeneration initiatives

(C)
NARRATIVES,
DISCOURSE
AND CULTURES

10 
The definition of Regenerative Agriculture

11 
Reconciliation, reparation, & relationships

12 

Consumer awareness and demand

Reframing barriers as opportunities

Opportunities: building conditions for change across leverage points

In the spirit of possibility, barriers are re-imagined through the frame of opportunity based on ideas, goals, and hopes that participants shared. Opportunity areas were iterated several times.

This process yielded twelve opportunity areas. Each is a design challenge, an area for experimentation and diverse responses. Opportunity areas are summarized in this section and explored further in Section 4.

Each opportunity is interdependent and mutually reinforcing, a piece in the puzzle for creating the conditions for transition to Regenerative Agriculture. More opportunities are always possible. Other audiences might frame or re-cut these opportunity areas differently.

The idea of opportunity areas is influenced by the concept of Leverage Points and the work of Donella Meadows, but interpreted somewhat differently. Each opportunity area is like an acupuncture point, a place in the system at which innovation, redesign, and re-invention could impact transition.

Everyone has a role in transition

Transition is a systems change opportunity—every part of the system has a role to make change tenable. To illustrate this point, the SMI report 'Scaling Regenerative Farming' details how we can "[identify] the role each sector of the value chain needs to play to drive action and unlock scale"; furthermore, SMI asserts that those who stand to benefit ecologically and financially should co-fund transition so that farmers do not bear the whole burden:

"Farmers, large or small, farm the way they do as a result of the market dynamics we have created through the food system. Right now, those dynamics favor current farming methods but...we can make changes that mean farmers can—and will want to—farm in a more sustainable way. We have therefore chosen to focus on what we, the private sector actors in the value chain, need to do ourselves to make regenerative farming a 'no-brainer' for the farmer and support and enable them to transition to and sustain this new system over the long term" (SMI 2022).



Opportunity areas by theme

(A) FARMER TRANSITIONS, CAPABILITY	1 Education, Extension and Support
	2 Landscape repair
	3 Transition pathways
(B) SECTOR CAPACITY	4 Supply, processing, distribution, retail
	5 Finance, investment and insurance
	6 Science, research and measurement
	7 Local-global markets
	8 Governance, policy, and incentives
	9 Collaborative regeneration initiatives
(C) NARRATIVES, DISCOURSE AND CULTURES	10 The definition of regenerative agriculture
	11 Reconciliation, reparations, and relationships
	12 Consumer awareness and demand

SOURCES

Sustainable Markets Initiative (SMI) Agribusiness Task Force. (2022) 'Scaling Regenerative Farming: An Action Plan'. White paper. Accessed via: https://www.sustainable-markets.org/taskforces/agribusiness-task-force/

Summary of insights and reframing

Theme	Scripts, Barriers & Lock-ins	x Known Enablers	→ Opportunities	→ Responses
(A) FARMER TRANSITIONS AND CAPABILITY	• Definition—what is Regenerative Agriculture? • Education favors dominant model • Having to construct your own approach • Succession challenges	• Crisis, disaster, reflection • Holistic decision-making • Business model and Whole farm planning • Education, extension, peer networks, mentoring, and support • Persistent friend/partner	 1 Education, Extension and Support  2 Landscape repair  3 Transition pathways	• TransitionAg • The Australian Landscape Science (TALS) • High Performance Landscapes; Chaos Garden • Agroecological Knowledge Commons and Research Network (AKCARN) • Business of Transition short course • Online Event: A year of regeneration • Institute of Ecological Agriculture (IEA)
(B) SECTOR CAPACITY	• Scale and distance challenge "local" • Policy, regulation, markets, distribution, finance, etc. incentivize industrial farming, productivism, extraction, commodities, global trade • 'Reductionist' measurement and science • Technological visions • Supply—Relevant equipment and inputs • Industry consolidation, low cost food models, vested interests • European agricultural model in Australia • Accelerating climate impacts and variability	• Strategic extension • Community-led regeneration projects • Policy incentives • Market dynamics	 4 Science, research and measurement 5 Finance, investment and insurance  6 Supply, processing, distribution, retail  7 Local-global markets  8 Governance, policy, and incentives  9 Collaborative regeneration initiatives	• Compost as a Catalyst • WWF Local Learning Labs
(C) NARRATIVES, DISCOURSE AND CULTURES	• Lack of consumer awareness and options • Social pressure and cultural scripts favor the status quo: *"We have to feed the world"; "Where's your data? Glyphosate is good science"; "It won't work for me"; "It's hard to go green when you're in the red"* • History and historical paradigms: settler colonialism, war mentality, exploitation	• Building consumer awareness and demand • Media and campaigns • Social movements • Cultural norms/ideas of success in agriculture • Societal visions and narratives	 10 The definition of Regenerative Agriculture  11 Reconciliation, reparation, and relationships  12 Consumer awareness and demand	• Rewilding Moore Park • Lismore Living Lab

Summary of sub-projects

Over the course of the project (2019-2022), I got involved with 10 different working groups. Some progressed more than others. The COVID-19 pandemic also dictated much of what could and couldn't be done during that time frame. This page lists all of the projects undertaken as part of relevant working groups during this research.

Agroecological Knowledge Commons and Research Network (AKCARN)

The intent of this project was to create academic, scientific, and farmer collaboration to progress a field of research around a shared body of agroecological knowledge. The starting point was an online literature database tool for Regenerative Agriculture developed by Serenity Hill. The initiative, requiring funding, resourcing, and an owner, merged with an initiative of the Australian Food Sovereignty Alliance (AFSA).

Business of transition short course

This opportunity looked at developing a short-form learning series with Mark Gardener focused specifically on financial and business skills for transition. It required dedicated funding to progress further.

Compost as a Catalyst

Bruce Maynard is a farmer, innovator, and educator, and 2022 Landcare Farmer of the Year. He developed no-kill cropping and helped bring stress-free stockmanship and self-herding to Australia. I supported two of his EPA-sponsored projects, Compost Buddy and Compost for Conservation Cropping (together, Compost as a Catalyst), to help build demand for recycled organics (in the form of compost). The collaboration continued on into other projects.

Institute of Ecological Agriculture (IEA)

The IEA (formerly AIEA) is an advocacy co-operative committed to transforming agriculture by encouraging ecological and holistic thinking. Members of the IEA contributed to the development of the Regen Ag degree at Southern Cross University. The collective is also looking at educator, consultant, and associate professional accreditation. Kerry Cochrane is the president. I participated in the IEA for two years, one year as a guest and the second year as a board member.

Online Event: A year of regeneration

Two participants in this project agreed to keep a photo diary of the regeneration on their property alongside their normal record keeping once the drought broke (rainfall, etc.). George Hamilton, known as Farmer George and who has been a long time vendor at the Carriageworks Markets in Sydney, agreed to host a Facebook Live event to walk people through what regeneration looks like post-drought on a regeneratively managed property including rates of growth, weeds, signs of resilience, etc. The event was attended by 31 people.

Rewilding Moore Park

At the invitation of Professor Martin Bryant, I co-taught a UTS architecture and landscape design class given the challenge to reconfigure Moore Park in Sydney to accommodate both golf and increased access to green space for residents. The concept was to offer an experience of wildness, based on ecological learnings from regenerative approaches to agriculture and the rewilding movement as a counterpoint to other parks in the city.

The Australian Landscape Science (TALS)

Through his work with Peter Andrews, my partner Scott Middlebrook introduced me to TALS. Peter Andrews is an innovator in landscape repair and rehydration, based on his insights into how the Australian landscape functions. I facilitated two field days, and contributed to efforts to articulate the work.

TransitionAg

Focusing on the challenge of transition sparked a big response among participants. During the course of project, the idea emerged that a business focused on supporting farmer transition might also be needed. I participated in the 2020 Wild Idea Incubator, facilitated by Adam Gibson and sponsored by Odonata Foundation. Through that process, I launched TransitionAg and began experimenting with value propositions.

WWF Local Learning Labs

As part of my work with The Australian Centre for Social Innovation (TACSI), we contributed to the World Wildlife Foundation (WWF) Innovate to Regenerate Local Learning Labs. The Labs were part of the Regenerating Australia film campaign, and focused on building local capability and ecosystems of regenerative entrepreneurship. We designed and hosted labs in Eurobodalla, the Adelaide Hills and Fleurieu Region, and Gippsland, experimenting with the Lab design in the process. We also developed resources to support communities to design and host their own Labs.

SECTION 4

Respond



CASE STUDY—SECTION 4

Respond

Opportunities and experiments to create the conditions for transition

Process

Opportunity areas—the detail

In the section that follows, each opportunity area is defined and explained. Some opportunities are defined by criteria, some include ideas. Some opportunities include a project example from working group collaborations (sub-projects).

Collaborative experiments

Four of the sub-projects I supported are highlighted alongside the relevant opportunity area. These sub-projects are experiments in change making—either by supporting transitions directly or by creating the conditions for transition.

Design methods

Working groups—sub-projects

Any change agent has available to them a number of ways of working to promote change. They may invent solutions, influence opinion, facilitate collaboration, procure investment, etc. In developing an approach for this transition project, I considered what ways of working were most relevant to the project (e.g. the transition need), most feasible for my skills and time, and most likely to promote change. I felt that getting involved in collaborative working groups dedicated to a key initiative, project, event, etc. was the most likely way to support change across an "ecosystem of responses".

Workshop design and facilitation

With design engaging more and more in social contexts, designers have developed 'design facilitation' approaches. The goal of design-based workshops is not only to hear various perspectives and find clarity through conversation, but also to co-create (generate) potential responses.

Value proposition testing: Lean Startup, Business Model Canvas

The disciplines of innovation and entrepreneurship offer a suite of generative tools and methods for developing and testing business ideas. The Business Model Canvas, created by Alexander Osterwalder and Yves Pigneur, helps to identify and experiment with the building blocks of businesses. Lean Startup, developed by Eric Ries, is an approach for quick value proposition testing.

Graphic design, branding, video, illustration, and website layout

Transition Design may focus on complex social change, but it is the visual, form-giving/making, and communication skills of designers that help people to make sense of complexity, imagine potential futures, experiment with ideas, and then make change a reality.

SOURCE

Kolko, J. (2007). Information architecture: Synthesis techniques for the muddy middle of the design process. 23rd International Conference on the Beginning Design Student Proceedings. Savannah, GA.

OPPORTUNITY
THEME A

Farmer Transitions & Capability

"There are those who choose the swampy lowlands. They deliberately involve themselves in messy but crucially important problems and, when asked to describe their methods of inquiry, they speak of experience, trial and error, intuition and muddling through"

— Donald Schön (1983)

IMAGE: Split Rock / Balancing Rock (2020). Wiradjuri and Kamilaroi country, Golden Highway NSW

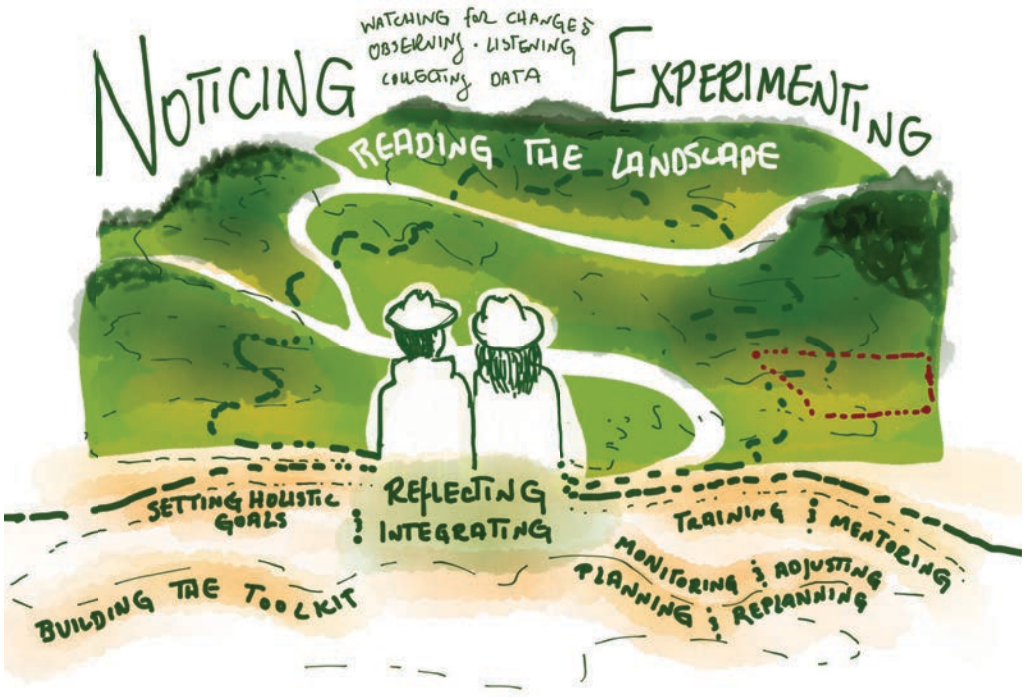


IMAGE: 'Reading the Landscape'



Participants in this research underscored that farmer capability is critical to being able to farm in a way that results in restoration, regeneration, and resilience. These are considered agroecological skills.

How might we increase knowledge of agroecology and on-the-ground skills for reading the landscape, experimentation, holistic decision-making, and regenerating ecosystem function? How might transition be supported through: land planning, business model development, financial planning, sequencing, and implementation of works? How might we grow networks for peers and mentoring? How might we support transition with the labor required, as in the case of tree planting?

Education, extension and support

Transition to Regenerative Agriculture requires the capability to undertake new methods and, in many cases, rework one's approach to farming. This is a tricky undertaking. Awareness is raised and capability is developed one person at a time. This is the primary role that educators, trainers, and extension agents play in transition, and many have a deep understanding of what helps dissemination of ideas and adoption of innovation be successful among farmers. They are at the frontlines of developing farmer capability to implement new management practices, to make decisions compatible with regeneration, and to navigate the stages of transitioning a landscape.

Taking up Regenerative Agriculture requires new capabilities like agroecological science and practices, reading the landscape, and holistic decision-making. There is opportunity to strategically extend education and extension to include these capabilities, as well as grow the market of support for Regenerative Agriculture.

Capability: Agroecology

Agroecology is sometimes used interchangeably with Regenerative Agriculture, but they are not the same. Agroecology is simultaneously agricultural science, practice, and a political movement. Regenerative Agriculture is underpinned by agroecological science and practices, and agroecological knowledge is critical to making decisions that work with nature.

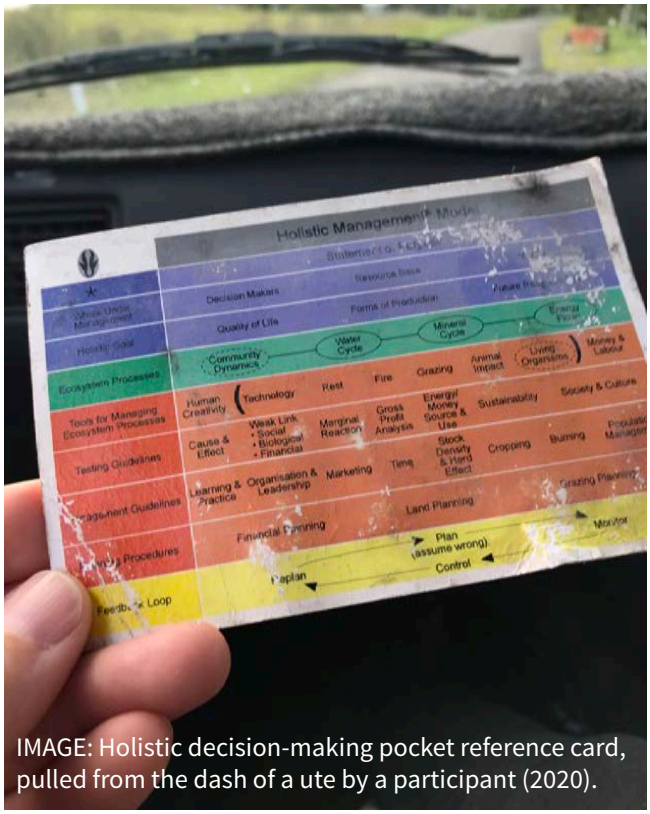


IMAGE: Holistic decision-making pocket reference card, pulled from the dash of a ute by a participant (2020).

Capability: Reading the landscape

One of the key agroecological skill sets is referred to as 'reading the landscape', or ecological literacy. Ecological literacy enables farmers to see different information in the landscape, and to have a better awareness and systems understanding of what is happening. Reading the landscape infers that practitioners take a whole systems view of ecological function, which may extend their observations beyond their property boundaries. Participants saw building agroecological knowledge and skills to notice differently and read the landscape anew as a first step in transition.

Capability: Holistic decision-making

The Holistic Decision Framework is a tool that supports purposeful decisions in complex ecological systems. The Holistic Decision Framework comes from Holistic Management (HM), pioneered by Allan Savory and Stan Parsons, but is not the entirety of the practice, which is primarily renowned for teaching high-density, rotational/ration grazing. Participants found the Holistic Decision Framework applicable across any form of land management, and even in life decisions. The Holistic Decision Framework was described as the farmer's go-to guide for navigating complex decisions. In fact, three different participants pulled a copy of the framework out of their dash or other easily accessible place during our interview.

The framework, which leads with the development of the farmer's holistic context and goal as the overarching frame, provides people with a series of lenses to think through the situation from an ecological systems perspective and a personal values basis, consider the tools and options available, work through testing and management protocols to decide the course(s) of action, and then observe feedback and make changes over time.

This approach effectively embeds a design process into farming, and the Transition Design approach in this guide has parallels. There is potential for further research into how the two could enrich each other.

Support, mentoring, and peer groups—for transition

At the time of this project, some support was available for Regenerative Agriculture but very little support was available specifically for transition. There was also a perception that the advisors who could support transition were at capacity. The farmers who did have transition support available mentioned how critical it was to have help: building their agroecological knowledge and ability to read the landscape; constructing a landscape repair and farm master plan; identifying the best or most appropriate training and education to undertake; developing a business model and financial plan; understanding and accessing markets; implementing key landscape repairs; navigating grants and funding; assessing improvements; and continuing to check in on progress and decision-making. They valued having a sounding board, whether mentors or peers.

In launching my TransitionAg business experiment, I conducted a survey to better understand specific support farmers were looking for. The survey asked participants to name their transition goals and specific support they were looking for, and finally they were asked to respond to potential offers. I shared survey findings on the website, www.transition-ag.com.

The following transition support needs got the most responses (29 responses total): How to profitably transition to Regenerative Agriculture (7 responses); how-to-guides for methods and quick problem-solving—particularly video format (e.g. holistic grazing, regenerative broad acre, cropping and planting routines, plant varieties and animals, replacing weeds) (6); Case studies with the how and the science, not just the outcomes (6); Synthesis of the information out there (4); Practical plans/steps to transition (3); Weeds—identification and what to do (4); Information relevant to a specialty or biome (3); Reading soil tests, assessing improvements (3).



PROJECT EXAMPLE

TransitionAg

This project is an example of: Using design and entrepreneurship approaches to develop, test, and iterate a business value proposition.

Origins of the business idea

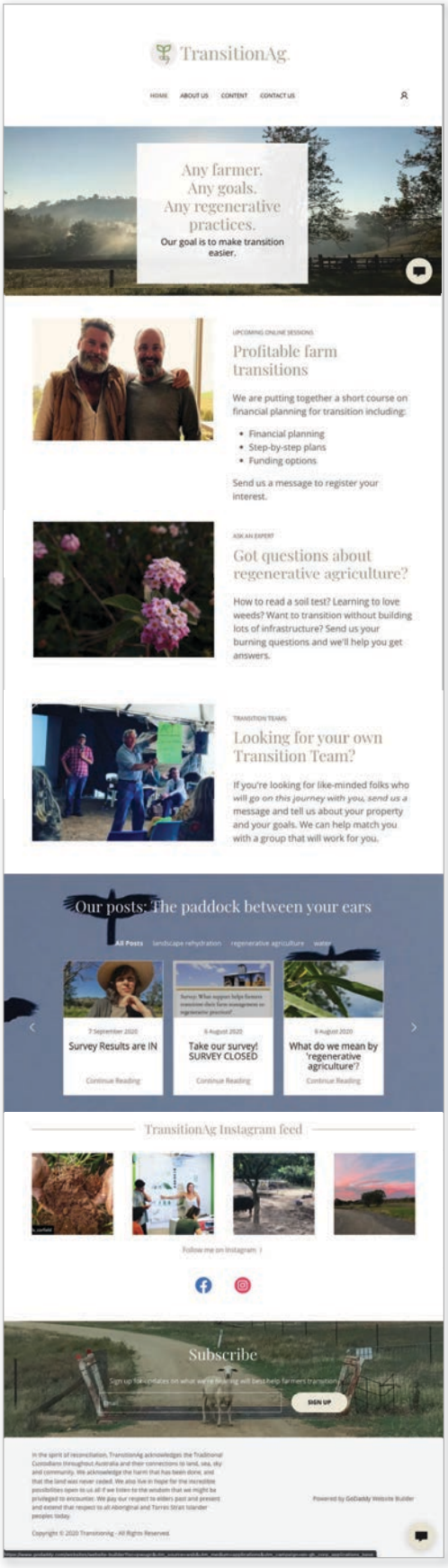
From the research, one of the pieces of the emerging Theory of Change was a gap in the support for transition. There were a number of ad-hoc supports in the sector at the time, often focused on teaching new techniques. Some offers went farther, providing guidance on the business of farming with expert and peer-based mentoring to help them solve management (and other) problems. By 2020, the market of support for Regenerative Agriculture was growing and diversifying.

Between 2017-2020, there emerged a number of new types of coaching offers, a new regenerative agriculture degree, a wave of fresh investment and financing models, etc. However, farmers typically still needed to assemble their own end-to-end regenerative management approach, together with the financials, planning, on-farm transition, supply chain, marketing and distribution. There was also more demand for training than supply, and offers were financially out of reach for some.

2020 Wild Idea Incubator

During my second round of interviews and scoping feedback discussions in 2019, more than one participant remarked that they felt that my research held a business for supporting transition. There were certainly market gaps. Given my lack of expertise in agriculture, I didn't necessarily feel this was my role nor did I feel that my research was anywhere near ready, but from a research perspective, it was worth testing. I applied and was accepted to the 2020 Wild Idea cohort, sponsored by Odonata Foundation, coached by Adam Gibson. Charlie Arnott and Bruce Maynard acted as my advisors. The incubator stepped us through Lean Startup and business model development activities in weekly coaching sessions with peers.

IMAGES: Left—TransitionAg business cards. Center—TransitionAg website iteration 2. Right—TransitionAg website iteration 3.



Value proposition testing

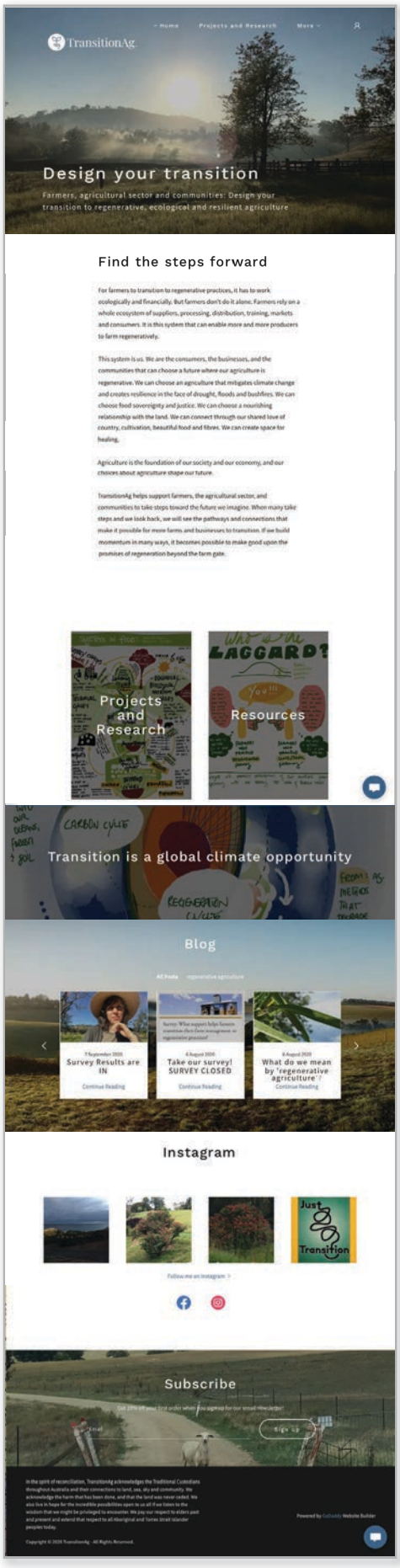
From a methodological perspective, I treated the business idea as a Transition Design experiment. During the incubator program, I fleshed out the idea and launched it through Instagram and Facebook with a website, blog, and a survey.

I began by testing offers like: coaching, peer support, online learning, resources and referrals focused on transition, where my role might be to "hold the network", bringing together various experts to support the offering, and providing insights into transition through research.

The survey drew 29 responses from a very diverse set of farmers, including grazing, cropping, viticulture and horticulture. The need for technical support came through strongly. Specific mentions included how-to guides (especially video) for methods and quick problem-solving, case studies, working with weeds, soil testing and improvement, information relevant to a specialty or biome, etc. How to profitably transition to Regenerative Agriculture was the most common request. Synthesis of the available information and practical plans/steps to transition were also mentioned. In terms of support format, there was some interest in online small group/peer sessions—alongside "boots-on-the-ground" support. For participants willing to be contacted, I followed up and tested a referral offering—assessing needs, identifying supports, making referrals. I tested business model options like farmer pays or referred advisor pays. Neither party were adverse to paying, but I leaned toward farmer pays to assure independence. In design we call this approach "live prototyping", and it required very little effort to set up and test.

The breadth and depth of expertise that would be required to meet these requests speaks to a whole market of support. Together with my advisors, we furthermore theorized that the need was broader than farmers—that there was also a need to support transition across the sector, including with suppliers, distributors, and retailers.

As mentioned, I found it tricky to be involved in more than one project at a time, so I put the value proposition testing on pause to focus on working groups. However, the TransitionAg business proved to be an important vehicle that enabled me to join or form working groups. It meant that I could be a part of collaborative efforts to address needs and gaps in the market and could be paid. Participating in the working groups as TransitionAg, in turn, enabled me to build awareness of the concept of transition and grow social media reach and impact. I also realized that having an online platform allowed me to talk about this project and research, putting ideas out into the market as part of the design experiment. Recognizing this additional value proposition, I updated the website to better reflect the transition collaboration offers, including case study information from this project. At the time of this writing, I have been through three iterations of the business concept, which is reflected in website iterations.



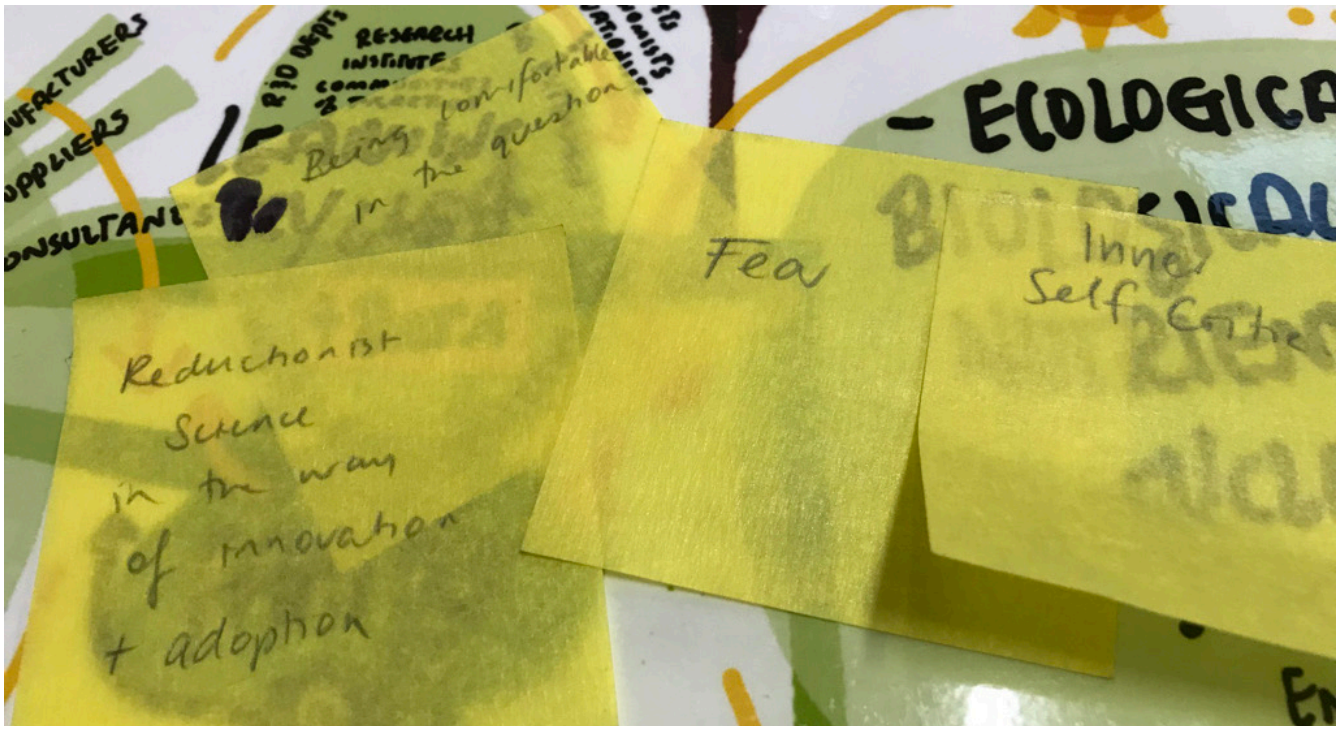


IMAGE: Barriers to transition named by workshop participants

Transition story: *Sell the bulldozer*

The following story was shared by a farmer who had first-hand experience of supporting another farmer to transition to Regenerative Agriculture.

Trigger warning: discussion of suicide ideation

"[I ran a] 'Farmer-to-farmer' workshop through Landcare—I applied for a grant to do it as a pilot exercise through the rural counseling service. [In the first session there was a] lot of arm folding. By the end they were relaxed, happy, wanting to know 'Is this true?' I had photographs, this is me.

Phase 2 was 'come have a look'. We had a busload. Everyone turned up here to see the place. Seeing is believing. Phase 3 was one-on-one. I think there were eight. I got half. That was the harder part.

By the end of the second phase – at the woolshed – the wives came, more women than blokes – desperate for their husbands to wake up and see. The thing that really got me: they were in tears. And they brought me to tears.

One farmer said, 'I was about to shoot myself. There was no end. And you've opened the door.' It was probably the most emotional day I've ever been through—because it's about life and death.

The next phase was to go see their place and I did. But by then this guy wasn't available. He was hiding. I talked to my daughter [before I went]—she had training in social science—how to approach him, to approach the situation. 'Don't go in guns blazing', she said. 'Find out: where did he come from? His family. Why don't we have a cup of tea? Get to know the wife, kids'.

I said I'd like to see a map of your farm. The wife got the map out. They had a few lines drawn. So I thought: this is good. Let's go for a drive. There was a huge great bulldozer sitting there. D9. And bare ground—hard, and compacted. They were ripping the ground. Why? To make it softer?

I asked, what do you reckon the bulldozer is worth? $150K. You could redevelop your whole property for that. I did mine for less than that.

Two years later he won the Landcare award for farmer of the year. And he was on a suicide mission, so there you go. But people can do that. [This is] job creation. Let's train people to do that...to know the game. They have to have the confidence to tell them to sell their bulldozer—to turn the farm around by selling the bulldozer.

But if his wife wasn't there, he wouldn't have been there. She got him to the woolshed. He wouldn't have gotten there himself".

—107 Regenerative Farmer

2

Landscape repair

One pathway into regenerative approaches is to undertake landscape repair. Landscape repair is usually project based, which means it has a clear beginning and end, and is attached to clearly defined expected results. Successful landscape repair makes an—often visible—immediate or near-term difference for a property, production, and overall landscape health. Landscape repair can be a pathway for learning about landscape function, ecosystem health, and reading the landscape, seeing how one's property can work within and is impacted by the broader landscape, and building agroecological skills. Landscape repair is potentially a less difficult starting point than re-tooling an entire management practice, or learning farming from scratch. It may also be a less threatening way to deal with damage that has been done through past management practices because that damage (such as erosion and soil compaction) is potentially highly visible and hard to dismiss.

Getting the vehicle running *(better/again)*

Landscape repair projects as well as design and planning support are pathways to transition. Landscape repair projects can support farmers to take the first steps in transition by identifying strategies to repair ecosystem function—and then directly implementing the strategies and monitoring for results. Landscape design and planning can help farmers create a vision for a transitioned farm, and identify what needs to be done so that the landscape and its ecosystems will function optimally.

Through landscape repair, design, and planning, farmers can learn how farm management works hand in hand with the overall landscape function. Understanding and taking steps to restore or ensure landscape function is a bit like auto repair. See image: 'Analogy'.

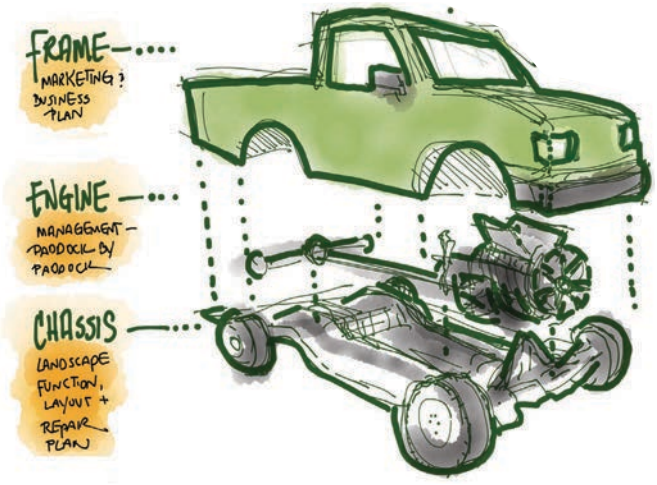


IMAGE: Analogy—Landscape repair and vehicle repair

An auto chassis provides the structure for a vehicle, without a chassis there is no ability to direct energy and motion. Like a chassis, the major ecological functions of the landscape—energy cycle, nutrient cycle, water cycle, biodiversity—must be working well in order to support production. Rather than taking from these, in an extractivist mindset, stewarding these cycles sets the foundation for production. Farmers seeking to transition can work on landscape function as a starting point. This may translate to activities like fencing off riparian areas, repairing hydrology, planting trees, and re-locating infrastructure.

To continue the analogy, agricultural management is the engine that is embedded into the landscape function chassis. It is perhaps more appropriate to say that both agricultural management (via farming methods) as well as landscape repair interventions can have an effect on landscape function as well as productivity.

And finally, the auto body is like the business model, marketing, and distribution. Not pictured is the human is the driver, pointing the vehicle toward their goals, or the mechanic, advising and supporting the driver.

Natural Sequence Farming, developed by Peter Andrews, is an example of landscape repair methodologies. It may be associated with hydrological interventions like leaky weirs and trenches/contours, but interventions are a means to achieve the goal of landscape function for a productive ecosystem. The exact same interventions are not always used. The association with hydrology sometimes misses the goal of re-establishing hydrological function and nutrient flows so that *plants* (as inseparable from and together with landforms, soil, and geology) can act in their capacity of managing surface water, ground water, hydrostatic pressure, and nutrients, etc. to maximize photosynthesis. Andrews puts a significant amount of focus on how the Australian continent used to function, and the levels of productivity possible when it functions again.



Taking up Regenerative Agriculture requires acquiring new capabilities and practices, but it can also mean piecing together your own transition management approach from scratch. In extension terms, the adoption threshold is high, and can be a deterrent. Proponents of Regenerative Agriculture warn against over-simplifying regenerative approaches to the extent that regenerative outcomes may be compromised. How might we make adoption easier without oversimplifying?

One strategy is to develop transition pathways. How might communications, education, training, and extension activities integrate practices into different transition pathways for various contexts? How do transition pathways vary by: scale (from small blocks to millions of acres), industry and product type (for example viticulture, cane growing, cattle, wool, and grain), biome and climate conditions, circumstances (for example debt and succession), business model and market, the conditions of the property and ecosystem, the personal goals and choices of each farmer and farming family, etc.? Amongst the variance, are there patterns in transition?

Farm transition stories

About these transition stories

As mentioned, suitable transition pathways depend on an array of factors. Despite any commonalities, no two farms are alike. The following section contains a series of 'transition stories' that present a variety of transition experiences, challenges, and needs based on patterns observed through this research. They have limitations—they do not represent all farmers interested in transition, or even all of those in NSW, Australia, and they overly skew white and male. They are intended to communicate diverse perspectives of farmers interested in Regenerative Agriculture. Farmers may use them to draw from others' experiences. Industry stakeholders may use them to help meet a range of needs. For anyone wanting to work with these transition stories or develop your own, I heartily encourage taking a design approach, including testing with your audience.

What is a persona?

These transition stories are based on a tool from user-centered design and service design called 'personas'. Personas are an exercise in empathy. They are developed from qualitative research and express patterns of experience, needs, and perspectives among stakeholders. Personas are often used to identify the diverse needs in a market, help gauge whether or not offerings meet the needs in a market, or to hone offerings to specific audiences. A set of personas should quickly communicate the diversity across an audience and the complexity of people's goals, contexts, and choices.

Personas deliberately avoid depicting a single individual, in part to protect people's identities. Care should be taken not to over-generalize, over-simplify, or stereotype. Personas are no substitute for learning from people, getting their feedback, and involving them in decision-making. Just as the map is not the territory, a persona is not a person or family, their specific circumstances, challenges, strengths, and goals. Stories of real people are an alternative to personas, noting that express consent must be obtained to use people's stories.

DESIGNING REGENERATIVE TRANSITIONS ©2024 MICHELLE MILLER



TRANSITION STORY

The next generation

Making their own way

From a few generations of farmers, perhaps having come back to the farm after education and work elsewhere, this farmer navigates protecting the family reputation while making their own way. In many ways, they have the support of their family. On some things, however, the father just won't budge. They are making changes, but it's slower than this farmer would like. There is a lot of upkeep, maintenance and some landscape repair to be done, and not a lot of cash lying about for that work. A degree in ag science was a good foundation, but this farmer's values are more in line with regenerative approaches, and no matter how many extension events they go to, they still end up working it out as they go.

Transition challenges and barriers

- Hard to find practical, real-world examples of application
- Regenerative approaches have to be integrated
- Have to save for a while for big changes; making infrastructure improvements a little at a time

Potential transition strategies

- How-to videos, case studies, demonstrations
- Integrated education / extension offers
- Grants and funding for fencing, water infrastructure and tree planting
- Succession planning



TRANSITION STORY

Industry lead

Best in class

This farmer aims to be a best in class producer. Always offering their property as a research trial site, they quickly adopt proven new technology. Targeted spot-weeding, beneficial pests, sensors, drones? You got it. Careful, vigilant management keeps this sizable farm organized and profitable. Not much can be done about drought, it's part of being a farmer. You can anticipate that climate volatility will be a part of the big picture, and you just have to take it in stride when it comes. As part of an export industry, there are constraints on what they can do, but collaboration keeps the industry competitive. This farmer is proud of their product and doing their part to "feed the world".

Transition challenges and barriers

- This farmer always looks for opportunities to lead innovation, but taking up innovation from outside industry channels is risky and can be socially unacceptable
- Making drastic changes on farm risks years of production
- Export markets dictate product and price settings

Potential transition strategies

- Research into regenerative approaches and product development for cropping in their industry
- Further development in diversifying and transitioning broadacre monocultures
- Building local and alternative markets, processing, and distribution channels



TRANSITION STORY

Crisis response

Transition challenges and barriers

- The landscape—or what's left of it—is one of the only resources that remains
- Limited knowledge of regenerative practices
- Significant damage impacting farming viability

Potential transition strategies

- Support to develop/revise the farm master plan
- Training in regenerative approaches
- Funding and incentives for regeneration

No other way forward

A farming family for decades, a future in farming seemed like a solid bet for this farmer. Some crises creep up—like slow erosion of profitability, soil, and ecosystem health year on year. Other crises come fast—a health scare that stops them in their tracks; a flood or bushfire that rips everything away. Either way, this farmer reaches a point where continuing to do things as they have been doing becomes untenable. They have to find a new way forward, even though the path is unclear and resources are thin. With low input costs and some farm modifications, perhaps paid for by selling off remaining equipment, they might survive. Whether discovered through experimentation or coming across a course, this farmer arrives at working with nature as the most cost effective strategy. *Research has shown crisis to be one of the most common causes of a dramatic shift in perspective leading to transition.*

TRANSITION STORY

Tree change

Transition challenges and barriers

- New to farming
- Off-farm employment—funds transition efforts but constrains time to weekends and holidays

Potential transition strategies

- Building skills: reading the landscape, holistic decision-making, practical skills, e.g. managing grazing
- Support to develop a plan for regenerating the farm
- Business model and financial planning
- Grants, labor, and expertise for key projects



Seeking quality of life for their family

Well educated, two incomes, experienced entrepreneurs and business people, familiar with navigating grant and funding mechanisms, and social media savvy, this family bring skills and resources that other farmers don't always have. They are hoping to bring an ethos of sustainability and community building to the farm. But they still have to learn the basics of land management. As graziers, they will be grass farmers and livestock managers. And the property, overgrazed for a long time, will need rest and repair.

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TRANSITION STORY

Just need the land



Transition challenges and barriers

- Sufficient funds for a down payment and work that will need to be done once a property is purchased
- Getting experience managing a property

Potential transition strategies

- Options like farm share, farming on other people's land (FOOPL), cooperatives, and farm management positions as a stepping stone
- Alternative funding and investment mechanisms
- Grants for on-farm projects

How to make a dream come true?

Always looking for ways to live a more self-sufficient lifestyle, deeply connected to country, this pair have taken every course available—Permaculture, Biodynamics, Holistic Management, No-Kill and Pasture Cropping, Syntropic Agriculture, Agro-forestry, learned from Aboriginal cool burning, you name it. They've put everything possible to use on their tiny 1/4 acre block in the city, but they long for land. They've been renting for years and are still saving up for a down payment on a small block. People leaving the cities during the COVID-19 pandemic have driven up land prices, and their dream looks even further away than before.



TRANSITION STORY

Strong & determined

Transition challenges and barriers

- Property was flogged out by previous use
- Business would benefit if the whole property could be transitioned faster but has to make a choice about where to invest available cash

Potential transition strategies

- Markets favorable for small producers and high-end products
- Access to niche markets around the world
- Grant packages for end-to-end transition or eliminate the paperwork with one-off grants (tree planting, fencing riparian areas, infrastructure)

Success requires more than 'regenerative'

This farmer has returned to the land, buying an old dairy after a successful but grueling career in management and marketing. She's determined to make a success of it, and through her contacts has found a niche market interested in specialty, high-end wool products. She's a hard worker and grew up on the land. Patronizing comments about 'lady farmers' have made her even more determined, but she knows to work smarter, not harder. And besides, most of the food around the world is produced by women. Her farm will need to be regenerative, but she needs more in order to compete: the best breeding and genetics, state-of-the-art facilities, and a competent team. Her challenge is to establish firm footing in her market while transitioning the property and getting everything working well.



TRANSITION STORY

Continually improving

Transition challenges and barriers

- Remote location
- Property size requires cost-effective practices
- Limited access to new and novel approaches

Potential transition strategies

- Online learning for exposure to new practices
- DIY how-to videos and case studies
- Research that includes economics

Quietly making changes over time

This pair don't make a fuss or ruffle any feathers, they get on with their work. They have a family to raise and a large property to manage in a fairly remote area. They've never been comfortable with chemicals, and they're always looking for more natural options. It has to make sense financially, too. They have crops and livestock, and extensive re-fencing is impractical. With such a large property they have to feel confident that any changes they make will be cost effective and deliver a return—so they trial things. In a remote area, new things either have to be readily available or they have to be able to do it themselves. They like to be open minded but clear about what works for them, and are happy for the latest technology to sit alongside centuries-old practices. With their strong partnership, they've been able to think things through and implement a lot of changes over the years, even if they took their time.

TRANSITION STORY

What's old is new again



Transition challenges and barriers

- Do regenerative practices get different outcomes as compared to traditional practices, Biodynamics, or elements of Permaculture that they might incorporate?
- What will 'regenerative' add to the business?
- Will the growth in demand continue?

Potential transition strategies

- Information comparing models and results
- Growth in consumer demand and regenerative organic certification schemes

Regenerative organic?

This farmer's family have been growing food for centuries, and operate a multi-generational business growing veggies outside Sydney. Her Chinese relatives came to Australia with the gold rush and found their living through market gardens, adapting to the climate and geography. The Vietnamese side of her family migrated during the 'green revolution', and felt forced to give up many of their traditional practices to keep up with cost pressures. They cannot expand locally and so have to be smart about what they do. When supermarkets introduced organic sections they transitioned their blocks to organic and brought back some of their traditional practices. They are curious whether regenerative organic is meaningfully different in outcomes from what they've known all along. They are looking into certification, wondering if it will hold value long enough to make the expense worthwhile. Either way, they've gotten good results combining the old with the new, and will just get on with doing whatever works.

TRANSITION STORY

All in the family



Four generations of land managers

This farmer is proud of the family legacy, and is determined it won't suffer on their watch. Their family has been managing the property for generations, and grandfather was an absolute legend. They've done well in good times, got lucky a few times—found a sweet spot in the market, and there have been tough times too. They've built their industry relationships so as to make well-informed decisions and even have a bit of influence. People sometimes suggest that they do this or that differently, but what's the reason in making change when they've done OK so far? Sure, things are tough right now, and people talk about climate change, but this land has always been a land of drought, flood, and bushfire.

Transition challenges and barriers

- History of success favors a steady hand and risk avoidance
- Legacy and succession are important: Finances, management, family, reputation
- Climate variability is to be respected but change is not perceived as real

Potential transition strategies

- Growing social acceptance and accessibility of regenerative approaches
- Products and methods requiring little adjustment to machinery, application, or practices and that are readily available alongside products currently being used
- Incorporating changes over time
- Succession planning

TRANSITION STORY

The innovator



If there's a popular new practice, chances are they're already doing it

A natural innovator and early adopter, this farmer is relentlessly experimenting with new ways to meet their own ideals and make ends meet. Scouring any available resource and following leads, this farmer is far ahead of trend. If there is a new practice getting popular, it's highly likely that this farmer has been doing it for a long time—and may be well beyond it—but no one knew what they were talking about back then. That part has been pretty hard on them and their family. He's had so many experiences of being dismissed out of hand, derided, and even shunned, then proven right decades later—with no recognition. There is a social price for marching to the beat of a different drum. Investing time and resources in forging his own way forward, profitability can sometimes be thin or non-existent.

Transition challenges and barriers

- Relevant supply chain and market likely does not exist yet
- Financial management
- Push back from others; social isolation

Potential transition strategies

- Creative development of supply/market options
- Business model and financial planning
- Partnerships for business, advertising, marketing, social media influencing
- Teaching/training others in new methods

TRANSITION STORY

Weaving community



Transition challenges and barriers

- What markets exist in the space between local, national, and global scales?
- Incentives, markets, funding etc., all seem to favor large scale, conventional producers

Potential transition strategies

- Investment and incentives for local, inter-local, and cross-regional, small to medium-sized producers, entrepreneurs, technology, communications, supply chains, and markets

Local is the future

This pair believe deeply in the power of community. When not working on the farm they can be found organizing some new gathering. They are constantly weaving relationships and the fabric of community.

They also believe that investing in local—regional, remote, and rural local—is how we can transform both our economy and our environment to something that feels more livable, more regenerative. But they can't depend on farmer's markets without off-farm income. A level of inter-connection across regions is a necessity for food security, but the dominance of global markets doesn't seem to be working consistently in favor of food security or healthy ecological systems. They want to help address the disconnect between local and global markets, and build community at the same time.

TRANSITION STORY

Locked in



Transition challenges and barriers

- Scale plus sunk costs in equipment and machinery
- Limited regenerative options for broadacre monocropping

Potential transition strategies

- Further development in diversifying and transitioning broadacre monocultures
- Awareness and availability of regenerative strategies: multi-species and cover cropping, pasture cropping, no-kill cropping, stress-free stockmanship, self herding; liquid and pellet compost and biological products
- Market support for regenerative products

Interest in transition, but the path is unclear

This broadacre farmer is convinced of the value of regeneration for their property and the environment. They have started with easy things: fencing the boundaries of the property and re-introducing animals, but can't incorporate more fencing at this point. They are miffed by the idea that zero chemicals and high density rotational grazing is the only way to be regenerative and feel slightly rejected by the movement. Although they currently rely on a monoculture, they see the value of biodiversity and business model diversity, but they are not finding a lot of information on regenerative cropping. The local information seems to all be about grazing or mixed farming—and there's definitely no information on how to transition. They feel locked in, either way they go, and frustrated.

RESPECTFULLY, NOT A STORY.

For the love of Country



On country, without Country

[Author's discussion] Aboriginal and Torres Strait Islander culture, like other First Nations cultures, is embedded in country—in place. History, identity, community, kin, and lore (as law) are tied to place. During colonization Aboriginal and Torres Strait Islander peoples were removed from their country, cultures, and kin.

Colonization is still here: the effects of those actions together with existing societal norms and systems have a tendency to structurally reinforce and perpetuate both marginalization as well as harms done, causing ongoing harm. An Australian Prime Minister has said, "Sorry", and there is a growing reconciliation movement, but at the time of this writing there has been no treaty or Voice. The "gap" is not "closing". The land rights movement has helped to return some land to the Traditional Custodians. Aboriginal and Torres Strait Islander people walk in two worlds—mainstream Australian culture and the culture and lore of their ancestors (where it still remains).

Programs to support Aboriginal and Torres Strait Islander people have been developed (and some have gone). Many opportunities require access to land, including ranger programs, cool burning training, native food industries, cultural tourism, clothing, crafts and art, and more. Some of these are in combination with agriculture. How might Aboriginal and Torres Strait Islander self-determination and agency be supported, in ways that are do not perpetuate colonization, are not extractive, and are careful with commodifying culture and nature? How might we restore access to land? How might we give back, pay the rent, and reconcile?

Some regenerative practices originated through millennia of First Nations practices. How might the knowledge traditions that informed regenerative practices be better acknowledged? Holding a goal of local and global environmental regeneration, there is potential to learn from First Nations wisdom—if there is a willingness to share that intellectual property. How might we learn what it takes to transition, together?



OPPORTUNITY
THEME B

Sector Capacity

"...they all agreed that the in-between place was strange and confusing. They hoped to get out of it, in favor of either the Good Old Days or the Brave New World, as quickly as possible..."

—William Bridges *'Transitions: Making sense of life's changes'* (2004)

IMAGE: Eastern long-necked turtle (2021). Wiradjuri Country.

4



Science, measurement, & research

Participants described the possibility for holistic science, research and measures farmers can use that reflect ecology, biology, chemistry, complex adaptive systems and Indigenous knowledge.

Measuring regenerative outcomes

The benefits of Regenerative Agriculture are described as follows, summarized from Massy (2017), a longitudinal study published by Ogilvy et al. (2018), and participant input. Benefits can be translated into measures:

Ecological—near term, over time, through weather events and climate variability

- Soil structure, absorption rates; water holding capacity; soil biology; carbon sequestration
- Plant and animal resilience; insect defense
- Decrease in chemically-related ecological harm
- Increasing biomass, biodiversity, complexity
- Landscape resilience—drought, bushfire and flood mitigation and resilience; faster response after stress
- Temperature regulation (e.g. via plants, water, soil)
- Ecosystem function: energy cycle—maximized energy use, photosynthesis, and carbon sequestration; water cycle—earth macro cycles, catchment function, small water cycle; nutrient cycle—waste loops closed, nutrients returned to soil
- Regenerated landscapes; Resilience within planetary boundaries; Mitigated climate change impacts

Human / Social

- Farmer quality of life and mental health improved
- Decrease in health issues connected to farming
- Farming accessible to more people, diverse people
- Growing, thriving farming communities

Financial / Economic

- Farming remains economically viable year on year (in the context of market factors)
- Profit margin retention with yield (revenue); funds in reserve for down times and future investment
- Risk reduction via diversified revenue streams
- Thriving local economies and food security
- Local—remote, rural, regional, and urban—and national economic resilience through disturbance
- Food sovereignty

SOURCES

Massy, Charles. (2017). Call of the Reed Warbler: A new agriculture - a new earth. University of Queensland Press.

Ogilvy, S., Gardner, M., Mallawaarachichi, T., Schirmer, J., Brown, K., Heagney, E. (2018). NESP-EP: Farm profitability and biodiversity project final report. Canberra, Australia.

Sustainable Markets Initiative (SMI) Agribusiness Task Force. (2022). 'Scaling Regenerative Farming: An Action Plan'. White paper. Accessed via: https://www.sustainable-markets.org/taskforces/agribusiness-task-force/

5 Finance, investment, & insurance

Participants described a need for financial mechanisms fit for all shapes and sizes of operations, mechanisms that promote non-extractivist, holistic management, reward regeneration and resilience, and spread risk. There is opportunity for financial mechanisms to ensure benefit is returned to the farmer, farming is viable and affordable long-term (e.g. does not raise land prices without a corresponding raise in farmer income), does not lock aspiring farmers out of land purchase or participation in financial mechanisms, and does not drive out smaller farms.

Carbon and biodiversity markets are a developing opportunity. As SMI reported, currently there are "a range of different approaches, not all of which are credible and trusted", but interest remains for "a well-functioning market with a credible system of payments for environmental outcomes, trusted by buyers and sellers alike, and helping to fund the long-term business case for regenerative farming" (SMI 2022).

6 Supply, retail, processing, & distribution

The capacity of supply chains, retail outlets, processing facilities, manufacturing capabilities, and distribution to enable/facilitate, support, and procure regeneratively produced products enables transition.

As regenerative approaches are taken up in various types of cropping, there is opportunity for innovation in equipment, methods, and inputs. Equipment sometimes has to be modified, and there may be demand for contract options.

Livestock producers often require additional fencing, flexible fencing, water infrastructure, riparian protection, and tree planting. Livestock producers seek a good life ending for their animals ("just one bad day"), suitable abattoirs, on-farm, and home kill options, and opportunity to differentiate their product. Producers are looking for (local) processing and distribution that maintains and rewards quality.

Regenerative Agriculture increases demand for natural and biological inputs (i.e. compost, vermicast, biochar etc.), and cost-effective applications like liquids and pellets. See the Compost as a Catalyst discussion for more detail.

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IMAGES: Compost Buddy and Compost for Conservation Cropping project advertising materials

PROJECT EXAMPLE

Compost as a catalyst

This project is an example of:

- Co-designing and co-facilitating transition workshops
- Engaging participants in generative activities
- Supporting a collaboration with visual communication and marketing skills

Growing the market so compost can be a catalyst for transition

As part of this research, I joined a couple projects already underway with Bruce Maynard and the Constructive Farming Co-operative: Compost Buddy and Compost for Conservation Cropping. Both projects were aimed at increasing the overall market demand for high quality recycled organics in order to divert more organics from the waste stream and return nutrients to food production. The projects were made possible by grants from the NSW EPA under the Waste Less, Recycle More levy.

Compost is a recognized catalyst for landscape and soil regeneration, and presents a significant opportunity to reduce waste. Recycling organics, e.g. via the composting process, is an opportunity to close the loop, bringing nutrients and fertility back to farms and the landscape. Although compost and fertilizers do not work the same way, compost helps create a pathway to reduce and optimize fertilizer use, and thus is a significant enabler of Regenerative Agriculture transition.

The Compost Buddy project delivered an online compost advice tool with information, videos, and case studies, and a series of workshops to test the tool, share information about compost, and gather land manager questions. Workshops were conducted in 8 regions in NSW, with 160 participants. The first half day of the workshop was dedicated to compost and the second half day was dedicated to transition to Regenerative Agriculture.

The Compost for Conservation Cropping project included a compost demonstration study, field days, and online events during the COVID-19 pandemic. Before my involvement, a total of 13 on-farm events had been conducted, featuring agroecology and agronomy workshops as well as a demonstration of compost spreading across different broadacre crop and pasture types. Joining the project after the field days, demonstration sites, website, and advice tool had been set up, my role was to design and co-facilitate workshops and Facebook Live sessions with Bruce Maynard and featured experts, produce the events (including coordination and social media advertising, support reporting), and update the tool and website based on scientific advice and participant feedback.

I facilitated five expert extension events on Facebook Live, providing Australia-wide and even international access to experts speaking on a range of in-depth discussions on compost use and biological inputs. The Facebook Live series attracted 193 participants across the 5 events, and 4,199 views.

Key takeaways

The data from the two projects provided rich insight into questions from land managers with respect to compost and biological inputs, and how to increase demand. In order to grow the demand for recycled organics among farmers, we learned that it will be important to meet the existing demand for quality compost and biological inputs, grow demand through further education and information, ensure capability for successful application, and build capacity for on-farm composting. The compost demonstration study had surprising results in the face of drought, and warrants further research into compost effects on drought resilience. This will be discussed further in this section.

More compost information and knowledge

Farmers are hungry for more information about compost and other biological inputs, assessing quality, finding waste sources, and how to make these products themselves. There is limited information available for on-farm composting—most of the information available is for garden-scale composting.

Participants wanted information about what compost is, the science behind it, and how it works. Participants were interested in how to judge the quality of compost and if it is finished or not, sources of compost supply, and where to find suppliers and advisors. They were curious about the different composting processes, and what ensures quality in those processes. They wanted to know what to expect in terms of benefits from compost, timing, and evidence.

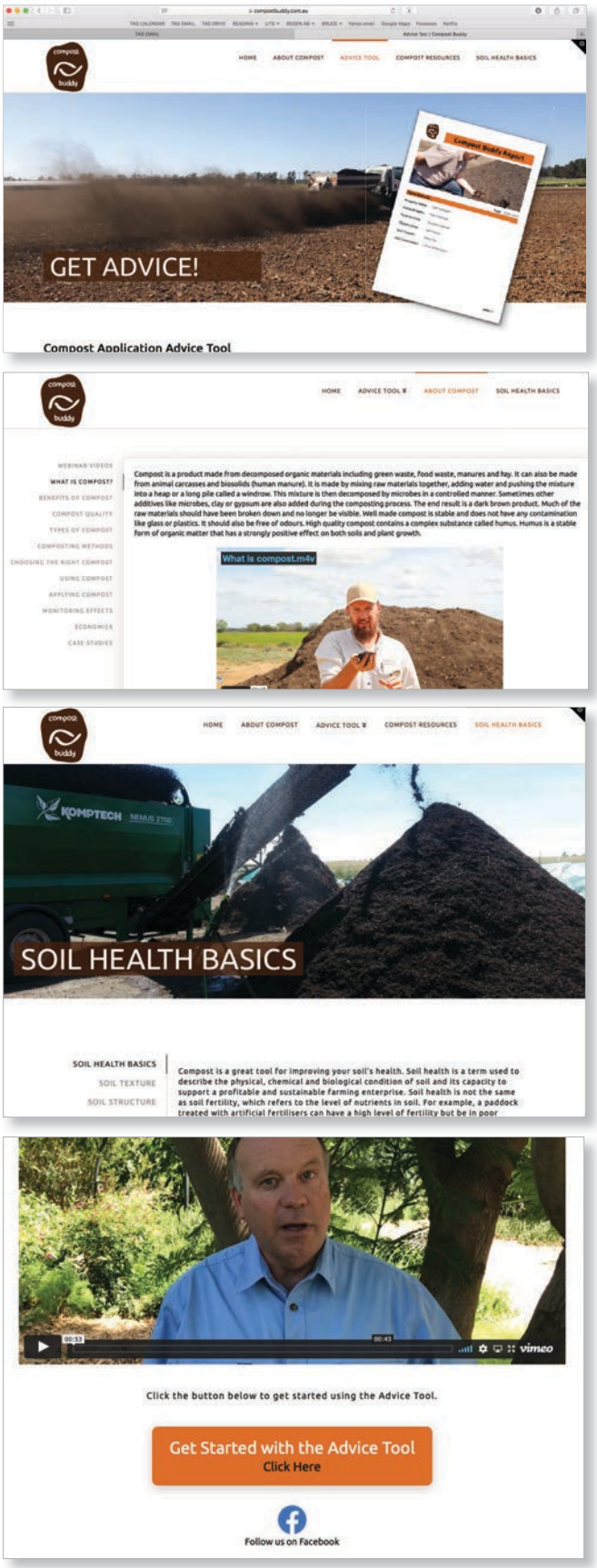
Participants wanted to be able to discern between products, identify quality products, know what they do for soil and crops, and how biology (inclusive of bacteria and fungi), chemistry, and nutrients work together. There is a need to understand how biological products work as compared to fertilizers. Assessing the appropriate product can involve understanding soil and crop nutrient needs together with the nutrient component of available compost in order to make appropriate decisions about a product or combination of products for a given situation and timing. Participants also wanted guidance in finding testing facilities, requesting compost tests, and reading those tests.

For farmers to work with compost and biological inputs, they need to understand application methods in combination with management, quantities, timing and frequency—relevant to crop, soil and climate type.

There was a desire for information to include the economics (costs and benefits), particularly for rural and remote locations. Participants were looking for examples and case studies relevant to their biome, soil type, climate zone, and crop type, etc.

Demand for quality, finished compost

There is more demand than there is supply of quality (low or no contaminant) finished compost. Consistently across NSW, farmers were looking for more compost than was available, and higher quality supply than they were getting. Farmers have experienced issues related to contamination and unfinished compost, which was sold as finished compost. Contaminants like plastic, debris, and chemicals have occurred in compost supplies, resulting in damage to crops and contamination of soil. Unfinished compost, which is often hydrophilic and/or still 'hot', has a different effect on soil and crops than finished compost. With finished compost, the nutrients are readily available for plant uptake. Unfinished compost has nutrients that have not been fully broken down, can damage or chemically 'burn' crops, and can cause heat damage to crops. Always looking for opportunities, farmers were interested in uses of immature compost. Another related option is learning to amend compost and soil to meet nutrient needs.



IMAGES: Compost Buddy website pages and Compost Buddy Advice Tool report cover.

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Increase capacity and finish compost on-farm

Given the constraints of current suppliers, farmers are open to the potential to obtain composted organic material from facilities that meets the AS4454 standard but is not yet fully composted so that they can 'finish' the composting process on-farm. Finishing compost on-farm is potentially a time- and space-saver for facilities and a cost saver for farmers. In order to finish compost on farm, producers would need to know that on-farm finishing is possible and then receive guidance on obtaining a quality 'base' product suitable for finishing and appropriate for their crop type. They would be looking for tips and guides for finishing compost including methods and troubleshooting issues, EPA compliance regulations, and any environmental controls.

Making compost on-farm

Farmers are very interested in making compost and biological inputs themselves, from raw inputs, which would help address the broader capacity for organics recycling, ensuring as much of our available organic material as possible is returned to the agricultural production system. There is awareness that there are EPA requirements specific to on-farm composting, and farmers would like to be confident that they set up on-farm composting within appropriate environmental controls. Materials available are quite diverse, and so a range of "recipes", methods, and techniques for troubleshooting and correcting would be needed. Farmers may not have all the materials they need for composting on-farm, and so coordination with others to source input materials and undertake quality management is an opportunity. Distance to facilities and the cost of getting programs going in regional areas can be an issue, and so making compost on-farm may be an attractive option for farmers in rural and remote areas.

Other biological inputs and applications

There are more products made from recycled organics available to farmers than compost alone. In the right context, they can be more cost effective than compost and still provide ecological and production results. Biological products such as biochar, and pellet and liquid applications made from materials like compost and vermicast, have a broad range of applications: surface, sub-surface, seed inoculant, spray irrigation, drip irrigation, foliar spray, etc. Participants wanted to better understand the options. Introducing these various applications can require training as well as specialty application equipment, which can be bought, modified, or contracted.

Further research into compost-related drought and climate resilience benefits

Another compelling argument for further investment in compost and biological products came from the compost use demonstrations.

Before I joined these projects, site demonstrations had been initiated on 10 farms in 5 NSW local government areas. Properties were provided 2-3 applications of compost on trial paddocks over a 6-18 month period at minimum, medium, and highest potential response rates as determined by an agronomist. Participating farmers self-reported results.

Across the board, most of the participants had difficulty producing a crop during the study time frame due to extreme drought conditions. That cast a dim view over the study. At this point my role was to help interview participants to identify resulting outcomes—if any.

The compost study did not set out to demonstrate the effects of compost in drought. However, the results indicate that compost afforded a level of crop resilience in drought, even if no crop could be obtained.

Participating land managers noticed a range of differences in paddocks with compost application: higher strike rates and better germination; an increase in biomass, particularly as compared to paddocks where compost had not been applied; longevity of the crop, even without sufficient moisture; and improvement in the quality of the crop.

Where crops did not emerge, paddocks in which compost had been applied developed enough biomass for grazing. For land managers who got sufficient rain for a crop, it translated to 10-30% higher yields at the medium and high application rates. For the land managers who got "just enough" moisture, the compost application meant the difference between a crop and no crop at all—and this is significant.

These demonstrations point to potentially important benefits for areas facing severe drought. Although no one wishes for more drought or climate-related stresses, these findings call for further research into the role of compost through drought and other climate-related challenges.

7

Local, global markets

The concept of (re)'local' and/or cosmo-local is at the heart of nearly every Theory of Change I have come across during this research for how we increase social, economic, and ecological resilience and achieve regenerative and just transitions. Design looks for solutions that solve multiple challenges all at once, and 'local' fits that task. By focusing on local, bio-regional, markets that are connected across scales we can:

- Weave local connection and community
- Nurture the vitality of local economies
- Attune to bio-regional ecosystem health
- Decrease food miles, energy consumption
- Improve local and national food security
- Strengthen provenance and food tourism
- Build producer-consumer relationships
- Better close local waste loops, and more

Remaining connected to broader markets, aided by technology, we can seek the benefits of local and global. Thanks to COVID-19, remote working is more common, creating other avenues for regional growth and economic (re)development. There is opportunity to increase local regenerative entrepreneurship skills and build ecosystems of local regenerative initiatives and businesses. Refer to the WWF Local Learning Labs example.



IMAGE: Kurnai elder Cheryl Drayton presenting

PROJECT EXAMPLE

WWF Local Learning Labs

This project is an example of:

- Co-design and co-facilitation with communities
- Generative and capability-building workshops
- Developing regenerative entrepreneurship and local regeneration capacity.

In 2020, following a season of horrific bushfires in Australia, WWF-Australia embarked on a listening campaign with communities around the country to understand their vision for the future. That listening campaign germinated the Innovate to Regenerate Program (I2R). The program included a short film set in 2030 entitled 'Regenerating Australia', produced by Regen Studios with WWF-Australia, and followed by a community vision workshop to help cultivate action. The film can be viewed on The Regenerators website. As part of the program, WWF-Australia set up a $2 million I2R Challenge for grant funding, to host capability building workshops for shortlisted ventures, and to provide coaching support.

WWF-Australia also partnered with The Australian Centre for Social Innovation (TACSI) to develop and pilot an approach for Local Learning Labs in regional communities. The Labs were two-day workshops focused on local regenerative entrepreneurship whilst growing local innovation ecosystems. It was a privilege to work in intensive collaboration as part of the team to co-design the labs with communities and to co-facilitate the events in Eurobodalla, the Adelaide Hills and Fleurieu Region, and Gippsland.



IMAGE: Adelaide Hills & Fleurieu Lab, Peramangk Country

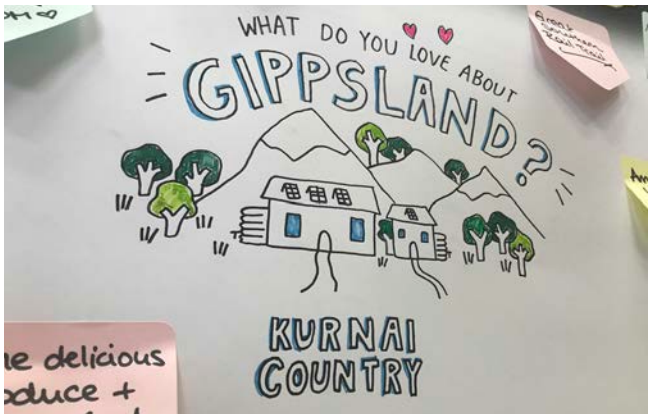
The labs included a Walk on Country led by a local elder, and we engaged local Aboriginal elders or representatives in advisory for the labs. We introduced the following tools and methods: regenerative principles, a social and regenerative business model canvas, and doughnut economics. Participants had opportunities to share their own work and to connect with each other.

Participants appreciated learning about the business model canvas, which we paired with a set of questions to help them identify ways their business could contribute to regeneration, though it was not necessarily easy to think through. Although the scale of the problem could be overwhelming, participants were energized by the idea that a regenerative economy could be possible through concepts like Doughnut Economics, including the idea that their businesses could contribute to regeneration globally.

Participants LOVED the chance to share their work, which we facilitated through a fast-paced marketplace activity. They appreciated the chance to ask for what they needed, and enjoyed sharing what they could offer with others. The labs made the power of local visceral and inspired the working group in return.

Perhaps most of all, participants deeply appreciated and were profoundly impacted by their interactions with local Aboriginal elders and representatives, and the opportunity to learn from them. This experience, and the awareness it generated, influenced the tone and topic of conversations and initiated new relationships in those regions.

Lab materials are available for download on the WWF-Australia Innovate to Regenerate webpage.





IMAGES: Gippsland Lab, Kurnai Country



IMAGES: Doughnut prep. Eurobodalla Lab, Yuin Country



Government mechanisms like policy, regulation, incentives, etc. shape markets and can help 'loosen' settings that preference and 'lock in' the dominant agricultural paradigm whilst facilitating transition. They can also ensure that the risk and burden of transition is not carried by farmers alone, but instead shared across society, by the consumers who benefit, and by key actors, like investors, financial managers, supply, distribution, processing, and retail, etc.

Even as the definition of Regenerative Agriculture is debated, these mechanisms can reward outcomes, like social, economic, and ecological regeneration, wellbeing, and resilience. They can drive effort toward issues of climate, environmental resilience, food security, food sovereignty, and ecological repair. They can set expectations for land management that is regenerative, resilient, and viable long term.

Conditions for transition can be created through:

- Support for transition
- Funding and incentives for measurement
- Supports for micro, small and medium sized farming operations, greater access to farming, and alternative land ownership/use models
- Non-extractive export paradigms and markets
- Fair wages and worker protections. Worker support and retraining in transition.
- Food security and food sovereignty
- Regulating corporate action and market settings that hollow out farmer and farming community value, agency, and viability.

Governments, institutions, agencies, and community organizations can invest in the conditions, supports, facilities, and activities that nurture farming families, community wellbeing, and mental health.

Regenerative transitions are just transitions

Transition in agriculture is interdependent with many other transitions, like energy transitions, water transitions, economic transitions, and more. Governing structures and mechanisms for markets, fair labor conditions, and support through worker transition will play a significant role in shaping productive transitions. How we care for the wellbeing of people, communities, place, the environment, and our economy through transitions will determine the overall health and wellbeing of our society into the future. How might we facilitate just and regenerative transitions?

Just Transitions is a movement that originated from the North American trade union (labor) movement, based on the objective of supporting workers through energy transitions. Australians may be able to relate to the need for just transitions, for example, based on experiences of the collapse of the automotive manufacturing industry, and the social and economic uncertainties linked to moving away from coal to more sustainable energy sources.

Just Transitions offers principles and a Framework for Change to guide transition to regenerative economies—of which Regenerative Agriculture could be a key element. Just Transitions seeks a regenerative economy that operates within social and environmental boundaries, like those set out in Kate Raworth's Doughnut economics. In Regenerative Agriculture the outcomes are not regenerative if the means are not regenerative, and the same principle of congruence applies to transitions. If we want a just and regenerative future:

> *"The transition itself must be just and equitable; redressing past harms and creating new relationships of power for the future through reparations. If the process of transition is not just, the outcome will never be. Just Transition describes both where we are going and how we get there"* (Climate Justice Alliance).

Movement Generation express it more urgently:

> *"Transition is inevitable. Justice is not…*
>
> *Solving one problem while creating another is no solution at all. The new economies that our communities construct must take a holistic approach and foster equity, democracy, and ecological renewal"* (Movement Generation).

An opportunity for solidarity

The global agroecology movement, represented by organizations like La Via Campesina, seeks to address a diverse range of issues worldwide, including social justice, poverty, and food sovereignty—for instance the rights of peasant farmers to retain control of their land, plant crops of their own choosing, and save their own seed. Although most Australian farmers may not resonate with the word "peasant", there is a growing 'neo-peasant' movement and, perhaps more pertinently, the issues named by participants in this research as barriers to the uptake of Regenerative Agriculture are some of the very issues that agroecological and peasant movements address. This is an opportunity for international solidarity on shared issues, practices and global-scale challenges.

Participants in this research did report frustration with all of the following: companies positioning for dominance of GMO seeds; the increasing off-farm control of inputs end-to-end, including seeds; reliance on a never-ending chemical application regime; how global markets dictate what farmers produce; the encroachment of suburbs and non-agricultural uses on farming land removing valuable land from agricultural use; and the increasing cost of land putting pressure on overall rates of production, making it difficult for farmers to be able to afford to continue farming, and difficult for people to purchase land for farming. Advocacy organizations exist in Australia, like the Australian Food Sovereignty Alliance (AFSA), which "is a farmer-led civil society organization of people working together towards socially-just and ecologically-sound food and agriculture systems that foster the democratic participation of Indigenous Peoples, smallholders, and local communities in decision making processes" (AFSA, 2023).

> ***"There is a green core in just about every farmer."***
>
> —126 Organic Farmer and Academic

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Collaborative regeneration initiatives are a means to make regeneration more socially acceptable, build a platform for local action, and impact regeneration at catchment and even regional scale. These collaborations can also be activated in the event of weather events and natural disasters.

How might we convene more collaborative initiatives for ecosystem and catchment regeneration, stewardship, and resilience? What role might land managers, Local Land Services, Landcare, grassroots initiatives, and natural resource management play in convening and coordinating collaborative regeneration initiatives? What funding, grants, mutuals, commoning, etc., could enable this? How might technology, like that used by the Open Food Network, better facilitate networks? What spaces, mechanisms, structures, processes, entities, etc. could enable local organizing?

Example: Upper Mooki Rehydration Project

"In 2019, 13 landholder enterprises joined forces as a Landcare group partnering with North West Local Land Services on a $660,000 project" to "regenerate the functions and water holding capacity of the soil profile as well as increasing groundcover and ecosystem services."

Link to the Upper Mooki Case Rehydration Project case study: https://www.lls.nsw.gov.au/regions/north-west/key-projects/natural-resource-management-case-studies/upper-mooki-rehydration-project

Engaging constructively with difference

Like the 'structural lock-ins' named by Iles, the article 'Regenerative Agriculture needs a reckoning' summarizes issues that are structurally and philosophically interlinked with the existing dominant food production system, including: "forces that compel farmers to focus on yield at the expense of everything else", "the financial model that keeps farmers '[yoked]' to chemicals and conventional agriculture", commoditization, subsidies that incentivize overproduction, resource intensive, fossil fuel-driven methods, and more (Fassler 2021). These issues underscore the many interlocked elements of the current regime that are difficult to shift. For more people to transition to Regenerative Agriculture, proponents will inevitably engage with people who are involved in the dominant regime:

> *"[You've] gotta get more than just the Regenerative Agriculture crowd in. Bridge the gap to average farmers. [If you] want the movement to grow, it has to transform as it broadens." (129 Agroecologist and Extension Consultant)*

Meanwhile, conventional farmers are also pushing back against Regenerative Agriculture. Resisting the movement, detractors remain unconvinced that the approach will deliver the yields they are after, risk averse without a clear pathway to lift and shift existing methods. Skeptics have protested being excluded from the movement and being judged for use of chemicals, expressed defiance and resentment at the insinuation that their approach is *de*generative, and argued that it's just not practical—'we have to feed the world' and 'you can't go green when you're in the red'. Adding the concepts of social justice and a regenerative economy into the mix might be even more off-putting for some.

In any case, supporting transition means navigating difference at some point. Transition approaches ask us to be mindful of what people stand to lose in the process of change. Just Transitions emphasizes: just means for just ends; *'what the hands do the heart learns'*; that "*solving one problem while creating another is no solution at all";* and that *"if it's the right thing to do we have every right to do it"* (Movement Generation 2016). A design approach seeks to work productively with constraints and tensions. These mediating stances ask: How might we engage constructively with difference?

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"Most of our farming families love their land and want to look after that and they–mostly–recognize the mistakes of the past. But we are pushed by survival. We can't complain or b*tch about it. We [just have to] keep pushing, keep learning."

— 108 Industry entrepreneurs & former farmers

Strategies for bridging perspectives

Here are a few strategies:

- Acknowledge that farmers love their land and that they do not want to see the landscape, their animals, crops, families and communities suffer; Many hope to leave things better than when they began
- Avoid shaming, criticisms, accusations, and approaches that put people on the defensive; seek to make reparations and build bridges when offense is taken
- Develop relationships and connections. Identify shared goals and challenges (for instance long-term viability) that most people can support
- Engage in collaborative problem-solving and find ways to grow something, together
- Emphasize the need for a plurality of approaches; see value in outcomes that range from 'light green' to 'deep green' (incremental to transformative); treat regeneration as an ongoing journey
- Value each of the horizons—the status quo, the outlines of the future here today, and the future-future (see section on Transition Theory)
- Welcome ideas and innovation that conventional agriculture brings to regenerative approaches
- Make the "revolution irresistible"—in visual, visible and tangible ways; connect to joy, caring, beauty, fun, passion, compassion, and community—to things that feel meaningful and life-giving.



IMAGE: Adaptation of the three sisters, one of the most well known—and used—First Nations planting methods (2022). Wonnarua country, Hunter region

OPPORTUNITY
THEME C

Narratives, Discourse & Cultures

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."

—John Muir

IMAGE: Spiderweb (2022). Wonnarua country, Hunter region

What's in a definition?

The task of defining Regenerative Agriculture is framed as either a way to uphold the integrity of outcomes or a way to open the doors to more farmers, but not both. Is this a legitimate dilemma? Are there ways to define Regenerative Agriculture that can achieve both? Are there ways to open Regenerative Agriculture to a plurality of approaches that all contribute to regeneration?

Farmers who participated in this project identified that they were achieving ecosystem health, climate resilience, production and human wellbeing by working with the self-renewing properties inherent in nature, by working *with* nature. They described congruence between their approach and their outcomes, asking "what can I grow?"—rather than "what do I need to go out and kill today?' The definition they conveyed may lend to framing regeneration as an ongoing journey, whilst leaving it open to a plurality of approaches.

If Regenerative Agriculture is defined by outcomes, and congruence between approach and outcomes, is it easier to evaluate what is regenerative, and what is not? Regeneration can be tested at different scales: micro (plant, animal, person, soil, biology), meso (herd, paddock, block), macro (watershed, region, community), and meta (planetary boundary). Defining Regenerative Agriculture by its contribution to regeneration at multiple scales could help tune our attention to managing health and resilience at each scale.

What would it mean to define Regenerative Agriculture in the most holistic sense, including social, economic, and environmental regeneration? It would call for an examination, for instance, of: chemical application, dependence on fossil fuels, import and export policy, food sovereignty, land rights, and ownership. This has risks: as Donella Meadows points out, "The higher the leverage point, the more the system will resist changing it". A holistically defined Regenerative Agriculture, however, can contribute to a more just transition.

What if all of agriculture was expected to be regenerative? The 'paradigm' definition of Regenerative Agriculture is an opportunity to reframe agriculture as one way humans, as a custodial species, can make a positive impact on the planet. All of agriculture could be regenerative—environmentally beneficial and climate-positive.



The highly contested definition of Regenerative Agriculture is seen as having the power to open up Regenerative Agriculture to as many farmers as possible *or* ensure the potential for agriculture to contribute to global regeneration—but not both. Is the definition of Regenerative Agriculture truly a win-lose dilemma? Further research and experimentation could help find productive pathways forward that result in both transition and regeneration at scale.

Refer to Section 5 'Envision' for further discussion of the definition of Regenerative Agriculture.

11

Reconciliation, reparation, & relationships

Reconciliation and healing involve facing the legacy and harms caused by colonization, dispossession, slavery, genocide, racism, bigotry, and hate—as well as working on the cultures that continue to produce these harms. There is opportunity to acknowledge history and address the social norms and structural conditions that reproduce disenfranchisement, disadvantage, inequality, poverty, and injustice. There is also opportunity to further enable access to land, farming, and enterprise on Country.

Although much of the power to facilitate reconciliation sits with government, reconciliation is something that everyone can engage in:

- Acknowledge Country and Traditional Custodians; acknowledge history.
- Build relationships and connections.
- Acknowledge the Indigenous wisdom and knowledge that informs farming practices.
- Explore land-sharing or other models like Farming on Other People's Land (FOOPL).
- "Pay the rent"—donate a percentage of profit to Indigenous communities and causes.
- Return land to Traditional Custodians.
- Forge collaborations that bring together diverse wisdoms for mutual opportunities.

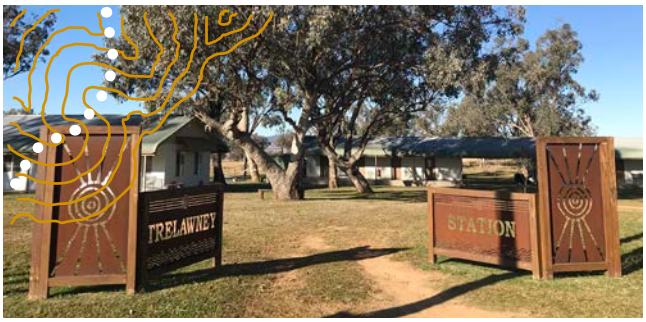


IMAGE: Trelawney Station, owned and managed by the Tamworth Local Aboriginal Land Council. Kamilaroi/ Gamilaroi/ Gomeroi country (2022).

Reckoning with history

Regenerative practices often originate from Indigenous cultures. In some cases this has been acknowledged, and in other cases it has not. Angela Dawson observes:

> *"Black and Indigenous farmers have been practicing this form of agriculture without any specific title or performative acknowledgment for generations. This is the way I learned to farm from my grandparents"* (Fassler 2021).

As Regenerative Agriculture grows in popularity, as old practices become new again, proponents have been blindsided in some cases by anger, rather than positive reception, from Indigenous people.

In a letter titled "A Whitewashed Hope", 10+ Indigenous leaders and organizations direct criticisms at Regenerative Agriculture (Regen Ag) and the Permaculture movement. The letter challenges Regenerative Agriculture and Permaculture movements for "[claiming] to be the solutions to our ecological crises" but "[leaving] out our worldviews and [continuing] the pattern of erasing our history and contributions to the modern world". The letter argues that practices cannot be holistic, and healing cannot occur, if history is not acknowledged:

> *"Regen Ag and Permaculture claim to be holistic in approach. When regenerating a landscape, 'everything' is considered: soil health, water cycles, local 'wildlife', income and profit. 'Everything', however, tends to EXCLUDE history: Why were Indigenous homelands steal-able and why were our Peoples and lands rape-able? Why were our cultures erased? Why does our knowledge need to be validated by 'Science'? Why are we still excluded from your 'healing' of our land?" (Cultural Survival et al., 2020).*



IMAGE: Aboriginal young people attending a stock handling course hand feed a bull for the first time. Trelawney Station, Kamilaroi/ Gamilaroi/ Gomeroi country (2022).

Opportunities for reconciliation

According to reconciliation.org.au, reconciliation is the work of "strengthening relationships between Aboriginal and Torres Strait Islander peoples and non-Indigenous people, for the benefit of Australians". This includes making reparations, addressing past harms, remediating ongoing dynamics (whether structural, cultural, economic, etc.), and actively engaging in healing. Everyone, from citizens, farmers, corporations, academics, institutions, communities, to governments (et al.) can engage in reconciliation. This is not meant to downplay the significant role governments serve in matters of reconciliation, justice, and equity, but rather to encourage individuals and entities to do what they can.

One example of "positive deviance"—people demonstrating new approaches now—is Murray Prior's efforts to share his story, and the collaboration between his family and Paul "Girrawah" House. Prior speaks of a realization that he is just a steward of the property he purchased, his learning in engaging with Aboriginal people, and his growing relationship with House, a Ngambri (Walgalu), Wallabalooa (Ngunnawal) and Wiradjuri (Erambie) custodian. Prior has spoken publicly, on his own and with House, sharing learnings, the developments in their relationship that led to House choosing the name Nguurruu for the property, and the two entering into a land sharing arrangement, which they describe as Yindyamarra. As examples of their sharing, the land use agreement is described in proceedings of The Global Foundation's May 2021 Canberra Roundtable (2021) and explained by Prior in AFSA solidarity session #17, 'Nguuruu Farm' (2021).

Healing people, healing land

'Whitewashed Hope' asserts that regenerative farming practices are important but "do not encompass the deep cultural and relational changes needed to realize our collective healing" and regeneration. The letter includes an invitation to "jointly work towards collective healing", in part by opening up to the worldview that humans are not separate from nature, but rather part of a "communion of beings and not objects" in which "all matter and energy is alive and conscious", never dead. It frames healing relational and historical traumas as healing Earth's traumas "because we are ONE":

> *Among Indigenous cultures, people belong to land rather than land belonging to people. Healing of land MUST include healing of people and vice versa. Recognizing and processing the emotional traumas held in our bodies as descendants of assaulted, enslaved, and displaced Peoples is necessary to the healing of land. Returning our rights to care for, harvest from, and relate to the land that birthed us is part of this recognition"* (Cultural Survival et al., 2020).

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Consumer demand influences farmer choices as much as if not more than governance, regulation, policy, research, funding, investment, etc. Consumer awareness of regeneratively produced products is growing, but its power has yet to be fully realized. There is opportunity to build consumer demand through:

- Marketing and storytelling
- Campaigns, media, and news
- Bio-nutrient density labeling and pricing
- Farmer and/or product certification
- Increasing ecological education in schools
- Growing the regenerative movement
- Improving access—distribution and retail
- Making hidden environmental costs visible

Charlie Arnott's podcast, The Regenerative Journey, is an example of building awareness among both farmers and consumers.



IMAGE: Scientist conducting a soil sample (with permission) at Moore Park in Sydney for UTS architecture and landscape design students with Professor Martin Bryant. Gadigal Country, Eora Nation (2022).

PROJECT EXAMPLE

Rewilding Moore Park

This project is an example of: Teaching design students to address diverse stakeholder needs and to undertake design in a way that can influence social and ecological regeneration.

Influencing change through design of public spaces

Building ecological awareness among the public as well as farmers is part of creating the conditions for transition. Urban design and development has a role to play here. Design choices that "green" urban areas not only provide environmental, economic, and social wellbeing benefits, but also attune consumer awareness to the environment. The design of parks, as an example can communicate an underlying ethos and offer an opportunity for educating the public and building ecological awareness.

The City of Sydney and former Premier Bob Carr have been in active discussion with Moore Park for a number of years regarding the opportunity to reconfigure a 45-hectare golf club site to share the site between golfers and the public, thus introducing more public parkland into an area that will continue to see significant population growth over the next decade.

UTS Professor Martin Bryant held design studios for architecture and landscape design students in 2021 and 2022 to generate creative ideas for the site. The 2021 class went for the bold idea of introducing Regenerative Agriculture and food production to the site. The 2022 class, which I was invited to co-teach, pursued rewilding, setting a point of difference with other local parks, whilst offering environmental benefits like increasing animal habitat, foliage density, and wetlands. Both of these concepts provided the opportunity to build public awareness of how ecology works and knowledge of environmental challenges.

Students, working in groups, were asked to reconfigure the site based on their own concept of rewilding. Each group anchored their design around a different idea, for instance: key species, like eels and birds; diversity of habitat and spaces; wild journeys; and a refuge from the city nearby. Students also learned about influencing change through their design process, presentation approach and materials, and the design itself.

In addition to the design of public spaces, this example speaks to the potential of education for building ecological awareness.

As a note, Rewilding is another movement that advocates regeneration. Land managers working to regenerate can incorporate rewilding into their toolbox, or use it as their primary strategy.

SECTION 5

Envision



CASE STUDY—SECTION 5

Envision

An ecosystem of action for a regenerative future

Process

The vision process for this case study is active and ongoing. Through this research, I have compiled perspectives from participants and literature about what it takes to transition. Those perspectives described the many elements of the agricultural sector, the systems (including social) that agriculture is nested in, and how they might enable transition. Those perspectives also contained traces, outlines of a very different potential future.

(En)vision this—a design provocation

On the following page, the reader is asked to contemplate what a Regenerative Agriculture might look like. For agriculture to transition, there will need to be many—a pluriverse—of variations on this same theme in order to work for the diverse variables and contexts farmers face. We need more than one vision.

Theory of Change

On the two-page spread after the 'vision challenge' there is a diagram that contains the 'summary on a page', a Theory of Change, that brings together the many elements of the system that can be redesigned, re-imagined, or innovated to help support transition. This Theory of Change is a draft, to be iterated over time—because there is much to be learned about what works, for whom, in what circumstances. This Theory of Change can also be used as a starting point by anyone interested in supporting transition, and as a way to structure and identify your own strategies.

Design methods

Design provocations are a creative all-call, a challenge and an ask, put out to an audience. The intent is to engage collective imagination and wisdom in problem solving. A stimulus is provided, and responses may come from anywhere.

Theory of Change — The term 'Theory of Change' refers to logic models that capture our assumptions about the conditions and activities that are believed will create specified change outcomes and the desired future. Theories of Change hypothesize a causal narrative: 'If we have the following conditions and available resources, and if we make or do this, this and this, then something will happen, and that something will have an impact, and eventually the broader changes we seek will come about.' Theories of Change outline with specificity the many-fold elements we believe are necessary to bring about change, enabling us to test that thinking and iterate the Theory of Change over time.

Visual synthesis — To synthesize is "to organize, manipulate, prune and filter gathered data into a cohesive structure for information building"; Sense-making through synthesis involves "organizing complexity or finding clarity in an overwhelming amount of data" (Kolko, 2007). Visual synthesis is the act of representing the results of synthesis in artefacts like illustrations and diagrams. Visual skills are used in synthesis to help others engage with complexity and contribute to building understanding together with others.

Prototype testing — Designers make and remake things like systems maps, business models, and Theories of Change together with participants in order to experiment with ideas live, on the fly. Generative approaches bring out participant knowledge and experiences, inviting play, curiosity, and creative problem solving. The Theory of Change presented here is an early prototype, for further testing and iterating.

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Imagine a future in which agriculture contributes to global wellbeing, abundance, resilience, and regeneration—in environmentally, socially, spiritually, and economically holistic ways

Imagine: Regenerative futures for agriculture

This is a design provocation for you, dear reader.

This case study focuses on transition to Regenerative Agriculture. But let's think bigger, let's consider the long-term viability of agriculture around the world. What if all of agriculture contributed to holistic regeneration? What if our food and fiber production system was a net contributor to the health of ecosystems and the environment, protected planetary boundaries, provided the foundation of a more equitable global economy, and nourished social and spiritual wellbeing?

We need more than one vision—we need many visions. Different agricultural products, biomes, and farming contexts will call for different methods. Food systems will be configured differently based on their relationship to local/regional, national, and international markets. And every culture has a right to cherish, own, and continually renew their food cultures. We need a pluriverse of visions that help us reimagine how agriculture can be a part of regeneration around the world.

Design provocation

Consider it homework ;)

A design provocation is a creative all-call, a challenge and an ask, put out to the world.

How would you envision—through *writing* and/or *drawing*—an entirely regenerative agriculture? How would you *tell the story* of the future you want, and agriculture's place in that future?

Consider these prompts, and the Theory of Change on the next spread.

If you give it a go, share your work!

Theory of Change

How might we...

A summary on a page

This Theory of Change, presented as a logic model, sets out a summary of assumptions about how we might increase transition to Regenerative Agriculture based on the discussion in this case study.

This particular format is meant to be read from bottom to top as a narrative: "Working... [with Principles]; If we... [Actions/Responses]; So that...[Measurable Outcomes]; As a result... [Conditions]; Eventually...[Regime changes]; and Ultimately... [Landscape impacts]. Note that this summary also includes a series of environmental outcomes at the right hand side that are the cumulative result of each of the rows. These environmental outcomes also read bottom to top.

Read from bottom to top

Ultimately...

LANDSCAPE IMPACTS

Agriculture on the whole will contribute to...

Eventually...

REGIME CHANGES

Regenerative approaches in agriculture will become...

As a result...

CONDITIONS

Capability growing

Transitions happening

Sector committed, providing relevant products and supports

So that...

MEASURABLE OUTCOMES

- Farmers can access transition support
- Education, training, mentoring and peer support available
- More farmers capable of farming agroecologically
- Environment positive: Farms and agriculture contribute to overall ecosystem function and health
- More farmers stewarding ecosystem function and health
- More farmers believe that regenerative approaches can work for them
- More farms as examples of regenerative approaches in diverse biomes, product types, and businesses
- Research and innovation help improve and diversify agroecological options, facilitates transition
- More data and insight on regenerative approaches and transition
- A less extractive economy begins to take shape
- Perverse incentives mitigated; risk shared
- Resources, incentives, investments and supports available

If we...

ACTIONS / RESPONSES (by Opportunity Areas)

OPPORTUNITY THEME A: FARMER TRANSITIONS AND CAPABILITY

Develop agroecological capability and support for transitions	*More projects to repair landscape function and ecological system health*	*Develop information and training for diverse transition pathways*	*Invest in ecological science, research and measurement*	*Offer products and funds that support transition and regeneration*
				
Education, Extension & Support	Landscape repair	Transition pathways	Science, measurement, & research	Finance, investment, & insurance
1	2	3	4	5

Working...

PRINCIPLES

with nature

holistically

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increase transition to Regenerative Agriculture, by design?

environmental, social, spiritual and economic
regeneration resilience abundance wellbeing justice viability

...as well as climate resilience

widespread... >>> mainstream... >>> standard

a key driver of global regeneration

Transition risk and burdens shared

Economic conditions favor resilience, wellbeing, and regeneration

Social conditions demand uptake of regenerative approaches

Environmental benefits seen at scale

Processing, distribution, manufacturing, and retail fit for regenerative products

Sector readily supplies compatible inputs, machinery, technology, etc.

Markets more favorable to regenerative products

Growing local economies and communities

Less total food miles

Increased local and national food security

Transitions are just and regenerative

Regenerative, resilient, holistic outcomes incentivized

Transition risk and burden minimized and shared/spread

Collaboration with global movements

Increasing ecosystem resilience across forms of land management

Repair and regeneration visibly occurring at scale

More producers can see themselves managing agroecologically

Diverse farmers engaging

Definition does not limit regenerative potential

More people access land and engage in regeneration

First Nations leadership involved in agriculture

Sector increasingly engages in reconciliation

Regenerative approaches and outcomes are expected more and more

Demand and pressure on existing regime increases

Socially acceptable

More and more land managed ecologically, holistically

OPPORTUNITY THEME B: SECTOR CAPACITY

OPPORTUNITY THEME C: NARRATIVES, DISCOURSE AND CULTURES

ENVIRONMENTAL IMPACT

Grow capacity to supply, process and distribute regenerative products

Cultivate resilient local economies, integrated with global markets

Align incentives, mechanisms to holistic well-being and food sovereignty

Establish (more) collaborative ecosystem resilience initiatives

Define Regenerative Agriculture holistically and enable plurality

Working toward reconciliation, supporting First Nations leadership

Raise consumer awareness and demand

Build capacity to manage ecosystem health and planetary boundaries on a strong social foundation



Supply, retail, processing, & distribution



Local, global markets



Governance, incentives, & policy



Collaborative regeneration initiatives



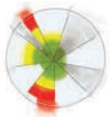
Definition of Regenerative Agriculture



Reconciliation, reparation, & relationships



Consumer awareness and demand



Planetary boundaries, ecosystem function and health

6 7 8 9 10 11 12

in a way that is regenerative and just in means and ends



A vision for a Regenerative Agriculture

Listening to farmers, Regenerative Agriculture was defined as **a holistic approach to agriculture that achieves regeneration and production by working with the self-renewing qualities of nature.**

Definitions as a rule try to avoid using the word that is being defined in the definition. In the case of Regenerative Agriculture, there is significance to breaking this rule: regeneration is the goal, and that goal is achieved through regenerative means. The question, “Is it regenerative (agriculture)?” is answered by, “Is it regenerating?”. In Regenerative Agriculture, the capacity for and quality of regeneration is the basis of production. Furthermore, in this definition, regeneration applies across scales—micro, meso, macro, and meta—and does not just refer to environmental/ecological regeneration but social and economic regeneration as well. This definition asserts that agriculture as a sector has a responsibility to contribute to global regeneration. Is this definition open enough for regeneration to be a journey, for there to be a plurality of approaches, and meanwhile to hold accountability for outcomes?

The potential for transformation

Beyond a growing interest in Regenerative Agriculture, some see a much bigger opportunity to transform the whole of the food and fiber production system—an entirely new agricultural paradigm. Silvia Secchi expresses concern that she sees a movement increasingly focused on small improvements—“fiddling at the edges”—and how, by not addressing the underlying dynamics of the food production system, Regenerative Agriculture could become “a massive deflection” that enables the existing paradigm to keep operating without making sufficient changes to deliver the regenerative outcomes that people would expect from Regenerative Agriculture (Fassler, 2021). Secchi attributes this dynamic, at least in part, to the penalties of challenging the existing system, citing a need to “keep…funding flowing” and instances of “political retaliation for scientific findings that were unfriendly to big agribusiness” (Fassler, 2021). Fassler and Secchi argue that, if regenerative approaches were implemented throughout the food (and fiber) production system, it would be a radical transformation. Secchi declares, “regenerative ag—if it’s true—should rock the fricking boat” (Fassler, 2021).

Large-scale transition to regenerative approaches to agriculture is not guaranteed, however, and the definition will influence the outcome:

> *“Make no mistake: In this, something crucial is being negotiated. The debate over what Regenerative Agriculture means, and who gets to decide…touches on our changing relationship to science and technology, on access and antitrust reform, on workers’ rights and racial injustice, on conceptions of the natural world and our place in it. It’s a conversation that forces you to draw a bigger circle, only to realize that circle isn’t big enough” (Fassler, 2021).*

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> ***"The higher the leverage point, the more the system will resist changing it."***
>
> —Donella Meadows

Holistic means holistic

Regenerative Agriculture is often defined as a holistic approach to agriculture. 'Holistic' includes social, economic, and environmental regeneration—and regeneration of one element is linked to regeneration of the others. The contested definition of Regenerative Agriculture however, includes a range of interpretations of 'holistic'. In terms of environmental transitions more broadly, Regenerative Agriculture is considered at risk of achieving regeneration in meaningful ways at scale if it is compromised ecologically, economically or socially. The idea is that Regenerative Agriculture will succeed where it takes a truly holistic ethos.

'Ecologically holistic' includes complex, adaptive, self-organizing ecosystems replete with biodiversity, increasing complexity, resilience, and adaptive capacity. As an example of what ecologically holistic might mean, the Regenerative Agriculture movement has been criticized for an over-emphasis on cattle. There is opportunity to evaluate the "ecological logic" of a range of different animals and their suitability for a given environment, which could provide ecological and business model diversity and potentially do a better job than cattle of repairing a particular ecosystem (Fassler, 2021).

'Economically holistic' includes ideas of thriving, just, and regenerative economies. It is tricky to separate 'economically holistic' from 'socially holistic'. As an example, equitable access to land was identified as a barrier to transition by participants in this project. Population in farming communities has been declining in Australia for decades. It is attributed to a number of factors, including conventional agriculture. More big farms reliant on machinery means fewer people working in farming, and in farming communities. The economic is inextricable from the social.

Proponents have noted that Regenerative Agriculture may create opportunities for families to come back to farming, for farming communities to grow again—and that takes more people. In Australia, the cost of land creates a significant barrier to entry for even middle-class wage earners, and cost pressures mean farmers often require off-farm income. If economic access and equity are not addressed, Regenerative Agriculture may not have the workforce it will depend upon:

> "*Plenty of new farmers, many of them people of color, want the opportunity to work the land. They're simply hitting up against a system that rejects them" (Fassler, 2021).*

Land prices have continued to rise in Australia, and people leaving cities during COVID-19 has raised land prices even more. People getting into farming find it harder and harder to afford land.

Social benefits

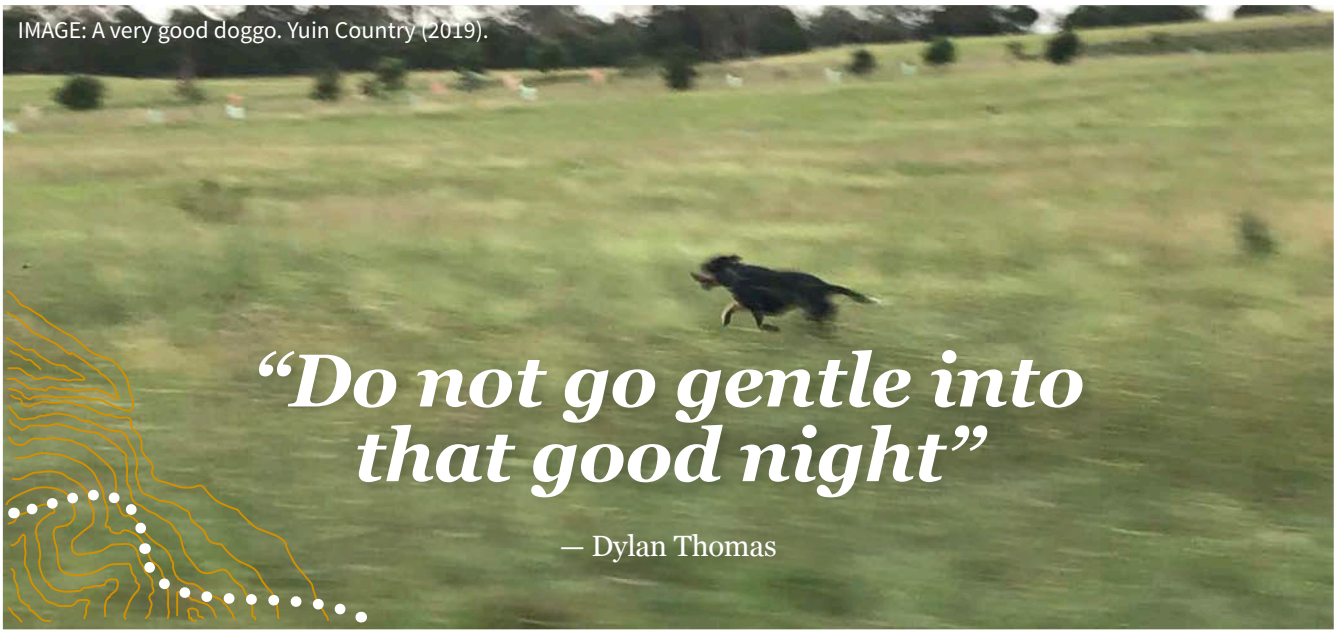
Regenerative Agriculture is endorsed for its social as well as ecological and economic benefits, and the social benefits of Regenerative Agriculture were emphasized to me by most participants in this research. But what are 'social benefits', exactly?

As it turns out, 'social benefits' can mean many things:

- "Good physical and mental health of farmers and employees. Enjoyment and fulfillment from work. Healthy food. Thriving rural communities and jobs. Urban and rural communities engaged with farming. Consumers connected to food" (Grelet et al., 2021).
- "Quality of life and the social wellbeing of the individual [farmer]"(Gordon et al., 2023)
- Reduced social isolation (Gordon et al., 2021)
- Social learning e.g., through communities of practice (Gosnell, 2020; Gordon et al., 2023)
- Self-efficacy (Brown et al., 2022) and empowerment
- Community support (Gordon et al., 2023) and social license (Grelet et al., 2021)
- Regenerating farm families, adaptive and regenerative farm enterprises (Schreefel et al., 2020)
- Community wellbeing e.g., communities growing and thriving because farming is thriving and more people are working in farming and farming communities again; community resilience (as a result of improved ecosystem function, environmental condition, and community thriving) (114 Regenerative Farmer).

Outside of Regenerative Agriculture discourse the concept of 'social benefits' has numerous other meanings, including societal-scale wellbeing and spiritual wellbeing:

- Operating within an ecological ceiling and a social foundation in order to create "a safe and just space for humanity" (Raworth, 2017)
- A 'fair share' (setting limits to population and consumption, redistributing surplus) (Mollison, 1988; PermaculturePrinciples.com, 2023; Perkins, 2019)



- Social fairness, as defined in Rodale's regenerative organic certification scheme (Burgess et al., 2019)—includes law and code compliance, labor standards, harassment, abuse, discrimination, wages, benefits, health, safety, buyers, and supply chain (Burgess et al., 2019; RegenOrganic.org, 2021).
- Equality (Hawken, 2017), power, equity, racial parity (Movement Generation, 2016; Gosnell, 2020; Gordon et al., 2021; Gordon et al., 2023; Fassler, 2021)
- Social capital, social welfare, social organizing (Iles, 2021); Sustainable food supply and food security (Schreefel et al., 2020); Food sovereignty and democratic participation in food systems (Power et al. for AFSA 2023; Gordon et al., 2023)
- Just transitions (Movement Generation, 2016); A regenerative, redistributive, and just economy (Raworth, 2017)
- Regenerative cultures (Wahl, 2016); Regenerating the social system (Schreefel et al., 2020)
- Cultural re-appreciation, respect, and diversity (Yunkaporta, 2019; Schreefel et al., 2020)
- Social justice (Schreefel et al., 2020; Gosnell, 2022)—healing, reconciliation, and reparations for past harms of colonialism; Land rights and access to land (Land, 2015; Smith, 2012; Yunkaporta, 2019)
- Spiritual wellbeing (Rodale, 2014); Worldviews rooted in holistic and ecological wellbeing; (Social) identity based on oneness with nature (Yunkaporta, 2019; Cultural Survival et al., 2020); "Caring as country" (Suchet-Pearson, 2013); "A rekindling of whakapapa, mātauranga and tikanga" (Grelet et al., 2021).

Despite the many purported social benefits, some describe a 'chronic omission' of "the importance of addressing social and political issues as part of the regenerative ethos" and that "conversations around Regenerative Agriculture often grew uncomfortable—even antagonistic—when issues related to power, access, compensation, and equity were raised" (Fassler, 2021; Gordon et al., 2021).

The social aspect of Regenerative Agriculture speaks to the nested, fractal nature of systems. A truly Regenerative Agriculture will exist within regenerative cultures:

> *"Regenerative Agriculture operates within nested systems of other dominating discourses, which influence its capacity to function regeneratively…Soloviev and Landua (2016, p. 13) remark that, "deeply Regenerative Agriculture can exist only if it is completely interwoven into a thriving regenerative culture" (Gordon et al., 2021).*

The idea that Regenerative Agriculture needs to be nested in regenerative cultures to succeed, and that agriculture has a role to play in protecting social wellbeing as well as environmental wellbeing, brings us back to the contested definition of Regenerative Agriculture.

A truly Regenerative Agriculture will need to be a part of a future that we genuinely desire. As we try to create either one of these—a Regenerative Agriculture or a future we desire—it can help us create the other. Everything is connected. Change seems daunting, but 'many hands make light work'. Amidst the loss and turbulence that comes with transition, it can be joyful work, too. To quote Toni Cade Bambara, we can "make the revolution irresistible".



IMAGE: Tomatoes and zucchini from our Chaos Garden. Wonnarua country, Hunter region (2022).

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SECTION 6

In a nutshell

Transition in seven memes

All points work equally for Regenerative Agriculture and Transition Design



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1



If your goal is **regeneration**, then:

Earth care,
people care,
fair share.

- Three ethics of Permaculture

SOURCES: Bill Mollison and David Holmgren. Heart icon by Creative Stall, Noun Project.

2

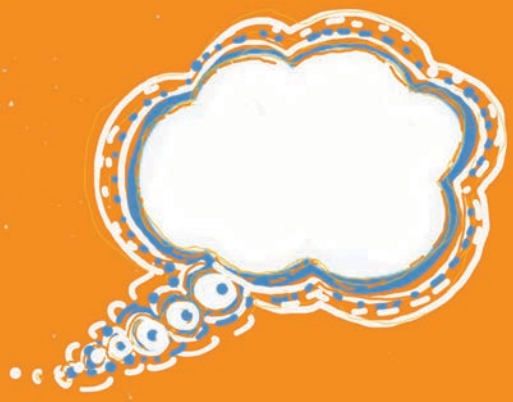


Listen, observe, and engage with the world around you.
Create space for the future that wants to emerge.

SOURCES: Otto Scharmer

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3



Make the future irresistible

Imagine, visualize, and describe the (even) more beautiful world your heart knows is possible

SOURCES: Charles Eisenstein and Otto Scharmer

4



Grow something.

Give your energy and creativity to things that renew you and the world around you.

Care for country *as* country

SOURCES: William Bridges, Peter Andrews, Scott Middlebrook;
Suchet-Pearson, S., Wright, S., Lloyd, K., Burarrwanga, L., & Bawaka Country. (2013). Caring as Country: Towards an ontology of co-becoming in natural resource management. Asia pacific viewpoint, 54(2), 185-197.

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5



Start where you are.

Use what you have.
Do what you can.

- Permaculture Principles

SOURCES: Bill Mollison and David Holmgren

6



Experiment.

Try new perspectives. And iterate, iterate, iterate.
Tell someone what you're learning.

SQURCES: The design process

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7

And if you get stuck

Go to the places of hurt

Generously apply
love, care and respect

Build relationships

Make reparations

SOURCES: William Bridges, Tyson Yunkaporta, Melanie Goodchild



"Hope" is the thing with feathers -
That perches in the soul -
And sings the tune without the words -
And never stops - at all -

And sweetest - in the Gale - is heard -
And sore must be the storm -
That could abash the little Bird
That kept so many warm -

I've heard it in the chillest land -
And on the strangest Sea -
Yet - never - in Extremity,
It asked a crumb - of me.

-Emily Dickinson

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