

Agroecological Transitions: How Farmers' Relationships with Nature Shape Farming Systems

Nicola Jayne Yoxall

A thesis submitted to the University of Gloucestershire in accordance with the requirements for the degree of PhD in Society, Place and Environment in the School of Arts, Culture and the Environment.

A research project co-funded by ESRC and The Soil Association.

7th January 2026

Word Count: 78,473

Abstract

Agroecological transition is increasingly promoted as a pathway towards more sustainable and resilient agri-food systems. However, dominant approaches often frame transition as the adoption of technical practices, giving limited attention to how farmers themselves understand or enact agroecological change within the social, economic and institutional realities of farming. This thesis addresses this gap by examining how UK farmers make sense of agroecological transition, with particular attention to the role of nature connectedness in shaping values, decision-making, and pathways of change.

The research combines systems thinking, farming ontologies and more-than-human theory to develop a place and system sensitive analysis of agroecological transition. It draws empirically on a multi-sited qualitative study involving farmers across a range of farm systems in the UK. Methods included walking interviews conducted on farms and extended follow-up dialogue via WhatsApp. This approach enabled in-depth exploration of farmers' lived experiences, place-based knowledge and evolving relationships with land, animals and ecological processes.

The findings demonstrate that agroecological transition is best understood as a process of system transformation rather than the uptake of discrete practices. Processes of rethinking, reconnecting and restructuring were found to be deeply intertwined and mutually reinforcing. Nature connectedness emerged not as an abstract environmental attitude, but as an embodied, relational form of knowing developed through everyday encounters with soil, plants, animals and landscapes. These relationships shaped farmers' motivations, identities and ethical orientations, influencing land management decisions and engagement with ecological practices.

A central contribution of the thesis lies in its analysis of the relationship between nature connectedness and economic sustainability. Rather than following financial security, nature connection actively reshaped what farmers understood to be economically rational. Ecological observation altered perceptions of risk, cost, and success, leading to business models oriented towards reduced input dependency, greater resilience, and long-term viability. Ecological practices were therefore understood as foundational to economic sustainability.

The thesis also highlights structural constraints on transition, including tenancy arrangements, policy volatility, and market pressures, alongside the enabling role of social learning networks. It concludes that agroecological transition should be understood as a living systems transformation in which economic reasoning, knowledge systems, and farming practices are reconfigured through ongoing relationships between farmers and the more-than-human world.

Author Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed

Date 07/01/2026

Acknowledgements

Before I was a farmer or an academic I remember reading a series of books by Manda Scott about Boudica. I was mesmerised by the way she so beautifully captured not only the relationships between human and the more-than-human characters in her stories, but also the ways in which the human characters observed, responded and shaped their lives in response to their 'natural' friends and allies.

This deep entwining of who we are as people, and how we interact with our more-than-human friends has become so central to the way I think and now ultimately farm. It is this deep connection, a fire kindled by my parents as a child, but given oxygen as an adult by Manda both through her novels and other work that ultimately shaped the conceptualisation of this PhD. And it was to Manda's books that I turned when I needed an escape during the times of most intense study and analysis. For this she deserves my deepest thanks.

I am extremely grateful to my supervisors Professor Damian Maye and Professor Julie Ingram for their patience, kindness and boundary setting when needed – I am pretty certain they represent a near perfect package of supervisory skills for any PhD student.

None of this work would have been possible without the amazing farmers who opened their gates to me, and who continued to engage with me remotely, sharing their thoughts and reflections over many months. To you all, I am supremely grateful, mostly for teaching me so very much about your wonderful corners of the UK as well as sharing some of your most personal ideas about why you farm and what matters to you – thank you.

Thank you to my friends and colleagues who kept asking "how's the PhD going?" – who offered so much support and enthusiasm, right when I needed it the most.

And to James, my wonderful husband who has been the most phenomenal support over the last 4 years as I disappeared off on fieldwork or sat at my desk for hours on end, who kept the wheels turning and the cows moving. There aren't words enough to honour all you do for our family, so all I can say is thank you.

"We are not given the choice of how and when we must serve, only whether we do so with courage and so perhaps succeed, or with fear, in which case we will certainly fail."

Manda Scott, Boudica: Dreaming the Bull

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Chapter 1 – Introduction

1.1 Introduction

Agriculture in the United Kingdom is undergoing a period of profound and rapid transition. The dismantling of the Common Agricultural Policy following the UK's withdrawal from the European Union has led to a new policy paradigm centred on public goods, environmental outcomes, and land management for climate and nature (Franks, 2022). At the same time, farmers face increasingly volatile climatic conditions, rising input costs, shifting markets, and intensifying public scrutiny of the environmental impacts of food production (Raymond et al. 2023). These pressures converge to create a moment of uncertainty, but also one in which experimentation and realignment are visible across the farming landscape.

There have been calls for UK agriculture to shift to more sustainable approaches in order to maintain food production whilst also addressing the challenges of climate change, biodiversity loss and human health concerns (Dimbleby, 2022; Wared et al., 2025).

Agroecology offers one framework through which these shifts can be understood. Although often presented in policy discourse as a set of practices, agroecology is more accurately an approach to food and farming systems that integrates ecological processes, social relations and knowledge practices (Wezel et al., 2009). Within Europe, agroecology has been described as a form of farming system that involves reconfiguring relationships between people and nature, producers and consumers, and farming and wider society (Lamine, 2011). However, as scholars note, agroecology is vulnerable to being narrowed into a technical checklist, particularly when institutional structures privilege measurable indicators over lived experience (Lamine, 2015).

There is a growing body of literature in the UK that explores approaches to agricultural system transition, which has predominantly been focused on practice adoption (Padel et al., 2020; Cole et al., 2022) or Agricultural Knowledge Innovations System (AKIS) mechanisms (Mahon et al., 2017; Lozada et al., 2022). Existing research often prioritises structural barriers or practice adoption, yet farmers' experiences reveal a more complex interplay of ecological knowledge, values, identities, emotions, and social relationships. This thesis

responds to that knowledge gap by exploring how farmers understand the relationship between nature connectedness, agroecological values, and the transformation of their farming practices, and how these relational dimensions shape motivations and decision making within agroecological or regenerative systems.

1.2 Aims, Objectives and Research Questions

Farmer understandings of agroecology, defined here as the application of ecological principles to agricultural systems and practices (Pretty, 2007; Altieri, 2009), are not widely reported in the UK context, with even less empirical literature examining understandings of regenerative agriculture. While some research has explored the on-farm development of agroecological practices and proposed models of transition, these studies have rarely focused on the UK, nor have they sufficiently examined the role of farmers' relationships with nature, particularly more-than-human connections, in shaping transition processes.

The overarching aim of this research is to examine how UK farmers understand agroecology and to explore the role that human–nature connectedness, including relationships with the more-than-human world, plays in shaping those understandings and subsequent farm system development.

To address this aim, the research has the following objectives:

1. To explore how farmers conceptualise agroecology and regenerative approaches within their own farming contexts, values, and experiences.
2. To examine how farmers understand and experience connections with nature, including more-than-human relationships, and how these connections influence motivations, decision-making, and practice change.
3. To conceptualise agroecological transition at the farm scale using a systems approach, attending to interrelationships between ecological, social, cultural, and economic dimensions of change.
4. To analyse human–nature connectedness and more-than-human relationships as potential leverage points for transformation, alongside ways of knowing and

institutional structures that enable or constrain change (drawing on Abson et al., 2017).

5. To investigate the role of farmer-to-farmer learning, peer networks, and knowledge exchange practices in supporting or shaping agroecological transition.

Empirically, the research focuses on farmers engaged in a range of intervention practices and modes of learning and exchange. These include participation in informal digital peer networks such as WhatsApp groups, involvement in formalised botanical interest grazing groups (both established and newly formed), and engagement with knowledge exchange activities facilitated by organisations including the Nature Friendly Farming Network, the Soil Association, and Pasture for Life.

Guided by these aims and objectives, this PhD addresses the following research questions:

1. How do farmers understand the relationship between nature connectedness, agroecological values, and the transformation of their farming practices?
2. In what ways does nature connectedness shape farmers' motivations, decision-making processes, and pathways of transition within agroecological or regenerative farming systems?
3. How do farmer-to-farmer knowledge exchange practices contribute to transformation, particularly through shared values, relationships with nature, and systems-level learning?
4. What tensions or alignments exist between farmers' nature-connected practices and existing policy or market structures, and how might interventions better support agroecological transformation at the farm scale?

1.3 Overview of Thesis

In this chapter I have begun with an overview of the need for transformation of food and farming systems, the concept of transition and set out the research objectives for this PhD.

In Chapter 2, I present a thematic literature review to situate this thesis within the existing body of literature, particularly sustainable agriculture and agroecology scholarship.

In Chapter 3 I present the conceptual framework for this thesis, showing that whilst there is strong evidence for sociotechnical and socioecological models of transition as well as highly developed analysis of transition through social norms and networks research, there is opportunity to take a more explicit systems-based approach in understanding how agroecology offers ‘clumsy solutions’ to wicked problems. This framework is structured around three interrelated domains: Re-think, Re-connect, and Re-structure as proposed by Abson et al., (2017) as deep levers for transformation. The Re-think dimension engages with shifts in knowledge, values, and ways of knowing, challenging dominant productivist paradigms and opening space for alternative understandings of farming, nature, and food systems. The Re-connect dimension foregrounds relationships predominantly between farmers and the more-than-human world, but also between producers, communities, and place, highlighting the relational and experiential aspects of agroecological transition. Finally, the Re-structure dimension addresses the material and institutional conditions that enable or constrain change, including markets, policy frameworks, land tenure and supply chains. By bringing these three domains together, the framework enables a more integrated analysis of agroecology as a systems-based response to complex, interdependent challenges, moving beyond partial accounts of transition to consider from a systems perspective how cognitive, relational and structural transformations must co-evolve.

In Chapter 4 I detail the methodological approach for the research, showing how the chosen methods of walking interviews and supplementary data collection through WhatsApp align with the underlying conceptual framework.

In Chapter 5, I present the findings from the interviews with farmers using the lens of deep levers for transformation to structure my findings. The chapter explores participant farmer identity, their perceptions of agroecology and how this connects to concepts linking landscape and meaning. Chapter 6 goes on to frame an analysis of the interviews through three specific lenses: rethinking learning, reconnecting with nature and restructuring governance.

In Chapter 7 I discuss the findings in detail, setting them within the context of existing literature. I draw links back to my conceptual framework, showing opportunities and limitations of the approach. I also highlight where this thesis contributes to knowledge, notably the body of scholarship on transition and system transformation.

In Chapter 8, I draw final conclusions and suggest future opportunities for further research, synthesising the findings of the thesis to argue that agroecological transitions are fundamentally shaped by farmers' relationships with nature. I demonstrate how these relationships influence not only on-farm decision-making and management practices, but also the ways in which farmers interpret knowledge and engage with uncertainty as they navigate wider social, economic and policy contexts. Drawing on the Re-think, Re-connect and Re-structure framework, I show that shifts in worldview and understanding (Re-think), evolving relational engagements with the more-than-human world (Re-connect), and the enabling or constraining conditions of markets, policy and land access (Re-structure) are deeply intertwined and co-evolving. The chapter further highlights that stronger connections with nature are not only associated with ecological outcomes but are also closely linked to forms of economic resilience. Farmers who work more closely with natural processes, through approaches that emphasise soil health, biodiversity, and ecological interactions, often reduce reliance on external inputs, improve system adaptability, and develop more robust responses to environmental and market variability. In this way, working with nature emerges not as a trade-off with productivity or viability, but as a key pathway through which resilience is built within farming systems.

The chapter reflects on how these dimensions collectively shape the possibilities and limits of agroecological transition, highlighting the importance of relational ways of knowing and being in driving change, while also recognising the structural barriers that can constrain transformation. In doing so, it contributes to ongoing debates within agroecology and sustainability transitions by foregrounding the role of human–nature relationships as a central, yet often underexplored, driver of system change, and identifies key areas where further research is needed to better understand and support these processes in practice.

In this thesis I argue that agroecological transition in the UK is best understood as a form of system transformation involving interconnected shifts in knowledge, practice, identity, and relationality. I position nature connectedness as central to this process, shaping how farmers interpret ecological change, imagine alternatives, and sustain commitments to more regenerative futures.

Chapter 2 – Literature Review

2.1 Introduction

In this chapter I review existing literature to contextualise the thesis and identify themes and research gaps. I set out the research context and the challenge this PhD is concerned with addressing. More specifically, the chapter uses the literature to set out the basis for sustainable agri-food systems and to explain and situate the place of agroecology within that wider transition narrative. I argue that whilst agroecology is becoming increasingly debated, it is an important approach through which to support a transition to more sustainable agriculture practices. The review seeks to define agroecology within this context, recognising the complexity of such conceptualisation. It explores the facets of agroecology, primarily in terms of a scientific discipline (through the definition of agroecology), a social movement and as an agricultural practice to reflect current modes of articulation for agroecology, and to recognise its complexity and role across the food system (explicitly beyond the farm gate).

Models for transition are then reviewed, focusing on the role of education and knowledge exchange in supporting a shift to agroecology. Finally, the review explores leverage points for transformation and reflects on the potential of applying this systems approach at a farm scale. To develop this aspect, the review then draws links to wider research in more-than-human agri-food geographies, identifying a knowledge gap in terms of the effectiveness of networks to facilitate increased farmer connectedness with the agroecosystem, and the influence this has on decision making and ecological empathy.

2.2 The Context

Whilst the agriculture sector in the UK has been able to meet a growing demand for commodity food production since the 1950s, the environmental impact has been significant (Pretty et al., 2000). There are fundamental questions pertaining to how land can be managed to achieve multiple outcomes such as food production to meet the nutritional demands of a growing global population, whilst also protecting ecosystem services such as

biodiversity, clean water, nutrient cycling and energy flows using sustainable agricultural approaches (Godfray and Garnett, 2014).

It has been argued that there is an imperative for system transformation rather than just policy or practice reforms that leave the basic structure of modern food systems as they are (Pimbert, 2015; Figueroa-Helland et al, 2018; Sandhu, 2021). Globally, alternatives to conventional food and farming models, moving from linear output focused systems to circular ones mimicking natural cycles could offer such an opportunity (Pimbert, 2015; Panova et al., 2020). In a UK context, the requirement for transformation in farming practice is critical in meeting UK wide climate mitigation and biodiversity loss reversal targets (NFU, 2021), and there has been growing interest in the adoption of farm systems and practices that are considered as being more environmentally friendly (Hounscome et al., 2006; Short et al., 2019; Dwyer et al., 2020). There are a range of approaches to make agriculture more sustainable and even utilise agriculture to restore and regenerate landscapes, which are explored in this review.

2.3 Sustainable Agri-Food Systems

There is universal agreement that we require agriculture to be sustainable (Rigby and Cáceres, 2001), however agri-food systems and agricultural ecosystems are complex, varied and evolve in response to a range of external influences, global shocks and changes within the system (Tendall et al., 2015; da Silveira et al., 2021). There are challenges in defining different farming systems consistently, and whilst there are calls for a need to transition to more sustainable agriculture than the current productivist capital-intensive models (Gomiero et al., 2011; Kremen et al., 2012; Abson et al., 2017), defining those systems is at best, challenging and at worse, impossible (Pilgeram, 2013). The multidimensional properties of agricultural production, integration with natural systems and a more sustainable globalised food system are difficult to navigate or even conceptualise (Moon, 2015; Weltin et al., 2018).

Attempts have been made since the post-World War II 'green revolution' to articulate and define a more sustainable approach to farming and land management than the dominant productivism that ensued as a result of increasing mechanisation, synthetic fertiliser availability and globalised commodification of food products (Francis et al., 2003; Kuepper,

2010; Pilgeram, 2013; Reganold and Wachter, 2016; Gliessman, 2018). Both in the analyses and formation of alternative food systems, and in evaluation of the productivist paradigm, it is recognised that there is a need for a more sustainable agriculture to feed a growing population whilst operating within planetary boundaries (Gomiero et al., 2011).

A range of alternatives to the mainstream have been proposed including organic agriculture (Reganold and Wachter, 2016), permaculture (Mollison and Holmgren, 1978), sustainable intensification (Petersen and Snapp, 2015), conservation agriculture (Dumanski et al., 2006), regenerative agriculture (LaCanne and Lundgren, 2018), climate smart agriculture (Taylor, 2017) and agroecology (Pimbert, 2015; Altieri, 2018), as well as variations on these themes reflecting regional differences in how systems are defined or enacted (Pretty, 2007). A repeated critique of alternative food systems relates to their definitions (Goodman et al., 2014). As concepts such as sustainable, resilient or regenerative enter food system discourses, they are accompanied by debate and discussion about how to best define, categorise or regulate them (Loring, 2022). Some argue that these concepts are too vague (Born and Purcell 2006), others call for clear definitions and standardisation to ensure meaning and market value (Sutton 1996; Newton et al. 2020). There is also a call to recognise the emergent nature of these concepts, recognising their formation as they are put into practice in locally appropriate ways suited to particular social and ecological contexts (Eriksen 2013; Witter and Stoll 2017; Penca 2019). Whilst sustainable agri-food systems can be production and consumption oriented, this needs to be place-based, context dependent and in balance with the ecological environment (Van Zanten et al., 2018), which is in direct contradiction to homogeneous industrialised agriculture (Kremen et al., 2012).

2.4 The ‘Mess’ of Sustainable Agriculture

The range of system definitions and differences all, to some extent, operating in opposition to the dominant agricultural paradigm creates a challenging, messy landscape to navigate. As identified by Barabba et al. (2014), a ‘mess’ is itself a complex and dynamic system of interconnected problems that cannot be considered in isolation, where the interactions between the problems is as important as the problems themselves. Also referred to as a ‘wicked problem’ (Grint, 2008), this reflects the complexity of ecosystems, food production, social justice, the challenges of climate change mitigation and adaptation, which all need to

be considered when designing sustainable food and farming systems for the future, as identified by the Intergovernmental Panel on Climate Change (IPCC, 2019).

The Sustainable Development Goals (SDGs) reflect the need for a sustainable food system to not only be considered from the perspective of how food is produced, but also what is consumed and by whom, as well as encompassing social justice, land access, use and ecological functioning (Agarwal, 2018). Agroecology is linked to all the SDGs (Altieri and Nicholls, 2020) contributing directly and indirectly to the progress of each through technical and social strategies to reshape the food systems globally. However, manifesting this agri-food sustainability agenda through action represents a wicked problem (Martin et al., 2018). This wicked problem of sustainable food systems requires what Grint (2008) terms a 'clumsy solution'. In other words, an approach that creatively combines a range of perspectives on what the problems are and how to resolve them (Verweij et al., 2006). Authors have recently argued that agroecology has the potential to facilitate the development of clumsy solutions, giving voice to marginalised land workers and taking into consideration the complexity of agroecosystems (Zaremba et al., 2021). From this perspective, agroecology may not be the answer to the question of sustainable agri-food systems, but it could offer insights into future adaptive system design, particularly as it privileges knowledge and skills development (Francis et al., 2011) and is expansive in its reach across the entire agri-food system (Francis et al., 2003).

Expressions of agri-food systems that situate production within complex living systems, recognise the reciprocal relationships between humans and the landscape and create space for alternative ways of thinking and doing are required to support transformation (Gordon et al., 2021). Regenerative agriculture, organic farming and agroecology share many concerns and appear to offer similar solutions particularly in relation to complexity, reciprocity, and context specific action (Carlile and Cusworth, 2021), and represent current discourses both in academic and grey literature (see e.g. Beste, 2019; Hansen-Kuhn and Saunders, 2020; Hogg, 2021; Carlile and Cusworth, 2021; Tiftonell et al., 2022).

2.5 Defining Current Expressions of Sustainable Agriculture

As identified, there are various ways in which sustainable agriculture has been described but there are three prominent terms in current discourse: organic farming, agroecology and

regenerative agriculture. There are a number of overlapping themes between these terms, and their associated practices and this close inter-relationship has led to issues around definition, false competition and misunderstanding (Teal and Moss, 2022). As such, it is worth reviewing current definitions to develop clarity in how these terms and the systems they represent are similar or different, and to some extent what that means for their implementation.

Organic agriculture can be defined not only as a system that lacks synthetic chemical usage, but one that encompasses holistic thinking, a focus on soil health and circularity of nutrients and water (Lampkin, 1994; Rigby and Cáceres, 2001). It also has a relatively long history as a social movement (Balfour, 1943). Whilst organic farming is well established as an alternative or niche production system (Smith, 2006), it constitutes a legally defined and regulated system of production, codified through standards such as EC Regulation 2018/848 in the European Union and the Organic Products Regulations 2009 in the United Kingdom. Because organic farming is governed by statutory rules rather than voluntary guidelines, it sits firmly within the policy domain and is directly shaped by legislative decisions on certification, inspection, and compliance (Scialabba & Hattam 2002; Darnhofer et al. 2010). This legal status also structures organic agriculture's position in trade and consumption, since only products produced and certified under these regulatory frameworks can be marketed using the term "organic." As a result, organic farming is intertwined with international equivalence agreements, market access arrangements, and consumer trust, with certification functioning as a boundary mechanism that stabilises consumer expectations and enables premium pricing (Padel & Foster 2005; Wynen & Vanzetti 2008). The standards and requirements of certified organic farming provide clarity about what it is and how it is applied; however, these could be considered inflexible, with economic, policy and market barriers to transition cited by farmers (Strochlic and Sierra, 2007). The literature on organic agriculture is vast and informs this research within a specific context of transition, to be explored later.

Regenerative agriculture has only begun to receive substantial academic scrutiny in recent years, and the lack of consensus on its meaning has resulted in a wide array of interpretations across both scholarly and practitioner communities (Schreefel et al., 2020; Kipling et al., 2025). This conceptual plurality reflects, in part, the term's evolution from practitioner-led experimentation to a more formalised set of discourses within agricultural

science and policy. Definitions range from those emphasising process-based transitions, such as minimising soil disturbance, increasing biodiversity, and enhancing ecological functions, to those focused on measurable outcomes, particularly relating to soil carbon, biodiversity, and resilience (Newton et al., 2020). More expansive framings go further still, positioning regenerative agriculture as a systems-level paradigm that evaluates performance according to its ability to deliver highly productive, environmentally sound, nature- and biodiversity-respectful, socially responsible, and ethically committed agriculture within planetary boundaries (Garbisu et al., 2025).

Recent scholarship suggests that it is the organisation and relational functioning of agricultural systems, rather than any specific set of practices, that determines whether a system can be considered regenerative (Loring, 2021). This system-oriented framing resonates with broader sustainability science but has also contributed to the perception that regenerative agriculture is inherently flexible and adaptable. Such flexibility is further reinforced by the absence of legally defined standards. Although several regenerative certification schemes now exist, predominantly in the United States, these vary considerably in scope and criteria, thereby limiting standardisation (A Greener World, 2022).

The lack of a unified definition raises important questions about governance and legitimacy, including who has the authority to define what counts as regenerative and on what basis. Critics highlight the risks of greenwashing and corporate co-option, where the term is used rhetorically to legitimise incremental or cosmetic changes rather than substantive shifts in production systems (Landzettel, 2022). Concerns have also been raised about internal inconsistencies within regenerative discourse, particularly around profitability and economic sustainability, which may obscure the real financial pressures facing farmers seeking to transition (Francis, 2020). Despite these tensions, recent analyses indicate that conceptualisations of regenerative agriculture exhibit considerable underlying convergence, especially around its orientation toward process-based improvement, ecological restoration, and enhanced system resilience (Wilson et al., 2022).

Nevertheless, significant knowledge gaps remain. Much of the current evidence base is fragmented, with limited systems-level research capable of evaluating the interactions, trade-offs, and cumulative impacts of regenerative practices at farm, landscape, or supply-chain scales. As such, further empirical work is needed to substantiate many of the claims

made about regenerative agriculture's ecological and socio-economic benefits and to understand the contexts in which regenerative transitions may be most effective.

Where regenerative agriculture lacks a single, widely accepted definition and organic farming is codified through legislation, a conceptual space emerges between them that encompasses socially just, ecologically grounded, and system-wide approaches to food and land management: agroecology. In some contexts, agroecology and regenerative agriculture are used interchangeably, with fluid boundaries between the terms (Newton et al., 2020), particularly as recent articulations of regenerative agriculture increasingly emphasise its capacity to deliver socially responsible and ethically committed food systems (Garbisu et al., 2025). Yet Francis et al.'s (2003) foundational description of agroecology as *the ecology of the entire food system* provides a more comprehensive framing, especially when positioned alongside other strands of sustainable agriculture. This systems-level perspective is further reinforced by Altieri's (2018) proposition that agroecology constitutes the scientific basis for sustainable agriculture, rather than a discrete set of practices. Nevertheless, agroecology, like all frameworks for sustainable agriculture, ultimately forms part of a broad, evolving, and inherently ambiguous constellation of concepts responding to the unprecedented challenges posed by climate change, biodiversity loss, and global socio-ecological instability (Gomiero et al., 2011).

2.6 Defining Agroecology

As with other expressions of sustainable agriculture, definitions of agroecology have developed over time and can vary depending on where they are used. In broad terms, agroecology attempts to conceptualise and define an agri-food system that reflects inherent complexity whilst seeking to encompass productivity, environmental issues and social justice (Gliessman et al., 1998; Francis et al., 2003; Altieri, 2009; Wezel et al., 2014; Figueroa-Helland et al., 2018; Wezel et al., 2020; Anderson et al., 2021). Agroecology has been defined in different contexts and at different points in time as a scientific discipline, a social movement and as an agricultural practice (Wezel et al., 2009). With relatively recent academic history but with elements that are informed by practices developed over millennia, it is multifaceted and complex in its nature and contextual application (Francis et al., 2003; Wezel et al., 2009).

Agroecology was originally defined as applying ecological concepts and principles to the design and management of sustainable agroecosystems, or the science of sustainable agriculture (Altieri, 1995; Gliessman 1990, Gliessman et al., 1998). This body of literature informed later definitions such as “the study of the interactions between plants, animals, humans and the environment within agricultural systems” (Dalgaard et al. 2003, p42).

However, these definitions primarily relate to production processes of agriculture, and as such, agroecology at that point, was essentially confined to within the farm gate.

Recognition of agroecology that extends beyond agricultural practice and the farm gate into the wider food system is captured in Francis et al.’s (2003) definition of agroecology. They define it as the ecology of the entire food system, which encompasses ecological, economic and social dimensions and considers global equity in terms of nutrition, health, and food security.

In response to the evolution of the field, Gliessman (2018, p599) set out to define agroecology, taking into account his own and others’ previous explorations of the concept, as:

“Agroecology is the integration of research, education, action and change that brings sustainability to all parts of the food system: ecological, economic, and social. It’s transdisciplinary in that it values all forms of knowledge and experience in food system change. It’s participatory in that it requires the involvement of all stakeholders from the farm to the table and everyone in between. And it is action-oriented because it confronts the economic and political power structures of the current industrial food system with alternative social structures and policy action. The approach is grounded in ecological thinking where a holistic, systems-level understanding of food system sustainability is required.”

This comprehensive explanation of agroecology reflects multifaceted requirements for sustainability by meeting a triple bottom line (Slaper and Hall, 2011), the knowledge intensity of agroecology (Caron et al., 2014; Carlisle et al., 2019) and the importance of recognising the role of political power in addressing food system transformation (Figuerro-Helland et al., 2018; Anderson et al., 2021).

Gliessman’s expansive articulation of agroecology and its relationship to practical action provides a useful anchor for consolidating the concept in its contemporary form. His work aligns closely with efforts by the Food and Agriculture Organization of the United Nations

(FAO) to establish a coherent framework within which agroecology can be understood. Rather than offering a singular definition, the FAO identifies ten interrelated elements designed to capture the key ecological, social and economic principles of agroecology (FAO, 2018). This framework builds on the historic Nyéléni Declaration of the International Forum for Agroecology (IPC, 2015), which represented a landmark moment in positioning agroecology as both a scientific approach and a political project. As illustrated in Figure 2.1, the FAO elements span broad systems-level concepts such as diversity, co-creation of knowledge, efficiency, resilience and circularity, reflecting the holistic perspective that characterises agroecological thinking (Altieri & Nicholls, 2020).



Figure 2.1 The Ten Elements of Agroecology (Source: FAO, 2018: online)

The Nyéléni Declaration explicitly recognised agroecology’s role in advancing food sovereignty and grounded its framing in historic and local knowledge systems. The participatory development of the declaration ensured that the voices of small-scale producers, indigenous peoples and social movements were central, thereby anchoring agroecology in lived experience as much as in agronomic science. In this formulation, agroecology encompasses not only environmentally grounded production practices but also commitments to social justice, cultural identity, gender equity, community self-determination and rural economic viability. This emphasis on rights, responsibilities and collective agency marks a significant departure from more production-centred paradigms

such as climate-smart agriculture or sustainable intensification, which typically foreground technical efficiency and output optimisation (Pimbert, 2017; Anderson & Maughan, 2021).

Consequently, agroecology is increasingly recognised as an integrated and holistic approach that situates farming within broader socio-ecological systems, emphasising transformation rather than incremental adjustment. In other words, at its core is a mission to radically change and ideally replace the existing agri-food system. Defining agroecology as a perspective (Mendez et al., 2013; Lampkin et al., 2015), a paradigm (Poux et al., 2021), a collection of ten elements (FAO, 2018) or a set of thirteen principles (Wezel et al., 2020) reflects the complexity and breadth of the concept. Thus, defining it in a concise way is difficult, leading to some criticism of agroecology being too fluid in its understanding and application as agroecological practice. There is a possibility that this is due to the cultural and linguistic differences arising from a model that has evolved from various roots and contexts globally, particularly France and Germany in Europe, the USA and Brazil (Wezel et al., 2009). Additionally, the critique has been countered by a suggestion that the evolution of agroecology as a field of knowledge will inevitably give rise to changing definitions over time, particularly as its scope includes natural sciences and social dimensions of agri-food systems (Mendez et al., 2013). Indeed, the dynamic nature of agroecology reflects the dynamic nature of the natural processes and social experiences that it promotes. Research to date reveals its inherent complexity and like its practices, agroecology is adapting to environmental conditions.

Agroecology as a term is used and revised by different actors across academia, policy and within the agricultural sector and configures as a vision of the future that may in some framings conform to the dominant industrial food and farming system epitomised through climate-smart agriculture (Saj et al., 2017; Shelton, 2020) or, in contrast, be mobilised within the paradigm of food sovereignty which has a more transformative intent, theory and practice (Pimbert, 2015). The next section expands on this alternative mobilisation of agroecology as science and practice.

2.7 Agroecology as an Alternative

The agroecological movement is examined in greater depth later in this chapter, but it is important to note here that agroecology often positions itself as an alternative paradigm to

the dominant food and farming system, operating in tension with mainstream social, technical and epistemic structures (Coolsaet, 2016). Frequently described as a niche or counter-hegemonic practice, agroecology is framed as an alternative to conventional agriculture and the wider industrial food regime (Kremen et al., 2012; Figueroa-Helland et al., 2018). Its distinctiveness lies in its departure from established institutional, cultural and technological norms that characterise conventional production systems (Ingram, 2018). Conventional agriculture refers to the dominant model of industrialised farming, characterised by high external inputs, including synthetic fertilisers, pesticides, herbicides and fossil fuels, together with monocultural cropping, mechanisation and yield-maximisation strategies (Gliessman, 2015). This model has been widely criticised for its detrimental impacts on environmental quality, biodiversity, water resources, human health and its contribution to climate change (Kremen et al., 2012). Conventional or industrial agriculture typically applies resource inputs in a uniform manner, overlooking the spatial heterogeneity of soils, microclimates and livestock requirements, which can lead to inefficiencies and over-application aimed at protecting yields (Corwin & Scudiero, 2019). In contrast, agroecology seeks to harness and enhance natural processes within specific ecological and cultural contexts, thereby supporting diverse, resilient and healthy agroecosystems (Cusworth et al., 2021).

Whilst agroecology has been recognised by the FAO and is present in some political discourse, its move into the mainstream has been 'glacial' (Anderson and Maughan, 2021) and as such, it continues to occupy an 'alternative space' to the conventional. For some scholars, this alterity is important, as it defines agroecology through its resistance to the conventional, offering practitioners solidarity in a counter-hegemonic movement (Figueroa-Helland et al., 2018), an approach that is set in opposition to capitalist and colonial agri-food systems (Dale, 2019). Whilst agroecology offers opportunities to revitalise small farms, create alternative animal production systems and enhance urban and peri-urban agriculture (Altieri and Nicholls, 2021), when confined to these components of agriculture and defined primarily in its alterity there may be potential for limiting system transformation. This could particularly be so when explored through perspectives that do not recognise or address power imbalances that force agroecology to exist within a niche. As such, maintenance of niche movements and practices as alternatives to the mainstream, enables their control by

hegemonic power structures, ensuring that they do not disrupt or destabilize the status quo. This puts at risk the potential for the agroecological transition.

2.8 Agroecology as a Practice

Organisations working with farmers in the knowledge exchange space tend to focus on the practical farm-level applications associated with agroecology (Soil Association, 2020; FFCC, 2021; Farmers Guide, 2022). Many of these are well established in literature and are reflected in the FAO's (2018) Ten Elements of Agroecology, supporting the adoption of agricultural practices that promote advancement of the SDGs (Agarwal, 2018; Altieri and Nicholls, 2020). Agroecological practices contribute to the delivery of ecosystem services and replace external inputs (Boeraeve et al., 2020) which can support a more resilient and sustainable agriculture than that which relies on inputs and undermines ecological functioning.

As with the concept of agroecology, the lack of a precise definition of specific agroecological practices may call into question the validity and robustness of particular approaches (Dumont et al., 2021). Agroecological practices are defined as agricultural practices that are not ecologically harmful (Wezel et al., 2009). However, the environmental problems which these practices are supposed to solve or reduce the impact of are not always clarified or fully understood either by researchers or farmers (Wezel et al., 2009).

Whilst identifying a concise list of agroecological farming practices may be an ever-evolving process, that adapts with knowledge development, there are practical applications that contribute to improving agroecosystem sustainability and resilience. These practices often reflect natural processes and ecosystem services such as cycling of nutrients, including biological nitrogen fixation, natural regulation of pests, soil and water quality and conservation measures, biodiversity gains and carbon sequestration (Wezel et al., 2014).

The application of an outcome focused approach by land managers to deliver ecosystem services and environmental benefits such as biodiversity enhancement, improved soil health, clean water and fresh air, which can all contribute to climate change mitigation, can be indicative of agroecological practices (van der Werf and Petit, 2001; Thompson et al., 2021; SOSFaim, 2021). It should be noted that there are non-agroecological practices that can also deliver these benefits, through approaches such as sustainable intensification and

climate smart agriculture (Campbell et al., 2014). Farms undertaking agroecological practices provide increased ecosystem services compared to conventional farms (Garbach et al., 2017; Norton et al., 2022) and have the potential to reduce adverse environmental impacts associated with intensive agricultural production at the farm level (Cole et al., 2021). This is contested, particularly through the land sparing / land sharing debate which reflects the need for in situ conservation of species requiring undisturbed natural habitats (Grass et al., 2019) and the potential for increasing productivity in some areas to enable nature restoration in others (Green et al., 2005). Agroecology has been cited as offering a third option between global commodified agriculture and nature conservation (Tiftonell et al., 2020) and arguably provides a more nuanced approach, than the land sparing / land sharing debate. The latter, for instance, does not offer objective hypotheses for biodiversity gain whilst producing food, and instead polarises two very different conceptualisations of how humans interact with nature (Loconto et al., 2020). However, as with most debates relating to agri-food systems and land use, the solution is more complex, and management of multifunctional landscapes requires both context-specific land-sharing and land-sparing measures within spatially well-connected landscapes (Grass et al., 2019).

The role of working with natural processes to enable and enhance multiple function and productivity outcomes are central to agroecological practice on farms (Pimbert, 2015). Practices such as the integration of livestock with trees, known as silvopasture, (Udawatta, 2017; Pagella and Whistance, 2019) or planting multiple crop species together to simulate natural polycultures as found in forests and grasslands (Yahya et al., 2017) offer a range of benefits across a triple bottom line.

Table 2.1 presents a range of practices that can be identified as agroecological, across a range of farm types.

Table 2.1: Examples of agroecological farming practices.

Farming practice	Definition	Advantages / Constraints	Sources
Agroforestry	The deliberate integration of trees and shrubs with crops and/or livestock to create multifunctional agricultural systems.	Advantages: Enhances biodiversity, soil fertility, and carbon sequestration; provides shade, wind protection, and diversified income (e.g. timber, fruit, fodder). Constraints: High establishment costs, delayed returns, and management complexity, particularly in mechanised systems.	Altieri, M.A. (2018) FAO (2020) Jose, S. (2009)
Intercropping / mixed cropping	Cultivating two or more crop species simultaneously on the same field to optimise ecological interactions and resource use.	Advantages: Improves nutrient cycling, pest and disease suppression, and yield stability; increases system resilience. Constraints: Complex management, variable market compatibility, potential competition between species.	Gliessman (2015) Lithourgidis et al. (2011) Vandermeer (1989)
Legumes in rotations/swards	Strategic use of plants forming symbiosis with Rhizobium bacteria to biologically fix atmospheric nitrogen, enhancing soil fertility.	Advantages: Reduces dependence on synthetic fertilisers; improves soil structure and organic matter; supports pollinators. Constraints: Sensitive to soil pH and moisture; benefits accrue over multiple seasons.	Peoples et al. (2009) FAO (2016) Jensen et al. (2020)
Water conservation (e.g. mulching, crop residues)	Use of organic or inorganic cover to retain soil moisture, regulate temperature, and reduce erosion.	Advantages: Increases water infiltration, reduces evaporation, prevents erosion, enhances soil carbon and microbial activity. Constraints: May harbour pests or diseases; labour-intensive in some systems; slower soil warming in spring.	Rockström et al. (2010) Lal, R. (2020) FAO (2017)
Animal manure as a fertiliser	Recycling of animal excreta to provide organic nutrients and improve soil structure and biological activity	Advantages: Increases soil fertility, organic carbon, and microbial life; reduces reliance on synthetic inputs; supports nutrient cycling. Constraints: Risk of nutrient runoff or pathogen spread; uneven nutrient	Chadwick et al. (2011) Sommer & Hutchings (2001) Nicholson et al. (2013)

		composition; requires appropriate storage and timing.	
Biological pest control	Regulation of pest populations through the use of natural enemies, habitat management, or ecological balance rather than synthetic pesticides.	Advantages: Reduces pesticide use and resistance; promotes biodiversity and ecosystem resilience; enhances long-term pest regulation. Constraints: Slower response time; variable effectiveness; requires monitoring and ecological knowledge.	van Lenteren (2012) Gurr et al. (2017) Altieri & Nicholls (2004)

However, if proponents of agroecology only focus on agronomic or ecological aspects of agroecology (biodiversity-based agriculture, for example (Duru et al. 2015)) then the complexity of agricultural and food systems is missed. Denying social-ecological aspects of agroecology risks silencing knowledge contributions made outside the western scientific paradigm (Mendez et al., 2013) and reflects a potentially regressive step in narrowing the field after it has evolved in its complexity to reflect the intricate systems it represents.

2.9 Agroecology as a Movement

In addition to practical applications at the farm level, agroecology includes humans and communities as integral to ecosystems (Figuerola-Helland et al., 2018). For example, linking to indigenous knowledge and ways of being by incorporating techniques and ideologies found in traditional agroecosystems characterised by co-evolution of nature and cultural practices (Francis et al., 2003; Altieri, 2009).

Advocates of an agroecological vision point to a movement and associated practices that work to ensure that everyone has access to culturally appropriate, local, nutritious and affordable food, and that producers of such food can work with dignity and earn a decent living (e.g. Wach, 2020). This is often referred to as food sovereignty, where those people who produce, process, distribute and eat food have control over the policies and mechanisms designed to enable those activities (Altieri, 2009; Gliessman et al. 2019). Such an approach differs to food security, defined as “*when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*” (Peng and Berry, 2019, p1). Food

security is generally consumption focused, whereas food sovereignty also takes into consideration methods and governance of production and is embraced by the agroecological movement as an alternative to neoliberal, market and trade-based global agri-food system dependencies (Altieri, 2009). Whilst food security relates to food access at a point in time, food sovereignty relates to ongoing processes with adaptive capacity that can adjust in order to achieve food security (Wald and Hill, 2015). Food sovereignty is reflected in alternative food networks (AFNs) that promote local, autonomous production-consumption cycles, technological sovereignty, and farmer-to-farmer networks (Ilbery & Maye, 2005; Altieri, 2009; Tregear et al., 2025). AFNs such as community supported agriculture, farmers' markets and farm shops, box schemes, cooperatives and other initiatives often operate within agroecological systems (Michel-Villarreal et al., 2019). The agroecological movement contributes to the development and expansion of these AFNs, primarily based on effective social relations and environmental concern (de Sá Resende and de Freitas, 2019). Food sovereignty reflects the origins of agroecology as a political and social movement through organisations such as Campesino à Campesino and La Via Campesina where communities have engaged with agroecology to establish local agri-food systems that have their roots in localised culture, knowledge and food ways (Gliessman et al., 2019). Food sovereignty, along with food justice and a right to food are all concepts that relate to achieving food security and share aspirations for reconnecting local and global agri-food systems, social justice, and citizens and consumer participation in food governance (Dekeyser et al., 2018).

The Nyéléni Declaration (2007), set out six pillars of food sovereignty, which are not only intrinsically linked to agroecology, but agroecology features as one of the pillars. This demonstrates a symbiosis between these two concepts, where agroecology is endorsed for sustainable farm practices as well as environmental and community benefit. The other pillars of food sovereignty relate to food for people, where there exists a right to culturally appropriate and healthy food, food producers who are centred in the agri-food system and policy development, localised food production and consumption and also local food control and governance and lastly, recognition of farmer knowledge networks where knowledge and skills are developed on a peer-to-peer basis (Nyéléni Declaration, 2007).

This explicit linking of food and farming within agroecology goes some way to undermine the industrial commodified system and by considering 'people who eat food' as opposed to

‘consumers’ it is possible to articulate a detachment from a capitalist model (Wach, 2021). The lens of food citizenship and sovereignty give a route to democratisation of the agri-food system, as whilst democratic institutions require democratic citizens, a sustainable agri-food system requires food citizens who stand in opposition to the hegemony and in solidarity with their community (Gómez-Benito & Lozano, 2014). Agroecology as a movement challenges the idea that people are simply consumers at the end of a food chain. Eaters, growers and farmers are reassessing their role in the food and farming sector, their relationships with food and the natural world are being reconsidered, particularly as social and environmental concerns take centre-stage in the public discourse (van der Ploeg, 2014). Instead of consumers, use of the term food citizen gives opportunities to express our care for each other, health, the environment and for animals through a relationship with the agri-food system. (Food Ethics Council, 2019).

The similarities between the agroecological movement, AFNs and the organic movement can offer insights into challenges for transition. Furthermore, Social Movement Theory offers insights into how social problems (in this case, unsustainable agriculture) are transformed into social movements that represent solutions (e.g. agroecology) (Peterson, 1989). Labour availability and skill (Bruce, 2016), low social capital (Ribeiro et al., 2020), accessibility of both point of sale and goods themselves, economic sustainability and food quality (Barbera and Dagnes, 2016) are all barriers for producers. This suggests that whilst the movement of agroecology may gain traction, translating that into active food sovereignty may pose problems, thus limiting the potential for system transformation.

The importance of local knowledge, skills, production systems and governance tightly bind food sovereignty and the agroecological movement, and whilst the research basis of the science of agroecology is growing (Wezel et al., 2009), researchers and advocates increasingly argue that it is critical agroecology is not viewed only as an ‘academic’ concept as it is grounded in local practice and represents diversified farming methods that are based within “decolonial, indigenous and agroecological knowledge-praxis” (Figuerola-Helland et al., 2018, p175).

This localised, social, and human dimension of agroecology suggests that delivering practical solutions to situated agricultural challenges requires a genuinely bottom-up approach (Barbera and Dagnes, 2016), one that weaves together scientific insight, traditional

ecological knowledge, and the lived expertise of local communities. This orientation aligns closely with the FAO's (2018) Ten Elements of Agroecology, which foreground human and social values, co-creation, and the horizontal sharing of knowledge as central characteristics of agroecology in practice. Building on these foundations, the thirteen principles proposed by Wezel et al. (2020) further emphasise themes such as the financial vulnerability of small-scale farmers and their reliance on solidarity economies, the importance of peer-to-peer knowledge exchange, and the role of collective participation and shared cultural values in shaping more just and resilient agri-food systems.

Taken together, these developments illustrate how agroecology has evolved from a focus on farm-level practices to encompass the wider agri-food system, recognising that individuals, communities, and their relationships contribute to the shaping of agroecological transitions. This expansion of scope, and the explicit integration of social, cultural, and political dynamics, distinguishes agroecology from other sustainability approaches such as organic or regenerative agriculture, which, despite important overlaps, tend to place less emphasis on the systemic and relational dimensions of agri-food system change (Carlile et al., 2021).

Beyond the recognition of the social and cultural in agroecology, scholars have also described it as a form of resistance, as an alternative to the practices and system changes that have become widespread since the green revolution, such as agricultural simplification through monocultures and an industrialised and corporatised agri-food system (Gliessman, 2018). Early agroecological movement mobilisation responded to rapid industrialisation and reflected a predominantly class related struggle grounded in Marxist theory, particularly in South America (ViaCampasina, 2021). European agroecology, which initially developed in relation to practice (Wezel et al., 2009) but has developed as a social movement, could be considered as following a "new social movement" paradigm, where individuals participate as a form of post-material politics concerned with environmentalism and pastoralism (Salonen and Ahlberg, 2013). Within the UK, the Landworkers' Alliance (LWA), a member organisation of La Via Campesina and union for land workers calls for an agroecological transition in the UK to ensure farmers and growers can produce healthy, local, and affordable food. In addition, the LWA advocates for member interests to develop more sustainable and agroecological systems and farming practices, promotes the UK food sovereignty movement and acts in solidarity with global peasants (LWA, 2022). This organising and activism appears

to primarily centre around horticultural producers and urban growers and seeks to address the limited connections of urban food networks to the circuits of power and influence (Reed and Keech, 2017). There is a significant gap in the literature relating to the role of activism in the wider agriculture sector particularly in the UK. Whilst women farmers and small-scale production systems have been the subject of academic discourse, or those groups who sit outside of agriculture and campaign for system change, little is known explicitly about the role of campaigns, activism or organising across the sector. Whilst UK farmers refer to social networks and a sense of community as being integral to transitioning to more sustainable farming practices (Padel et al., 2019; Anderson et al., 2019a; Rust et al., 2021), the specific processes used by social movements, as opposed to networks, to ensure agroecology and food sovereignty are mutually reinforcing are not well documented (Anderson et al., 2019b). This suggests that transition could be considered from a movement perspective, rather than looking at the mechanics of how knowledge is shared.

The movement of agroecology, beyond social networks, also represents a political element that recognises the current catastrophe in the agri-food system that contributes to climate change, biodiversity loss and the human health crisis. The latter is the result of a globalised industrial agri-food system that has been corporatised on a transnational scale to create maximum financial profit (Pretty et al., 2000; Godfray and Garnett, 2014; Figueroa-Helland et al., 2018). This primarily capitalist system that is supported by the state is oligopolistic in nature, and whilst it feeds millions of people, is doing so through extractive and exploitative means leading to overproduction of poor nutritional quality commodity foods (Figueroa-Helland et al., 2018). Agroecology offers a form of resistance to the entire commodified global agri-food system, challenging the hegemony and creating opportunity for local communities rather than globalised corporations (Wach, 2020).

What we observe from the above studies is an agroecological movement that goes beyond the general promotion of farm-based practices to advocate for wider agri-food system reform (Wezel et al., 2009; Dalgaard et al., 2003). This not only relates to food production but a democratising of the agri-food system (Dekeyser et al., 2018). For farmers and growers this means an agri-food system that creates opportunities for decent work and respectable livelihoods on the land, thereby contributing to vibrant rural communities and local businesses (LWA, 2021). Agroecology offers a viable alternative to land-grabbing (Rosset,

2011) and re-peopling through improved land access for small scale farms and creates legitimate space for people and the natural environment in cultural landscapes that reflect a lifestyle that is economically, environmentally and socially sustainable (Davidson, 2021). For people who eat food, it means an agri-food system that ensures everyone, including the most disadvantaged and vulnerable in society, has access to nutritious food that promotes good health.

An integration of agroecology as a science, practice and social movement could create the framework for agri-food system transformation (Gliessman, 2018). Such holistic and context dependent approaches stand apart from conventional agriculture which promotes simplification of component parts and linear systems. Instead, agroecology is described as promoting circular, resilient and decentralised food and energy systems (Pimbert, 2015), that offer potential for a sustainable food and farming future.

2.10 Agroecological Transition

If agroecology offers a pathway towards sustainable agriculture (Altieri, 2018) that encompasses the ecology of the food system (Francis et al., 2003) but is only enacted on around 30% of the world's agricultural land (Tittonell et al., 2020) then understanding opportunities and barriers to transition is of research importance.

There is established literature in farmer-based transitions to agroecology globally, reflected both in terms of agroecological practice, the movement and more formalised education. For example, farm practice analysis has been undertaken in recent years in Scotland (Cole et al., 2022) and in relation to legumes as part of crop diversification in England (Cusworth et al., 2022), analysis of vegetable growing in Belgium through an agroecological lens (Dumont et al., 2020) and farmer perspectives of agroecological transition in Europe and the UK (Mottershead and Maréchal, 2017; Padel et al., 2017). Research into the role of communities of practice, or the agroecological movement, in enabling the agroecological transition has also been undertaken in Europe (Anderson et al., 2018) and participatory methods to enable transition in a range of contexts, particularly in South America (Mendez et al., 2017; Lopez-Garcia et al., 2021). Frameworks and models for scaling agroecology or enabling the transition (Dalgaard et al., 2003; Duru et al., 2015) and evaluation of agroecological education (Francis et al., 2011) have also been explored. In addition, much can be drawn

upon from research into transitions to organic agriculture or other expressions of sustainable agriculture (Morgan and Murdoch, 2000; Smith, 2005; Ingram, 2018).

Models for transition are explored in a later chapter, but it worth recognising that transition literature generally reflects particular routes or so-called 'pathways for transition' (Turnheim et al., 2015). In relation to sustainable agriculture these are generally the socio-technical framework which also relates to strategic niche management and the multi-level perspective (MLP), the socioecological framework and a third which investigates social norms and networks and their influence on change (Ong and Liao, 2020). In addition, leverage points for transformation are becoming more widely researched (see e.g. Abson et al., 2017; Fischer & Reichers, 2019; Staton et al., 2024).

The differences between transition and transformation are explored in detail in 3.6.1, but essentially where transitions may reflect more gradual or linear changes, transformation involves more fundamental, non-linear reconfigurations of systems.

Sustainable transition or system transformation can occur across different scales, with a farm-scale shift towards agroecology requiring expertise, commitment to change and, potentially, significant investment (Cole et al., 2021). This reflects earlier work to investigate the transition to organic agriculture, which could arguably be considered as the precursor to the agroecological transition (Smith, 2005). However, not only has farm level change been identified as critical in the transition to sustainable agriculture, but also organisation of wider agri-food systems related to supply chains and their governance (Lamine, 2011; Kremen et al., 2012). These varying levels of transformational change across different scales (e.g. farm, supply chain, governance) have been reflected in organic transition literature and continue to be present in current agroecological transition discourse (Duru et al., 2015; Altieri and Nicholls, 2020).

A key point of divergence between agroecological and organic transitions lies in the extent to which agroecology is explicitly aligned with the politics of food sovereignty (Pimbert, 2015). While organic agriculture is often framed as a niche production system (Smith, 2005), it has increasingly been incorporated into mainstream markets and supply chains (Wald and Hill, 2016; Chintakayala et al., 2018). For many agroecologists, this process of mainstreaming is problematic, as it risks diluting the transformative intent of agroecology, whose alterity is central to its identity both as an alternative food network and as a mode of resistance to

dominant agri-food regimes (Wald and Hill, 2016; Figueroa-Helland et al., 2018). This commitment to alterity is reinforced by agroecology's explicit connection to decolonised agri-food systems, indigenous land-based practices, and cyclical, seasonal food ways, which together position animals as integral components of the agroecosystem and as part of a more ecologised approach to agriculture (Tornaghi and Dehaene, 2020). The question of whether an agroecological future is even possible has been answered by Poux and Aubert (2018) in their modelling for an agroecological Europe in 2050. Their modelled scenario is based on the widespread adoption of agroecology which features a phasing-out of vegetable protein imports (predominantly soya-based products) and a change in diet to one that is less rich in animal products. This opens up prospects for a transition to agroecology that is not bound to maintain current yields, but rather one that creates new fields for environmental management.

2.11 The Role of Animals in Agroecology

Whilst Poux and Aubert's (2018) model represents diets lower in animal products, they highlight the important role of livestock in nutrient cycling (particularly nitrogen management), and the strengthened positive interactions between the different elements of agroecosystems, by (re-)connecting crop and livestock production. This integration of animals within agroecological systems, particularly for nutrient cycling, stands in marked contrast to technology-centred visions of sustainable agriculture that prioritise synthetic inputs, precision machinery, or digital techno-optimisation over ecological processes. Scholars argue that technology-led approaches, including precision agriculture and climate-smart intensification, tend to sustain the logic of external input dependency and overlook the regenerative potential of biological cycles (Vanlauwe et al., 2014; Klerkx and Rose, 2020). By comparison, agroecological systems emphasise the ecological functions of livestock in closing nutrient loops, maintaining soil fertility, and enhancing system resilience, highlighting a fundamentally different pathway to sustainability rooted in ecological rather than technocratic principles (Altieri and Nicholls, 2020; Dumont et al., 2013).

Beyond concepts relating to organic, alternative food networks and sustainable agriculture, we also appear to be at a pivotal point in human history where the role of what we eat, as well as how it is produced, is firmly embedded in daily narratives relating to health and

climate change (van Vliet et al., 2020; Lynch et al., 2020; Kemper and Ballantine, 2020; Rockström et al., 2025). It has been argued that in the debate pertaining to the animal-industrial complex, animals are de-animated, that is they are reduced to units of production and resource, or are materialised as meat and protein (Acari, 2017). Framing animals in this way reflects implicit understandings of meat as food and therefore necessary to human survival, and animals as a natural human resource to be utilised and consumed. Such modern human-animal interactions have been cited as indicative of settler colonialism and white supremacy (Belcourt, 2015), with clear parallels relating to the wider industrial agriculture complex, extractive land use and globalisation of simplified and commodified agri-food systems. The framing of animals within agroecology does not only limit their agri-food system involvement as production units, but as ecological engineers or nutrient cyclers, playing an important role in mixed and integrated farm systems, particularly by re-coupling nitrogen and carbon cycles (Ryschawy et al., 2017). Indeed, the integration of livestock is recognised as a key principle in regenerative agriculture (Newton et al., 2020) and livestock are valued by some for their relationship to landscape and culture (Beudou, 2017). The role of animals, both wild and farmed, is pertinent in agroecological and regenerative agriculture systems, yet is becoming increasingly contentious, including in popular media (Miers, 2022; Monbiot, 2022; Simmonds et al., 2025), particularly in light of Covid 19 and concerns about zoonotic disease and pandemic risk (Altieri and Nicholls, 2020). It is suggested that agroecology offers opportunities for livestock production that prioritise animal and ecological health, for example through silvopasture (tree and livestock integration), 100% pasture fed ruminant diets and adaptive grazing management (Pimbert, 2015; Cole et al., 2021). These practices and systems reduce the need for antibiotics and rely on natural processes to build soil health and plant functioning and thus ensure animal health is protected through diet alone (Altieri and Nicholls, 2020).

The agroecological transition is complex and is driven (and at times, obstructed) by farmers and other food producers, the supply chain, governance and public pressure relating to concerns about climate change, biodiversity loss and public health. Exploration of how this has manifested in the UK is of particular interest to this research, particularly in relation to knowledge systems.

2.12 Agroecology in the UK

This review has outlined the conceptual complexity of sustainable agriculture, the indicators of success and failure associated with agroecological transition, and the ways in which agroecology intersects with related terms such as organic and regenerative agriculture. While much agroecological science originates in the Global South (Rosset and Martínez-Torres, 2012) and in European countries with strong regional food cultures (Gallardo-López et al., 2018), it is necessary to consider how agroecology is being taken up, interpreted, and practised within the specific socio-economic, cultural and political conditions of the United Kingdom. The UK context is distinctive in several respects: a long-standing commitment to productivist policy narratives, a highly centralised governance structure, an increasingly financialised land market, and diverging agricultural policies across devolved nations. These factors mean that agroecology encounters a different set of opportunities and constraints compared to contexts where it has developed historically.

Compared to the rest of the UK, Scotland has generated more empirical research on agroecology. Van Hulst et al. (2020) suggested that Scottish farmers were unfamiliar with agroecology and its associated practices, yet subsequent studies by Lozada and Karley (2021) and Yoxall (2022) demonstrate that many farmers do possess understandings aligned with accepted academic definitions, and that their practices can be meaningfully described as agroecological. Farmers and crofters occupied a range of positions along an agroecological spectrum, from organic and low-input systems through to regenerative and ecologically-focused approaches linked to food sovereignty. For most participants, agroecology was understood in relation to ecological functioning, nutrient cycling, and the dynamics of the agroecosystem within the farm boundary, although a smaller group were also embedded in short food supply chains, direct sales models and community supported forms of agriculture. Such findings indicate that agroecology in the UK is variably conceptualised, with understandings shaped by local conditions, market access, and cultural identity. Notably, this combination of ecological action and food-system engagement has so far been documented primarily in Scotland (Lozada and Karley, 2021; Yoxall, 2022), suggesting regional differences in how agroecology is emerging within the UK. As other authors note, farmers tend to articulate agroecology explicitly as a set of practices (Padel et al., 2019), whereas the

broader social and political dimensions associated with food sovereignty are often less directly expressed (Lozada and Karley, 2021).

The complexity of agroecological farming systems, and the autonomy required to respond to locally specific conditions, is not well reflected in current UK agricultural policy. Instead, farmers often find themselves working around policy constraints rather than being enabled by them, with some opting out of subsidy schemes entirely (Lozada and Karley, 2021). Farmers in Scotland and England have spoken about the administrative burden of agri-environment schemes and the lack of flexibility in prescription-based options (Carey et al., 2003; Ingram et al., 2013), which can conflict with the adaptive, ecological management required in agroecological farming. Responsible governance should support decision-making autonomy and encourage recognition of diverse and complex agroecosystems rather than reinforcing reductive classifications of land as productive or unproductive (Rotz and Fraser, 2015). The main enablers of agroecology identified by UK farmers include the ability to design and manage the farm as an agroecosystem, embed the business within a local agri-food system, participate in communities of practice that support experimentation, and build relationships grounded in shared learning and mutual support (Padel, 2019; Lozada and Karley, 2021; Yoxall, 2022). However, a lack of robust localised agri-food system infrastructure, limited local processing capacity, and long, centralised supply chains present significant barriers, particularly in remote and rural areas with few buyers and limited options for diversification (Wach, 2021). These constraints highlight the need for policy reform that supports complexity, embeds flexibility within scheme design, and enables meaningful collaboration between civil servants and practitioners to foster shared understandings of agroecological and regenerative principles (Cole, 2021; Lozada and Karley, 2021). Facilitated communities of practice, structured peer learning programmes, and opportunities for farm visits and critical observation hold further potential to support farmers in consolidating their own perceptions of agroecology and experimenting with ecological practices on their land (Cusworth et al., 2021; Rust et al., 2021).

Understanding barriers to transition is equally important, particularly the inherent complexity of agroecological systems and the need to navigate both ecological and socio-political constraints (Ong and Liao, 2020). In the UK, these challenges often manifest in practical concerns such as pest pressures, nutrient deficits, knowledge gaps, or risks of yield

decline, as well as social, personal, and financial anxieties (Padel et al., 2019). Farmers often describe a sense of vulnerability associated with deviating from dominant norms or experimenting with unfamiliar practices. A mindset shift is frequently required (Padel et al., 2018; Lozada and Karley, 2021), and transition efforts may stall at any stage if obstacles appear insurmountable, leading some farms to adopt partial changes such as efficiency improvements or input substitution without undertaking holistic system redesign. Many of the barriers observed in the UK reflect global trends, including inadequate extension support, poorly designed funding schemes, inflexible tenancy arrangements, infrastructure limitations and social challenges (Rodriguez et al., 2008; Carolan, 2009; Abson et al., 2017; Anderson et al., 2019; Padel et al., 2019; Ong and Liao, 2020; Maye et al., 2025). The highly concentrated nature of UK supply chains and the dominance of major retailers further amplify these challenges by limiting price-setting power and constraining options for alternative marketing.

Governance constraints have also hindered regionally coordinated agroecological transitions, as governments often avoid complex reforms that may threaten political stability or conflict with long-established agricultural lobbies (Eldridge and Sharpe, 2022). Social movements have helped to accelerate change in other contexts, particularly in the Global South, where re-peasantisation and the mobilisation of organisations such as Via Campesina have enabled rapid farmer-led innovation (Rosset et al., 2012). In the UK, however, structural pressures associated with capitalist agricultural models have diminished the value placed on locally specific knowledge and contributed to an ageing workforce with high levels of mental health concerns, further constraining capacity for change (Figueroa Helland et al., 2018; Ong and Liao, 2020). Recent studies indicate that new entrants are more willing to engage with agroecology (Padel et al., 2019; Lozada and Karley, 2021), suggesting that examining their motivations may benefit training providers and curriculum designers. Whether this engagement arises from political commitments, greater openness to change, or the absence of path dependency remains to be fully understood (Sutherland et al., 2012).

New entrants face significant challenges in the UK, particularly in relation to access to land and capital, alongside competition from non-agricultural actors acquiring farmland for afforestation, carbon offsetting, natural capital investment and amenity ownership (Reeve, 2021). Additional pressures arise from the need to develop social capital and labour support

systems, which may be difficult in their early years (Ong and Liao, 2020). These constraints can increase production costs and are likely to be reflected in price increases borne by consumers. Nevertheless, social and cultural capital can strengthen local farming networks (Sutherland and Calo, 2020) and contribute to resilient localised agri-food systems. The development of ecological and eco-cognitive capital through place-based learning is essential but time-intensive, requiring deep engagement with agroecosystem processes rather than reliance on chemical inputs typical of conventional farming (Anderson et al., 2019; Lozada and Karley, 2021). These demands highlight the need for long-term support structures, mentorship models, and consistent policy frameworks that give new entrants confidence to invest in diverse, ecologically grounded systems.

Beyond technical skills, barriers to transformation are also rooted in farmer cultural identity. While conservation-oriented values are becoming more prominent (Sulemana and Harvey, 2014), UK farming culture remains strongly influenced by productivist ideals rooted in post-war agricultural narratives (Burton and Wilson, 2006). Farmer identity shapes decision making and is influenced by the practices and expectations of neighbouring farms (Cullen et al., 2020; Emery 2015). The notion of the good farmer, embedded through generations, privileges indicators such as tidy fields, weed control and visually healthy livestock (Burton et al., 2008; Burton and Paragahawewa, 2011; Naylor et al., 2018; Riley et al., 2018; Sutherland and Calo, 2020). Agroecological practices that embrace diversity, structural variation or reduced tidiness may conflict with these norms and risk social judgement. Similarly, diversification or part-time farming can contradict established identity narratives, even when such changes offer environmental or financial benefits (Sutherland, 2019; Sutherland and Calo, 2020). Deskilling and simplification associated with globalised commodity markets (Galt, 2013; Ong and Liao, 2020) further reinforce these dynamics and reduce the technical confidence needed for ecological management. Agroecology, by contrast, values politics, culture, social relations and local knowledge (Ong and Liao, 2020), with social elements such as place-based knowledge, community engagement and relational understanding recognised as central to sustainable agri-food systems and to agroecology itself (Francis et al., 2003). This suggests that efforts to support agroecology in the UK must be attuned not only to technical and economic conditions but also to the cultural and relational landscapes through which farmers navigate change.

2.13 Ways of Learning

If rethinking knowledge systems offers an opportunity for enabling agricultural transformation (Abson, 2017) then understanding how farmers and other food producers learn and apply knowledge and skills is key (Lankester, 2013b).

Sustainable agriculture and agroecology are knowledge intensive and require place based, contextualised knowledge (Ingram et al., 2010; Duru et al., 2015; Šūmane et al., 2017; Maye, 2018; Bliss et al., 2019). Historically, the paradigm for the conception, production and distribution of knowledge in formal institutions tends to prevent agroecology from prospering as it is generally centred on de-contextualised and reductionist top-down technical knowledge transfer (Anderson et al., 2019). This operates at odds with literature relating to knowledge exchange (KE) which reflects the need for problem solving and context specific knowledge supported by peers, and often in an on-farm setting (Mendez et al., 2013). As such, the mechanisms used to support farmers learning and testing sustainable farming practices are shifting from traditional top-down dissemination of advice and guidance to more participatory and networked models (Nerbonne and Lentz, 2003; Duru et al., 2015; Šūmane et al., 2017; Bliss et al., 2019; Rust et al., 2021). In the UK there are a range of collaborative mechanisms through which farmers engage with agricultural extension activity, such as monitor farms, farm walks, participatory workshops, demonstration farms, open days and farmer discussion groups (Prager and Thomson, 2014; Dooley, 2020). Although, many farmers still will make use of expert advice whether it is independent, public or from agri-food companies. Much agricultural knowledge exchange remains highly technical, focused on practical farming processes, tasks and methods (Dooley, 2020). This can lead to changes in practice, or encourage uptake of a new strategy or technology, so whilst learning for short term practice changes are important, for transformational learning which in turn can facilitate the transition to sustainable agriculture, support for farmer empowerment and enhanced decision-making capacity are required (Ingram et al., 2018).

For farmers to develop adaptive capacity, that is, the ability to apply their knowledge and skills to a range of contexts with flexibility (Altieri, 2009) they require knowledge to come from a range of sources and be based in networking and collaboration (Šūmane et al., 2017). The literature reflects the necessity for farmers to take a reflexive approach to their practice

by observing, monitoring, and drawing conclusions which may, or may not, lead to a change (Anderson et al., 2010; Kilpatrick & Johns, 2003; Skaalsveen et al., 2020). Whilst it is recognised that the farmer on an individual level needs to be open to exploring alternatives, there is significant research into the role of knowledge exchange and extension activities, beyond the individual, from external actors, stakeholders and peers (Warner, 2006; Warner, 2008; Ingram et al., 2010; Wibbelmann et al. 2013; Emeana et al., 2019; Drexler, 2020). Rather than educating farmers on comparable costs and benefits of sustainable and conventional agriculture and agri-food systems, their incorporation into new social networks may influence farmers to develop alternative ways of “seeing” (Carolan, 2006). This is supported by literature highlighting the role that peer networks and the role of social media influencers have in being more effective in supporting farmer knowledge development than traditional extension activities (Rust et al., 2021). Development of social networks enables the creation of new forms of knowledge and plays a significant role in the creation of dynamic and supportive communities to extend alternative agricultural practices (Warner, 2007; Skaalsveen et al., 2020). Not only do these communities enable knowledge development, they may also give permission for farmers to do things differently (Lozada and Karley, 2021). This is important as voluntary attempts to change the role of the farmer away from being purely production focused have failed not only due to economic or structural factors or a lack of skill but perhaps because of an anticipated loss of identity. Identifying as a ‘good farmer’ (Burton, 2004), particularly one who desires neat and ordered landscapes (Brush et al., 2000; McEachern, 1992) may mean that the landscape changes ensuing from a change in practice are externalised as manifestations of their own failings. However, peer support and evidence of success in similar farms or contexts can offer encouragement to try new ideas and extend practice beyond that which is accepted or conventional (Pagliarino et al., 2020).

Perhaps a defining aspect of farmers engaging in agroecological transition could be considered an openness to change and willingness to experiment, this is reflected by Padel et al., (2019) and Lozada and Karley (2021) and aligns with the FAO (2018) ten elements of Agroecology, particularly relating to co-creation and sharing of knowledge. The notion of community is critical to agroecological farming and could be considered the foundation that enables transformation (Padel et al., 2019). Embracing complexity and relinquishing some

control of production as promoted by conventional agriculture, to enable the agroecosystem to flourish, requires a level of confidence in biological processes to produce the desired outcomes (Cusworth et al., 2021) which is often expressed as being possible through the support of a community of peers (Padel et al., 2019; Kilpatrick and Johns, 2003). Whilst collective formal, or individual informal learning opportunities have a place in developing knowledge based aspects of agroecological practice, engagement with a community of practice where mistakes can be shared and feedback is gathered, is vital to transition (Padel et al., 2021; Krzywoszynska, 2019b). Maximising opportunities for tacit knowledge sharing and time away from the farm to explore new learnings can contribute to development of confidence to experiment on farm (Pannell et al., 2006). The ability not only to take an adaptive approach to one's own practice, but to assimilate the experiences of others and use those to inform decision making is a critical tool.

The individual character and underpinning cultural identities of farmers appears to play a role in a willingness to firstly engage with agroecology or regenerative agriculture, and then to act as an advocate for these approaches with peers (Lozada and Karley, 2021). The creative positivity demonstrated by agroecological farmers contrasts with the portrayal of farmers in the literature relating to high rates of mental health issues and suicide risk and reflects the links that have been made by others between positive mental health and environmentally friendly farming practices (Norton, 2021; Yoxall., 2022). This is further reinforced by the well-established links between engagement with nature/connection with the more-than-human and well-being (Martin et al., 2020; Richardson et al., 2021; Liu et al., 2022).

2.14 Connection with the More-than-Human

Scholars suggest that to promote agroecology, indigenous and regional knowledge must be recognised, and participatory methodologies enacted in support of the assimilation of skills and knowledge to be applied to a specific context (Teixeira et al., 2018).

An aspect of this knowledge is the idea of 'nature-connectedness', as set out as a key leverage point for transformation (Abson et al., 2017), or connection with the 'more-than-human' as central to processes of planetary rural revitalisation (Wang et al., 2025). The spiritual connection between indigenous peoples and the non-human world is central to

cosmologies and ways of thinking that are explicitly non-anthropocentric and radically different from western worldviews of humans as being at least separate from if not superior to the natural world (Pierotti and Wildcat, 2000; Figueroa-Helland 2012; Figueroa-Helland et al., 2018).

Studies of farmer perceptions of the links between social and ecological systems on their farms, particularly in relation to the interactions between ecological systems of the farmed environment and that which could be described as 'nature' (Galaz et al, 2008), particularly in a UK context are limited (Sulemana & James, 2014). However the work of Anna Krzywoszynska has explored the relationship between people (farmers in particular) and soils, and considerations of care and attentiveness in soil management (Krzywoszynska, 2015; 2019a; 2019b; 2020). This work suggests that to enable sustainable transitions in soil management, technical advisors and farmers need to co-produce technical solutions as well as co-producing "shared visions of agrarian futures which put soils at their heart" (Krzywoszynska, 2019a, p160). These shared visions also relate to the concepts of care and attentiveness for the more-than-human, which are reflected in the reciprocity and mutuality of indigenous food ways and land management practices (Wall-Kimmerer, 2000; 2020) and agroecology (Wright, 2021).

Perceptions of agroecology in the UK have been explored predominantly in specific locations (Thompson et al., 2021; Lozada and Karley, 2021; Yoxall, 2022) or in relation to specific groups of farmers or other stakeholders, primarily who have already undertaken a transition towards agroecological farming practices (Padel et al., 2017; van Hulst et al., 2020; Cusworth et al., 2021). There are references in this literature to connection with the more-than-human domain, but explicit exploration of this topic is limited. The intensification of farming and rural abandonment (sometimes labelled as 'rewilding') has contributed to human disconnection from the more-than-human domain in rural areas (Vicente-Vicente et al., 2022). The commodification of food, within a context of an increasingly complex and vulnerable globalised agri-food system represents this disconnection, so not only is there a need to reconnect individuals and communities with nature through leisure activities, for example, a transformation of the agri-food system is urgently required (Vicente-Vicente et al., 2022). Some work has been carried out in Scotland, where Thompson et al. (2021) found that farmers in Scotland are less agroecological than their EU counterparts, meaning they

were less likely to identify with the term, or deploy agroecological practices at a farm level. Van Hulst et al. (2020) identified that farmers in northeast Scotland articulated wider consideration of the agri-food system, including consumer health, markets and sustainable energy, however crucially, they did not identify with natural processes as being a central aspect of their farming practice, in fact, they explicitly distanced themselves from environmental concerns. However, there are examples of farmers, primarily in a Scottish context, who are guided by and engage deeply with their farm ecologies to create low input, circular systems characterised by diversity, resilience and synergistic relationships with the land (Lozada and Karley, 2021; Yoxall, 2022). These farmers, crofters and growers prioritise soil health improvements, biodiversity restoration and reduced inputs, with explicit references to particular species and/or places, often using language indicative of care, empathy and attentiveness (Krzywoszynska, 2019b). There is also strong evidence for farmer intrinsic attachment to biodiversity in relation to its agronomic and environmental benefits (Mills et al., 2018).

Agroecological literature repeatedly reflects the need for a shared vision of prosperity for people and planet which incorporates rather than extrapolates the diverse values of the more-than-human, aligned with the mutually supportive goals of justice and sustainability and its intertwined economic, social and environmental dimensions (Pascual et al., 2022). There is a risk that policy oversimplifies the role and value of the more-than-human, by focusing on economic growth and market valuations of nature, for example through 'natural capital' (Helm, 2019). Such a quantification or valuation cannot account for the intrinsic importance of the more than human to other sustainability factors, leading to a narrow set of market values underpinning the biodiversity crisis (Pascual et al., 2022). In order to reverse biodiversity loss and enable transformation of food, farming and land use, the intrinsic value of the land and its inhabitants, beyond the human, must be recognised (Kurth et al., 2020). When considering the value of the more-than-human, landscape is not just the land that we see and observe at a distance, rather it represents a process through which identity is created but also contested through everyday discourse and practice (Saugeres, 2002). The meanings inferred from landscapes come to define how people conceptualise a place, their behaviours and their expectations of how others behave (Saugeres, 2002), including how that land is farmed.

The language of the more-than-human aligns closely with indigenous articulations of the world, reflecting the need to decolonise the agri-food system (Figueroa-Helland et al., 2018). However, much research has been undertaken under the banner of HNC and has been quantified using the Connectedness to Nature Scale (CNS) (Mayer & Frantz, 2004). This allows for the measurement of the affective relationships with the more-than-human, particularly in relation to patterns of behaviour (Kurth et al., 2020). Connectedness with the more-than-human can be understood by considering the five dimensions of HNC as set out by Balázs et al. (2019):

- material (provision from nature for livelihood and land management)
- experiential social relationships linked to land use and culture; activities in nature/landscape
- emotional bond with landscape and nature; sense of home
- cognitive knowledge in resource management; nature awareness
- philosophical meanings of nature for human life

There is an argument that quantifying the relationship through such parameters continues to detach humans from the more-than-human, that the deeper connectedness, reciprocity and familial relatedness to all that is not human cannot be measured by applying a western worldview (Figueroa-Helland et al., 2018). However, in a UK context, where our disconnect has become so apparent, they nevertheless offer a useful method to assess connectedness using recognisable language (Kurth et al., 2020). Whilst there is evidence of a change in attitudes, for example the development of a green economy, political recognition of the importance of regenerative agriculture, commitments to net zero, etc., these have not had enough impact on changing fundamental practices (Kurth et al., 2020). The development of an ecological self and a deep connectedness between human and more-than-human relations will shape both values and actions and is key to environmentally focused transformation (Kinder, 2001; Kurth et al., 2020). This 'ecological self-perspective' makes changes to emotions, cognition and motivation resulting in increased empathy and connectedness with nature (Bragg, 1996). This reflects two of the leverage points as highlighted by Abson et al. (2017): re-connect and re-think. The third leverage point which encompasses a re-structuring element, requires collective action across levels of social organisation, akin to the daily practices and governance structures of indigenous and First

Nation communities, where individuals and the collective social structures are integrated into the natural world (Narvaez et al., 2019; Kurth et al., 2020). Studies suggest that performing ecological attachment actions improves ecological empathy (Lumber et al., 2017; Kurth et al., 2020), but this has only been tested with farmers in a very small way, and not in a UK context. Shortall (2021) showed that while many UK dairy farmers articulate grass-based systems as being more “natural” and ethically aligned with cattle behaviour, they may simultaneously feel disconnected from nature in highly managed indoor systems, suggesting that the material configuration of farming practices mediates farmers’ own sense of ecological relationship and responsibility. The need for a reconnection of people, in particular farmers and land managers, with the more-than-human requires a paradigm shift that places agricultural systems within nature and ecological boundaries. As such, sustainable consumption served by sustainable production are the starting point for agri-food system and societal transformation (Vicente-Vicente et al., 2022).

It is recognised that in moving toward long-term human and environmental well-being, there are transformational individuals who are confident to step outside of the norm, embrace ecological principles, and inspire collective action (Wheatley, 2023; Amel et al., 2017.) These individuals and the communities of practice they occupy, offer potential for leadership in a fundamental renewal of human connection to the natural world and action to create more sustainable relationships with land and ecosystems (Amel et al., 2017).

2.15 Chapter Summary

Whilst the need for agricultural transformation to sustainable systems is almost universally agreed upon, understanding what sustainable agriculture is from policy and practice perspectives is difficult and messy.

Organic farming, regenerative agriculture and agroecology represent three conceptualisations of sustainable agriculture, with a range of similarities, but also differences between them. In terms of a whole agri-food system approach, agroecology deals not only with food production, but also consumption, governance, social justice and ways of learning, including more-than-human relations. As such, it can be argued that agroecology offers a broad spectrum of opportunity for transition.

Agroecology can be considered as a science, a movement and a practice but recognising its reach beyond the farmgate and field level approaches, as the ecology of the *entire* agri-food system, captures its full complexity. Where changes in governance are considered too complicated, too much of a 'wicked problem' to resolve within the current socio-political landscape, the next level for transformation potential is at the farm scale. This is reflected in and explains why the work of organisations involved in the sector has concentrated at the farm level, including lobbying for change at a policy level. Agroecology calls for the decentralisation of agri-food systems to aid transition; however, this relies on farmers and food producers to drive that aspect of change, whilst also undertaking the business of farming. If change needs to be driven by the agricultural sector, and barriers to transition are known, there is space to explore methods or tools to address those barriers in an agroecological context in the UK. Various transitions pathways offer potential scenarios for transition, but it is important they reflect how deeply intertwined the agri-food system is in ecology, and with people. Whilst there are indicators that extension activities can support transition, one critical and less examined aspect is facilitated peer networks, or more informal social groups. Agroecological research calls not only for decentralised agri-food systems, but decentralised ways of knowing, learning and sharing skills and knowledge.

It is suggested, particularly in scholarship of indigenous land management, that learning can be taken from the more-than-human world, leading to reciprocity and mutuality that offer abundance. However, more-than-human connection and the resulting impacts on decision-making on farms are little studied and there is a significant gap in knowledge regarding how these relations and moreover nature-connectedness studies with the public.

In the next chapter, I will present the conceptual framework for this thesis, drawing upon some of the concepts introduced above.

Chapter 3 – Conceptual Framework

3.1 Introduction

In this chapter I explore the major conceptualisations of transition and develop a conceptual framework for the methodological approach underpinning this PhD thesis. As explored in the previous chapters, there is a need for UK farming to move away from conventional input-dependent commodity output systems to address environmental impacts, food security challenges and enable a more resilient future for individual farm businesses and the wider sector. The literature review identified that agroecology provides one possible pathway for this change, as unlike other sustainable agriculture opportunities it applies a whole agri-food system approach rather than just focusing on the production level.

3.2 The Concept of Agri-Food System Transition

3.2.1 What Is Meant by “Transition”?

In an agri-food system context, transition refers to a long-term process of structural change through which dominant modes of production, distribution, consumption, and governance are reconfigured towards alternative configurations that better address sustainability challenges (Lamine, 2011). In some cases, transition refers to incremental improvement within existing systems (Padel et al., 2017) and in others, transitions involve shifts across multiple dimensions simultaneously, including technologies, practices, knowledge systems, markets, institutions, cultural norms, and power relations (Geels, 2002; Lamine, 2015). In agriculture, this could mean moving beyond isolated changes in farming practices to encompass broader transformations in how food is produced, valued and regulated, often under conditions of uncertainty and contestation (Darnhofer, 2015). Transitions are typically understood as emergent and contested processes, shaped by interactions between niche innovations (such as agroecological practices or organic production systems), dominant regimes (industrialised agri-food systems), and broader socio-political and ecological contexts (Geels & Schot, 2007). Within agri-food systems, a transition therefore captures both material change and potentially deeper shifts in meanings, identities, and goals, including what counts as “good farming,” “productivity,” or “success,” making it particularly

relevant for analysing agroecological change as a process of wider system transformation rather than practice substitution (Lamine 2011; Duru et al., 2015).

Transitions towards more sustainable forms of agriculture have become a priority in light of the accelerating challenges facing contemporary agri-food systems. These challenges encompass environmental pressures, the need for climate resilience, growing public concern for food quality and provenance, and wider socio-economic inequalities that shape farming livelihoods and rural communities (Ingram, 2018; Ward et al., 2025). Meeting these challenges requires a shift away from narrow productivity-based models towards systems grounded in the broader principles of sustainability, resilience and food security (Sgarbi & Nadeu, 2023). Such a shift requires widespread uptake rather than innovation at the margins. If agricultural change is to address the interconnected crises of climate change, biodiversity loss, human health and structural inequality, it must occur at scale, across diverse farm types and landscapes (Smith et al., 2025). Understanding the mechanisms that enable or constrain this kind of change is therefore central to creating conditions for meaningful transformation across local, regional and national levels (Sutherland et al., 2014).

As outlined in Chapter 2, agroecology is widely presented as one such pathway, offering a response to both the environmental degradation and the social injustices embedded in current agri-food systems. There are numerous examples worldwide of agroecological principles being applied to transform landscapes or farming practices, often generating improvements in soil health, biodiversity or community resilience (Kerr et al., 2023). However, the literature also consistently demonstrates that the expansion of agroecological transitions as defined above, remains slow and uneven (Tirado et al. 2021). While pockets of innovation have gained traction, especially in community supported agriculture, pastoral systems and small-scale horticulture, the scaling up and out of these transitions is hampered by a range of entrenched structural barriers (Dalgaard et al., 2003; Padel et al., 2020; Dumont et al., 2021; Thompson et al., 2021). These barriers include economic pressures, the dominance of industrial supply chains, lock in effects from existing technologies and infrastructures, and cultural norms that continue to prioritise yield maximisation and efficiency (Wach, 2021). As such, exploring how transitions are conceptualised, and how these conceptualisations help identify leverage points and obstacles, provides an important

foundation for understanding the prospects and limitations of agroecological change in practice.

3.2.2 Theoretical Perspectives on Transition

The transition literature identifies several theoretical frameworks that have been employed to interpret agri-food system change. Ong and Liao (2020) summarise three broad framings that are particularly relevant. The first is socio-technical transition theory, which includes strategic niche management and multi-level perspective approaches. These highlight the interactions between technological innovation, institutional structures and societal expectations, and are often used to explain how practices such as organic farming or integrated pest management emerge within protected niches before disrupting dominant regimes. The second framing is socio-ecological, focusing on the interactions between ecological processes, resource flows and social dynamics. This perspective draws more directly on resilience thinking and systems ecology, positioning farming systems as complex, adaptive and embedded within wider ecosystems. The third framing places emphasis on social norms, values and networks, exploring how cultural expectations, peer influence and collective identities shape the adoption or rejection of new practices. This is particularly pertinent in agricultural contexts, where informal learning networks, local knowledge and shared identities strongly influence decision making.

Additional insights are provided by the work of David Abson and colleagues, who build upon Donella Meadows' (2009) seminal work on systems thinking. Meadows argued that many sustainability interventions focus on tangible but weak leverage points, meaning that they are easy to implement yet limited in their transformational potential i.e. their capacity to instigate changes that alter the system in a meaningful systemic way. Abson et al. (2017) suggest that truly transformative change requires engaging with deeper leverage points that reshape the underlying structures and paradigms of a system. They identify three domains where such leverage may be applied: reconnecting people with nature, restructuring institutions, and rethinking how knowledge is produced, validated and circulated. These domains are particularly relevant to agroecology, which seeks not only to modify farming practices but to reconfigure relationships between humans, landscapes, knowledge systems and political structures. In doing so, Abson et al.'s framework helps situate agroecological

transitions within a broader conversation about the values, narratives and governance arrangements that underpin contemporary agriculture.

Taken together, these bodies of literature demonstrate that transition is neither linear nor singular. Instead, it is shaped by the interplay of material conditions, economic incentives, cultural norms, ecological feedbacks and policy landscapes. Understanding these dynamics is crucial for assessing the potential of agroecology to contribute to a more just and sustainable agri-food system, and for identifying where interventions may be most effective. The remainder of this chapter explores these conceptualisations in greater depth, considering in turn how they may inform a framework for the current PhD study, which seeks to understand and bring into view, processes underpinning the agroecological transition in the UK.

3.3 The Socio-Technical Framework for Transition

Socio-technical theories have become central to analysing how agri-food systems evolve, remain stable or undergo transformation. They draw attention to the fact that farming systems are not defined solely by technologies or biophysical conditions, but by the dynamic interplay between technological infrastructures, cultural norms, market structures, policy regimes and the everyday practices of farmers (Geels, 2002; Geels & Schot, 2007). Within this framing, agriculture is understood as a complex assemblage in which social and technical elements co-produce one another, shaping what is possible within a given system and constraining the adoption of alternatives (Geels, 2002; Lamine et al., 2012; Darnhofer, 2015). This perspective is particularly significant for understanding the barriers that limit agroecological transitions and the conditions under which systemic transformation might become feasible. At the centre of socio-technical analysis is the concept of the socio-technical regime, this can be understood as a “stable network that frames the evolution of technologies” (Belmin et al., 2018 p1) and brings together the social and the technological elements to form a dominant, mainstream system. The regime encompasses dominant technologies, supply chains, policy instruments, scientific paradigms, cultural expectations and market arrangements that collectively stabilise the mainstream agri-food system (Lorenz et al., 2025). In agriculture, this includes mechanisation approaches, fertiliser and pesticide infrastructures, seed and breeding technologies, processing facilities, advisory services,

financial instruments, land tenure systems and specific forms of expertise that define what is considered legitimate knowledge. The regime not only dictates how farming is carried out but also frames what is understood as efficient, modern or progressive within farming cultures (Belmin et al., 2018). Sociotechnical analysis examines how technical arrangements and social institutions shape one another, revealing why certain practices become entrenched, while others struggle to gain traction (Coakes, 2002). It explores the technological and structural lock-ins that prevent shifts to agroecology, or indeed other non-mainstream approaches (Ong & Liao, 2021), reflecting the physical nature of a system, the mechanisation and processes that facilitate system performance, the supply chain and the temporal and spatial layout of the system alongside the social dimensions such as tasks, the roles of individuals in the system, groupings, and delegation, as well as knowledge development (Pasmore, 1995).

Within this context, conventional agriculture has emerged as the dominant high input, industrialised regime. It is characterised by reliance on chemical fertilisers and pesticides, monocultures, mechanised production, and intensive breeding technologies (Giampieri et al. 2022). This regime has been identified as synonymous with conventional farming and accounts for approximately 98 percent of global food production (Tal, 2018). Yet the concept of conventional agriculture is increasingly critiqued. Sumberg and Giller (2022) suggest that the term oversimplifies the diversity of farming practices and may reinforce binary narratives that obscure the contextual knowledge and adaptive strategies developed by farmers. This critique underscores the need for caution when positioning agroecology as a radical alternative to a supposedly homogeneous mainstream system or regime. Nonetheless, the dominant regime remains structurally powerful, shaping incentives, expectations and the overall direction of agricultural innovation.

Given the scale of environmental challenges facing global agriculture, incremental improvements within the existing regime are increasingly recognised as insufficient to address climate change, biodiversity loss and public health crises requires deeper forms of systemic change that go beyond making industrial systems more efficient or ‘greener’ (Berkhout et al., 2004).

The sociotechnical perspective is represented by three levels within the system: the sociotechnical landscape influenced by global economics and politics as well as deep cultural references, the regime which is comprised of social and technical processes and structures, within which, exist niches of alternative practice (Geels and Schot, 2007; Ingram, 2018). It is these niches and their strategic management that offer the potential for radical transformation within and of the sociotechnical regime (Kemp et al., 1998; Weber et al., 1999; Geels, 2002; Geels, 2004; Smith, 2005). Niches represent protected settings for experimentation (Rip and Kemp, 1998); however, the opportunity for transformative change is limited due to the characteristic stability of the dominant regime (Smith, 2005; Belmin et al. 2018). This poses a challenge for the agroecological transition, as whilst niches offer potential for transformation, enabling that change requires further exploration of actor engagement, supporting transition management, potentially through iterative participatory design and assessment (Duru et al., 2015; Maye, 2018). Niches may be maintained as enriching alternatives to the regime, offering specialist products and methodologies that meet specific consumer demands (Belmin et al. 2018). However, we know there is a need for transformation of the agricultural system, to address ecological decline and climate change, so understanding how to move ecologically sensitive farming practices out of niches and into the mainstream is of research importance.

For practices and ideologies developed in niches to transform the sociotechnical systems they exist within and alongside, transition theory asserts those practices need to become normalised and adopted more widely, beyond the niche (Smith, 2005). However, the relationship between niche and regime transformation is paradoxical as niches are more likely to influence change when they are compatible with the incumbent regime, yet the compatibility limits the potential for these niches to be drastically different or innovative, thus fundamentally undermining the degree of transformation (Smith, 2005; Pant, 2016). Alternative or niche movements and practices are defined by their alterity, and in the current regime are generally not dominated by corporate interests (Sumberg and Giller, 2022). This weakens their potential in enabling transformation in a highly corporate and globalised agri-food system, unless they begin to receive support from corporate interests and offer a return on investment to make that worthwhile - hence the paradox.

Being able to identify whether agroecological niches occupy the space of enriching alternatives (Belmin et al., 2018) or present opportunity for wider transformation akin to the organic niche (Smith, 2005) has implications for understanding how agroecology is perceived both by farmers and other stakeholders. Where niches are occupied by more radical or disruptive innovations, they can struggle to gain purchase with the wider regime due to a lack of funding or support (Ingram, 2018). Those niches promoting agroecological or holistic approaches are less successful in expanding, whilst those promoting technical innovations for agriculture can prosper (Lamine, 2011; Duru et al., 2015; Ingram, 2018). This reflects the suggestion from Figueroa-Helland et al. (2018) that agroecology, as a counter-hegemonic movement, is unable to align effectively enough with the regime to enable widespread transformation and is exhibited not only in terms of agricultural inputs but also market dependency in terms of outputs (Wach 2021). It is not only how agroecology relates to the market, but how the market is unable to serve the needs of agroecological agri-food systems. Akin to radical political shift, change that also enables a level of continuity is desirable to have maximum impact in terms of popular engagement (McGarvey, 2022).

Knowledge is a key resource circulating within niches (Ingram, 2018), yet if knowledge and information systems are controlled by the dominant regime, the dissemination of this knowledge outside the niche can be compromised. This is just one example of the role of power in preventing sustainable transitions, particularly where knowledge is technologically focused and does not consider spatial or cultural contexts (Lawhon and Murphy, 2011; Maye, 2018). This could be a limitation in applying a sociotechnical perspective only to agroecological research, which recognises the inherent politics and power struggles at play in the agri-food system, predominantly in opposition to the current capitalist regime (Ong and Liao, 2020); particularly when the “capitalist system is a vast wall that seems impenetrable and undefeatable” (Giraldo, 2019, p91).

The boundary between the agroecological niche and the incumbent regime is similarly unimpregnable in terms of knowledge exchange (Ingram, 2018) with further exploration of knowledge system permeability between them required to better understand how to facilitate change. It is not just practices that differ between niche and the regime, or even specific aspects of knowledge but ways of knowing and systems of understanding (Smith, 2005; Ingram, 2018). This is further compounded by notions of the “good farmer” being

deeply connected with productivism, characterised by intensive, industrialised agriculture that prioritises productivity, arguably at any cost (Burton, 2004; Burton et al., 2020).

Concepts of governance, both in terms of strategic niche governance (Belmin et al., 2018) and ‘Responsible Governance’, as identified by the FAO (2018), signify the need for overarching structures and systems of working to enable both effective working practices, as well as supporting transition. Experiences in the UK energy sector illustrate how niche innovations, supported by entrepreneurial initiative and policy incentives, can begin to influence regime level change, although coherence is often lacking (Lovell, 2007). Parallels could be made with agriculture, where the promotion of agroecology by individual farmers and harnessed by supportive organisations, such as the Soil Association and Food Farming and Countryside Commission among others is leading to the appearance of agroecology (and other related concepts such as organic farming and regenerative agriculture) in policy. At the time of writing, the All Party Political Group (APPG) on agroecology established in 2022 has now been replaced by Parliamentarians for Agroecology and Nature Friendly Food and Farming (Real Farming Trust, n.d.). Furthermore, with increasing interest in carbon offsetting, for example either through tree planting or increases in soil carbon, there may be future opportunities for market driven changes in the governance of agriculture practices that enable transition, however such systems of carbon trading are in their infancy (Lokuge and Anders, 2022).

Agroecology’s counter-hegemonic orientation requires governance models that emphasise autonomy, local decision making and community self-determination (Altieri, 2009; Altieri and Nicholls, 2020). Agroecology privileges food sovereignty, that is a fair and equitable whole agri-food system, not just more sustainable agricultural practices (Gliessman et al., 2019). Agri-food system governance that centres the collective voice and autonomy of food producers and the communities they exist within and serve is a radical shift that is currently displaced by the innovation imperative (Anderson and Maughan, 2021). That is, *what* is being done is being prioritised over *how* it is enacted and supported. This is challenged by the work of Coolsaet (2016) and Francis et al. (2011) who both reflect the need for decision making autonomy, adaptive learning capacity and opportunity for social learning in enabling agroecological systems to flourish. Furthermore, the work of Abson et al. (2017) directly challenges the innovation imperative, suggesting an exploration of how success or failure is

achieved is more valuable to transformation than the innovation itself. Together, these arguments challenge the innovation imperative and call for governance arrangements that recognise and support the relational and place-based nature of agroecological transition.

In recognising the complexity of agroecology, one could argue that a sociotechnical niche model for radical change of a sociotechnical regime, whilst supported by a significant body of literature, might be considered overly simplistic. It does not necessarily account for the potential for a multidimensional model of regime change that reflects the ambiguous relationships between niches and the regime and potential for top-down change processes as well as bottom-up from within alternative movements (Berkhout et al., 2004).

Multidimensional models of sociotechnical regimes recognise the positionality of the niche within a regime which sits within a landscape and can offer a multi-level perspective (MLP) through which multiple transition pathways can be explored (Geels and Schot, 2007). The MLP conceptualises transition as the outcome of alignment between changes and developments at multiple levels across the regime, landscape and niche, with the process of change relying on niche innovations building momentum and support from outside the niche, external pressures in the landscape that begin the process of change in the regime and destabilisation of the regime allowing niche innovations to flourish (Geels and Schot, 2007). However, whilst this view begins to reflect the complexity of transformation, it still relies on changes at each level which coalesce into a wider context for change and potentially maintains a mainstream market, rather than creating space for disruption of market mechanisms enabling more collaborative or alternative regimes – the niche paradox remains problematic (Smith, 2005).

There is however opportunity in these more expansive approaches that move beyond the sociotechnical niche perspective to draw upon learnings specific to place and the interplay between local and non-local governance structures and the impact they have on successful transition (Späth and Rohrer, 2012). The potential for transition through niche developments, associated incentives, and their interaction with regulatory change at the landscape level is a central concern within socio-technical transition theory. However, such framings do not necessarily account for the deeply personal and complex nature of farm-level system change, nor do they fully explain why farmers enter the ‘transition arena’ (Duru et al., 2015). The multi-level perspective (MLP) examines interactions between the three

socio-technical levels of niche, regime and landscape, however analysis of niche-regime interactions in relation to sustainability can be challenging (Smith, 2005; Pant, 2016; Anderson et al., 2019; Dumont et al., 2020). The operation of the regime is established by coevolution of social and technical elements, where, in a growth driven society with a core agricultural aim of production and a reliance on fossil fuels, the dominant agri-food system could be described as “globalised modern-industrial” (Figuerola-Helland et al., 2018). Such a regime is problematic due to the impact on biodiversity, scarcity of resources and effects on ecosystem functioning (Duru et al., 2015). Assessment of agroecological transition using MLP has been used to identify several critical domains: access to natural ecosystems; knowledge and culture; systems of exchange; networks; discourse; and gender and equity (Anderson et al., 2019). It is recognised that these domains inform the agroecological practices enacted in the agri-food system, but that this is reliant on effective governance. The centring of decision making is further emphasised, aligning with Rotz and Fraser’s (2015) recognition that decision making autonomy is a required attribute of resilient agri-food systems. Developing policy frameworks that enable distributed decision making, and that put control of farming into the hands of growers, farmers and producers is at best challenging and at worst near impossible, especially when the dominant regime is one of production centred capitalism that puts control in the hands of the market (Wach, 2021).

Sustainable agriculture approaches can be explored through a sociotechnical lens, which can offer solutions to move agroecology from a niche to the mainstream, or in some cases, remains protected in a niche to maintain an alterity that locks in an economic premium (Belmin et al. 2018). Agroecology can be framed as an example of a sociotechnical niche, as it operates outside established structures, technical and cultural practices (Ingram, 2018). However, by its nature, it is embedded in ecological principles, therefore considering the movement and its associated practices only within a sociotechnical framing undervalues the importance of the ecological domain so intrinsic to this way of enacting food, fuel and fibre production and supply. Whilst sociotechnical approaches can illuminate the structural barriers limiting agroecological transition, including lock ins, power dynamics and institutional constraints, they cannot fully capture the ecological foundations of agroecology or the deeply relational practices through which farmers observe, learn from and respond to their environments. Therefore, evaluating agroecology solely as a sociotechnical (niche)

innovation risks reducing it to a collection of practices rather than recognising it as an integrated social and ecological paradigm. As such, alternative perspectives are useful in considering the agroecological transition, particularly in understanding ecologically related domains of influence and decision making by farmers and other system actors (Duru et al., 2015).

3.4 Socio-Ecological Perspectives of Transition

The concept of a socioecological system was first coined in literature in the 1970s and later developed into a framework for understanding the interdependencies and relationships between social (mostly human) and natural systems (Ostrom, 2009; Colding and Barthel, 2019). Although definitions vary, they converge on several core themes: interdependence between human and biophysical systems, the existence of shared vulnerabilities and opportunities, and the capacity of these connected systems to adapt, transform or collapse in response to internal and external pressures (Harrington et al., 2010; Thomas et al., 2012). Socioecological systems are characterised not only by interactions across domains, but by the ways in which such interactions produce emergent properties that cannot be understood by examining social or ecological components in isolation (Fidel et al., 2014). This framing has become increasingly significant in discussions of agricultural sustainability (and resilience) because farming is inherently situated within ecological processes, while simultaneously shaped by social norms, economic structures and governance arrangements.

While sociotechnical transition theory offers valuable insights into farmer practice, cultural identity and the institutional structures that stabilise modes of production, it is not sufficient for understanding the full complexity of agroecological transition. Agroecology is conceptualised not merely as a set of alternative techniques but as an ecological paradigm grounded in the relationships between agricultural practices and ecosystem functioning (Wezel et al., 2014; Wezel et al., 2020). This suggests there are greater complexities involved in the relationships within the (eco)system that influence a move into the 'transition arena' (Duru et al., 2015).

Although access to natural ecosystems has been identified as a critical domain for analysing agroecological transitions within the multi-level perspective (MLP), this domain is often conceptualised primarily through systems of control, such as land tenure, management

rights or the ability to modify landscapes (Anderson et al., 2019). This focus reflects a sociotechnical orientation in which ecological components are treated as resources subject to human governance. However, agroecological literature emphasises a different register of ecological engagement. Agroecology requires attention to the interrelationships between species, the functioning of ecological communities, and the forms of reciprocity that emerge through coevolved relationships between humans, soils, plants, animals and wider habitats (Kremen et al., 2012; Figueroa-Helland et al., 2018; Giraldo, 2019). These perspectives foreground ecological agency and relationality, suggesting that agriculture cannot be understood simply as a system governed by human intention but as a socioecological assemblage shaped by more-than-human interactions.

This distinction between land as a resource or expression of capital rather than through more subtle concepts of harmony and balance (Wright, 2021) is one that not only reflects the difference between industrial and ecological forms of farming, but also speaks to the need for deep social change that enables new ways and forms of knowledge (Pimbert, 2018). These ways of knowing connect those on the land with natural cycles, and reflect non-conformist attitudes to land and food, fibre and fuel production. Where indigenous cultures with long histories and narratives of and on the land have, to some extent, a more direct route to these ways of being and knowing, it is likely to be more challenging to connect those brought up in production-centred agricultural paradigms with these subtleties, particularly relating to the more-than-human elements of the ecosystem (Krzywoszynska 2019a; Kieft, 2021). The emergence of subtle agroecology as an expression of the holism of systems opens avenues for research that could inform the transition literature beyond the socioecological to a spiritual domain (Wright, 2019).

Currently within socioecological transition literature, it is the social domain that drives the system which depends on the natural environment and as such, there is still a sense of control and mastery over ecosystems. However, it would be of relevance to explore these models in a three-dimensional manner to understand if and when, in response to accelerating climate change, the natural environment becomes a driver rather than a resource or boundary.

Where more complex models have been developed to identify key drivers of system activity and to more richly characterise the relationships therein, these have primarily focused on

the institutional aspects (Anderies et al., 2004; Folke 2006) rather than the development of relationships or reciprocity. They continue to put the social domain as a primary focus and frame ecological aspects as resources rather than as an equal actor or influencer in the system. Where the ecosystem has been centred in the debate, it still appears to be in the service of the social entity, as a provider of ecosystem services or as a “supporting habitat” (Harrington et al., 2010, p2775), echoing extractive models of colonialism and capitalism (Adams and Mulligan, 2003). Climate change and environmental events, and the impact they have had on social structures are prevalent in socioecological discourse, but primarily in relation to the changes they reflect on the resource base and the ensuing adaptations featuring technological or land use solutions (de Molina, 2010). This suggests an adaptation in response approach, rather than a co-evolution that prioritises both social and ecological aspects.

Where agroecology blends agriculture based in ecological principles and indigenous knowledge systems (Altieri, 2009) there may be conflict between its aims of food sovereignty based in reciprocity and the resource focused, service role ecology appears to be placed in by the socioecological perspective. There is only a small literature base for considering reciprocal feedbacks between the social and ecological dynamics of socioecological models of transition (Figueiredo and Pereira, 2011). There is also limited recognition of the complex reciprocal interactions between the environment and society, reflecting the influences of culture and social behaviour in their interactions with biophysical elements (Kumaraswamy, 2012). Reciprocity in localised, informal agri-food systems through gifting and communal sharing has been explored to some extent, primarily within indigenous cultures of the Global South rather than temperate regions (Kamiyama et al., 2016), but focused on human interactions with each other, rather than reciprocity between the social and ecological domains.

Historically, we have already witnessed one socioecological transition in the Global North from an agrarian system based on solar energy and localised land use decisions to a modern industrial regime reliant on fossil fuels that seeks to homogenise land use for productivity and efficiency gains (Fischer-Kowalski et al., 2012). That transition was driven not only by changes on farm through the development of high yielding wheat varieties in the 1960s, (Evenson and Gollin, 2003), but much broader societal changes after the Second World War,

including the development of a technocratic middle class (Savage, 2008) and a shift towards a more global society. The large-scale transition needed to redefine sustainable farming and where the appropriate governance structures are in place may only be possible in the event of complementary social, economic and cultural change. A new transition towards low carbon energy sources and food sovereignty is recommended, and is considered inevitable by some, due to resource limitations and to avoid catastrophic impacts of converging crises of climate change, biodiversity loss and human health (Fischer-Kowalski et al., 2012; Altieri et al., 2015; Figueroa-Helland et al., 2018; EAT Lancet, 2025). These devastating global events may offer the context for the change to occur, and a framework for conceptualising this transition should create space for the more-than-human.

Socioecological perspectives are focused on farmer to farm(er) interactions, reflecting ecosystem service provision and trade-offs between production and environmental impact (Fidel et al., 2014), offering a framework for the exploration of relationships between the farm, markets, consumers, natural resources and environmental conditions. Viewing agriculture as a socioecological system provides a useful starting point to understand the complexity of challenges and actors in the system (Norton, 2015), particularly when biodiversity and biological approaches to agriculture have been identified as offering a sustainable future pathway (Duru et al., 2015). Furthermore, agroecology as a concept can help to articulate socioecological relations, that are embedded in food sovereignty, indigenous practice and ecologically balanced ways of living (Figueroa-Helland et al., 2018). When 'agri' and 'culture' are understood as the ecological and social aspects of farming being related, entwined and dependent, it is possible to establish a need to create social and cultural capital linked to the adoption of biodiversity-based agricultural practices (Norton, 2015). One example is certification based on product provenance and quality, high animal health and welfare standards or environmental credentials (Burton and Paragahawewa, 2011). However, this relegates agroecology to a niche environment where its proponents are rewarded for its difference, rather than supported to expand out of that position and contribute to the transformation of the rest of the sector, reflecting the challenges encountered through a critique of the socio-technical perspective.

The socioecological transition model conceptualises a panarchy of hierarchies and adaptive cycles that are inherent in ecosystems and socioecological systems offering a pathway to

sustainable development though harnessing adaptive capacity (Holling, 2001). But as with the need for a restructuring of governance to support an agroecological transition, to ensure adaptive capacity is not compromised by the political context, identifying a pathway could be problematic. The socioecological perspective is limited in how it operationalises transformational adaptations, particularly in relation to destabilising the structural status quo and its consideration of the role of science and technology in rurally appropriate ways (Pant, 2016).

There are limitations with both the sociotechnical perspective, primarily because it places agroecology as an alternative to the dominant technical regime, and the socioecological perspective as it positions the ecological in service to or as a resource base for the social. Sociotechnical systems and strategic niche management do offer a framework for understanding transition (Maye, 2018), and socioecological systems offer potential for adaptation in response to biophysical events (de Molina, 2010). Attempts have been made to combine these perspectives in the study of agroecological transitions to reflect the uncertain and dynamic, complex interactions between social, economic and environmental factors (Duru et al., 2015; Martin et al., 2018). Neither model fully recognises the reciprocal and embedded nature of society within ecology and the need for more ‘rooted’ movements (Figuerola-Helland et al., 2018) which may appear to be more fully embracing of the principles of agroecology. The acceptance of a bio-cultural axiom asserts that “biodiversity...will [only] be effectively preserved by preserving diversity of cultures and vice versa” (Toledo, 1999, p1) moves the context of environment away from being a resource, and towards the role of partner. Ideas of reciprocity and the role of humans in nurturing and supporting diverse and abundant ecologies are well represented in literature (Salmon, 2000; Cristancho and Vining, 2004; Whyte et al., 2016), particularly in reference to indigenous communities and nature restoration efforts, but less so in a UK or even broader European agri-food context.

An overarching reading of the socioecological literature reveals that while the framework powerfully captures the interconnectedness of human and biophysical systems, its application to agricultural transitions has tended to reproduce a hierarchy in which ecological processes remain positioned as resources in service to social goals. This reinforces anthropocentric assumptions that sit uncomfortably with agroecological principles grounded

in reciprocity, coevolution and more-than-human agency (Figueroa-Helland et al., 2018). Although socioecological models acknowledge feedbacks between ecological change and social adaptation, they often privilege institutional, economic and governance dynamics while underplaying the relational, cultural and experiential dimensions that shape how farmers engage with ecological systems. As a result, socioecological perspectives offer important insights into system complexity, adaptive capacity and environmental constraints, yet struggle to account for the deeper epistemic, ethical and cultural shifts required for agroecological transformation. A more expansive approach, attentive to reciprocity, indigenous knowledge traditions and the biocultural foundations of sustainability, is therefore necessary to align socioecological thinking with the holistic and relational character of agroecology.

3.5 Transition via Social Norms and Networks

Social norms and network approaches may offer a more suitable lens for analysing agroecological transition because they foreground the relational and cultural dynamics through which farmers make decisions, share knowledge and negotiate change (Anderson et al., 2019). Unlike sociotechnical perspectives, which emphasise structural lock ins and technological regimes, social norms attend more to the symbolic meanings attached to farming practices, the identities that farmers construct and maintain, and the expectations that circulate within farming communities (Burton, 2004; Sutherland and Burton, 2011; Burton et al., 2020). These norms strongly influence what is perceived as legitimate, desirable or risky, and therefore shape farmers' willingness to adopt practices associated with agroecology (Rogers, 2003; Ingram, 2018). Network approaches extend this by recognising that transitions emerge through social learning, trust building and peer to peer exchange rather than solely through policy or market incentives (Leeuwis and Aarts, 2011; Klerkx et al., 2010). Farmer networks, discussion groups and informal communities of practice act as sites where experiential knowledge is shared, ecological observations are compared and new ideas become socially validated (Ingram et al., 2014; Prager and Creaney, 2017; Anderson et al., 2019). Because agroecology involves shifts not only in practice but also in underlying values, worldviews and ways of knowing, the mechanisms of social influence embedded within networks may be more powerful than structural drivers alone

(Duru et al., 2015; Figueroa-Helland et al., 2018). These approaches also capture the role of trusted peers and local champions in legitimising new behaviours and helping farmers overcome perceptions of risk or deviance from mainstream norms (Klerkx and Proctor, 2013). In this way, social norms and networks frameworks reveal how cultural change, social reinforcement and relational trust underpin agroecological transition, offering an account that is more sensitive to the lived, embodied and community embedded nature of farming practice than the more structurally oriented emphases of sociotechnical or socioecological models.

A social norms and networks approach offers a lens through which to explore the agroecological transition, enabling analysis of decision-making behaviour or responses to various pressures at a farm scale, knowledge networks and information flows (Ong and Liao, 2020). The knowledge exchange and agricultural extension field is vast and overlaps with many transition perspectives and paradigms (Nerbonne and Lentz, 2003; Ingram 2018; Ingram et al., 2018; Šūmane et al, 2018; Krzywoszynska, 2019; Rust et al., 2021). Rather than simulation modelling, this field offers comprehensive analysis of learning and knowledge production systems and crosses into the co-design space, with tools and methodologies for enacting transition in the real world (Turnheim et al., 2015). Within this body of work various models of transition exist, such as Hill and Macraes' (1995) Efficiency-Substitution-Redesign (ESR) approach which has been used to analyse agroecological transitions (Wezel et al., 2014; Padel et al., 2020). A seminal model for understanding farmer behaviour change is Rogers' (1983) Adoption-Diffusion model, where innovations spread via particular communication channels over time among members of a social or knowledge system (Rogers, 2010). Furthermore, explorations of path dependency and trigger events, such as generational change, impactful weather events, land purchase or sale and their impact on farmer decision and behaviour change (Sutherland et al., 2012), have also been considered as a way to conceptualise and explore empirically farm-level agroecological transition pathways (see e.g. Padel et al., 2019). Furthermore, knowledge networks and the ways they are organised in relation to social ties have also been investigated (Dowd et al., 2014). These approaches all offer lenses through which farmer and farm business transition to a more sustainable, or agroecological future can be studied, and understanding how farmers learn

and indeed enact learnings is of critical importance in the shift to sustainable agriculture, embracing a new knowledge base (Šūmane et al., 2017).

Social norms and networks frameworks provide powerful tools to explore agroecological transitions by mapping relationships, resource flows, and the influence of collective norms. They reveal how diverse actors, power structures, and social learning processes shape the pathways and success of agroecological change. Despite obvious value in revealing the cultural, relational and behavioural dimensions of agroecological transition, an exclusive focus on social norms and networks has important limitations. These approaches risk overemphasising interpersonal influence and community-level dynamics while underplaying the wider structural, ecological and political economic forces that constrain farmer decision making. Norms and networks can explain how ideas circulate and become legitimised, but they offer less insight into how power imbalances, institutional lock ins and market dependencies shape which practices are viable or valued. Similarly, they do not fully account for the ecological feedbacks and biophysical limits that influence agricultural trajectories, nor do they capture the deeper paradigmatic shifts required to reorient agri-food systems towards sustainability. As a result, while norms and networks approaches illuminate how change spreads within farming communities, they offer a partial view of the multi layered and interdependent processes underpinning agroecological transition. This creates a need to situate social dynamics within a broader systems thinking framework that considers how interventions at different leverage points can disrupt entrenched patterns, reshape underlying assumptions and enable the emergence of more regenerative and equitable agri-food systems.

3.6 Systems Thinking

The growing recognition that agroecological transition requires more than the adoption of new practices has led scholars to turn towards systems thinking to understand the complex, multi layered processes shaping agricultural change (Tiftonell, 2023). Systems thinking offers an alternative to reductionist or linear models by attending to the interconnectedness, feedback loops and emergent behaviours that characterise agri-food systems (Wei et al., 2018). Rather than treating farming challenges as isolated problems with discrete technical solutions, system approaches encourage an examination of the relationships, values,

structures and ecological processes that give rise to current patterns of behaviour (Bawden, 1991). This is particularly relevant for agroecology, which is embedded in ecological, cultural and political contexts that extend beyond farm-level decisions. Within the systems thinking perspective, leverage points become important analytical tools for identifying where interventions can generate meaningful, system-wide transformation (Staton et al., 2024). Building on Donella Meadows' influential work, leverage points highlight places within a system where changes can lead to profound shifts in outcomes, paradigms and behaviours (Abson et al., 2017). For an agroecological transition, this framework provides an opportunity to connect insights from social norms and networks research with a broader understanding of how knowledge systems, governance arrangements and human–nature relationships shape the trajectories of farming systems. This reflects also the complexity of the system as well as the messiness of developing solutions to challenges. As such, systems thinking serves as a conceptual bridge between individual motivations and wider structural conditions, offering a foundation for exploring leverage points capable of catalysing transformative change.

3.6.1 Transition vs Transformation

In sustainability and agri-food systems research, the terms 'transition' and 'transformation' describe different depths and dynamics of change. Transition refers more to gradual, multi-actor processes of systemic reconfiguration within existing socio-technical structures, often conceptualised through the Multi-Level Perspective, where innovations at niche levels interact with established regimes in tandem with and in response to broader landscape pressures (Geels, 2002; Loorbach, 2010). These change processes are typically incremental and path-dependent, involving coordinated shifts in technologies, practices, and institutions. In contrast, transformations involve more fundamental, non-linear reconfigurations of the system itself, including its goals, values, feedback and power relations. They emphasise shifts in the underlying paradigms and logics that guide how society defines and pursues sustainability (Folke et al., 2010; Scoones, Leach, and Newell, 2015). Transformation scholarship, grounded in systems and resilience thinking, highlights deep structural change that may emerge from crises, social mobilisation, or deliberate collective action, with the aim to fundamentally alter the current regime.

While transitions can contribute to transformations, not all transitions are transformative. The distinction lies in whether change adapts existing systems or redefines their underlying purposes and worldview (Westley et al., 2011; HLPE, 2019). Considering transition through the lens of transformation is important because it foregrounds questions of depth, direction(ality) and politics in processes of change that might otherwise appear merely technical or incremental (Staton et al., 2024). A transitions perspective can describe how new practices and technologies diffuse within agri-food regimes (Smith, 2005), but without an explicit orientation to transformation it may overlook whether these shifts actually alter underlying structures of power, distribution, and human–nature relations or simply reproduce them in greener forms (Scoones et al., 2015). Bringing a transformation lens to transition work highlights the need to interrogate whose visions of sustainability are being advanced, which interests are served or marginalised, and whether proposed pathways move systems towards more just and regenerative configurations, as called for in resilience and social-ecological systems scholarship (Folke et al., 2010; Westley et al., 2011). For agri-food systems, this means that empirical analyses of transitions in farming practices, technologies, or supply chains should be situated within a broader normative and structural framing that recognises the potential, and the necessity, for more fundamental redefinition and reconfiguration of system goals and organising logics (Meadows, 2009).

3.6.2 Leverage Points for Transformation

As agroecology is multifaceted and complex in nature, if considering transition as an aspect of transformation, it is useful to consider models of transformation that reflect this.

Reductionist or single discipline research, whilst having significant value, when taken alone is unlikely to facilitate societal change to enable sustainable transformation (Abson et al., 2017; Ives et al., 2018). Rather than seeking simple solutions, applying clumsy solutions to the wicked problems of sustainable food production and land use requires exploration of the underpinning drivers of existing trajectories (Abson et al., 2017). Akin to the work of Alan Savory (see e.g. Savory and Butterfield, 2010), this helps to address the root cause of the problem and in turn works to effect deep, system-level change rather than addressing symptomatic problems. Whilst the concept of leverage points has been applied to agroecological transitions to enact change (Gliessman, 2021; Runhaar, 2021), the literature developed in response to Donella Meadow’s work (1999) is less widely considered but offers

great potential. Meadows identifies three specific leverage points for transformation: nature connectedness, institutional systemic change and knowledge production process. In a highly pertinent application of relevance to this study, these nodes for change are framed as “re-connect, re-structure and re-think” (Abson et al., 2017). As reflected in the science of agroecology literature, institutional change and redesigned governance structures are necessary for a successful transition (Duru et al., 2015; Dekeyser et al., 2018; Anderson and Maughan, 2021; Poux, 2021). However, as the current dominant economic and political regimes promote a capitalist and commodified agri-food system, altering strategic governance in a “top-down” approach requires a significant widespread shift in political power, market models and conceptualisations of value (Wach, 2021; Figueroa-Helland et al., 2018). In the leverage points model, both rethinking ways of knowing and reconnecting with ‘nature’ offer bottom-up opportunities for system change across a range of scales.

Drawing on systems thinking and applying it at the level of individuals and farms helps also to position the farmer within the wider transition process and acknowledges the complexity of decision making within the agroecological system. Systems thinking in this context can be approached in two broad ways, depending on how the idea of a system is understood. The distinction between ontological and epistemological perspectives reflects whether systems are viewed as objectively existing entities or as analytical constructions used to explore particular problems (Abson et al., 2017). Adopting an epistemological view allows systems thinking to function as an interpretive lens through which sustainability challenges can be examined. Under this approach, the boundaries of the system are defined by the researcher and shaped by their concerns, values and assumptions, as well as those held by other actors within the system.

Recognising each farm as a complex and dynamic system also emphasises the value of analysing leverage points for transformation, particularly those associated with and through the idea of re-connection with nature. Meadows (2009) identifies intuition, holism and a willingness to reconsider foundational assumptions as essential to restructuring systems. These concepts resonate strongly with framings of (subtle) agroecology (Wright, 2021) and with the emphasis on reciprocity (Figueroa-Helland et al., 2018). Such perspectives foreground qualities such as goodness, care and attentiveness, which are central to ecological literacy (Smith, 2010). These values-based dimensions, often overlooked in

sociotechnical or policy-led models, help too to illuminate how farmers interpret ecological signals, build relationships with landscapes and develop motivations for change. When situated within a systems-thinking framework, these insights highlight where leverage may exist to support agroecological transformation across interconnected ecological, social and institutional domains.

3.6.3 Developing a Conceptual Framework

As identified in the literature review (Chapter 2), sustainable agriculture, and in this case, agroecology, can be considered a ‘mess’ with pathways to achieving greater sustainability a ‘wicked problem’, for which holistic, systems thinking may offer solutions to develop pathways for not only transition but transformation. Specifically, the transition pathway of leverage points for transformation recommends reconsideration of knowledge production processes, redesign of governance structures and reconnection with nature as critical steps to enact and achieve the changes needed (Abson et al., 2017). These leverage points map across to the key challenges identified in socio-technical, socio-ecological perspectives and social norms and networks approaches (Table 3.1).

Although social norms and network theories show that nature observation and peer relationships can influence engagement with agri-environment schemes, these forms of ecological attention often remain confined to marginal areas of farms (Birge and Herzon, 2019). Motivations for scheme participation are well documented, including stewardship ethics, attachment to place and interest in wildlife (Ingram et al., 2013; Mills et al., 2017), yet such schemes represent only one element of the broader farm system. Developing an analytical framework that considers the whole farm therefore offers the opportunity to integrate these motivations with other dimensions of transition. By incorporating farmers’ relationships with the more-than-human world, the role of knowledge and learning networks, and the influence of governance structures, a systems-thinking perspective can help to address current gaps in understanding how farm-level agroecological transitions take shape and the implications for broader system transformation.

Table 3.1: How a ‘Leverage Points for Transformation’ framework can address challenges presented by transition literature in agri-food (adapted from Abson et al., 2017).

Leverage Point	Key Challenges in Sociotechnical Perspectives	Key Challenges in Socioecological Perspectives	Key Challenges in Social Norms and Network Approaches
Re-think (knowledge production, paradigms, ways of knowing)	Dominance of technological and productivist paradigms limits acceptance of agroecological knowledge. Control of advisory services, input industries and research agendas restricts the diffusion of alternative knowledges. Epistemic lock-ins marginalise experiential, local and ecological knowledge systems (Ingram, 2018).	Ecological processes often framed as resources for human use, not co-constitutive elements of the system. Limited recognition of more-than-human relationships and reciprocity (Kremen et al., 2012; Giraldo, 2019). Socioecological models rarely address deeper cultural or spiritual dimensions of knowing.	Norms are shaped by culturally embedded identities of the “good farmer” grounded in productivity (Burton, 2004). Limited social legitimacy for agroecological knowledge reduces uptake. Peer validation processes may reinforce existing paradigms rather than challenge them.
Re-connect (human–nature relationships, ecological literacy, sense of place)	Sociotechnical models underplay emotional, affective and relational aspects of farmer–nature connection. Ecological motivations are often dismissed as peripheral to economic rationality.	Ecological relationships are often conceptualised as one-directional resource flows. Limited attention to farmer intuition, care, empathy or sensory engagement with landscapes. Socioecological transitions often framed as responses to disturbance rather than co-creative relationships.	Social norms can distance farmers from ecological awareness, especially in strongly productivist cultures. Networks may reinforce disconnection from nature when group identities are tied to yield-maximising models. Opportunities to build ecological literacy depend on the strength and diversity of farmer networks.
Re-structure (governance, institutions, economic systems)	Strong structural and technological lock-ins maintain the high-input regime. Policy and market frameworks reward conventional production, limiting diversification. Corporate control of supply chains creates barriers to niche expansion.	Governance and policy remain anthropocentric, focusing on ecosystem services rather than ecological agency. Institutional arrangements prioritise efficiency, productivity and homogenisation of landscapes. Lack of governance models that centre reciprocity, biocultural diversity and co-evolution.	Social and economic precarity constrains farmers’ freedom to adopt alternative practices. Network and community structures can be shaped by existing power hierarchies. Limited institutional support for peer-to-peer learning environments.

3.7 Farming Ontologies

Understanding agroecological transition requires not only an examination of practices, governance structures and knowledge systems, but also an engagement with the underlying ontologies that shape how farmers understand farming itself. Ontology in this context refers to the assumptions about what exists within agricultural worlds, how relationships between humans and nonhumans are configured, and what kinds of entities, values and processes are perceived to matter (Mol, 1999; Hinchliffe, 2007; Campbell, 2020). While rarely made explicit in policy or technical discourse, these ontological assumptions profoundly influence behaviours, land-use decisions and the possibilities farmers perceive as available to them.

In much of the conventional agricultural research and extension, farming has been approached through a singular, productivist ontology that frames land primarily as a resource base. In this framing animals signify units of production and farmers rational actors responding to market signals, technological innovations and regulatory requirements (Burton, 2004; Lamine, 2011). This ontology reinforces the logics of the sociotechnical regime and stabilises pre-existing configurations of power, value and knowledge. It also privileges forms of expertise that are technical, measurable and externally validated, contributing to the lock-ins described earlier.

However, research attentive to agroecology, farmer experience and nature connectedness demonstrates that farming worlds are not ontologically uniform assemblages. Rather, farmers may enact their farms as ecological communities characterised by reciprocity, co-dependence and more-than-human agency. They may understand their landscapes as kin, heritage, memory or responsibility, or perceive their farming as a relational practice involving intuition, care and attunement to subtle ecological signals (Gibson-Graham, 2011; Krzywoszynska, 2019). Such ontologies cultivate different forms of attentiveness and ethical obligation and can underpin motivations for agroecological transition that are not reducible to economic rationales or classic behavioural logics of innovation diffusion.

These multiple farming ontologies align with systems-thinking approaches that conceptualise farms as complex and dynamic systems shaped by interactions across ecological, social and cultural dimensions. They also resonate with leverage points associated with rethinking and reconnecting (Table 3.1), particularly the shifts in paradigms,

values and worldviews that Meadows (2009) identifies as among the deepest and most powerful drivers of system transformation. Recognising ontological plurality is therefore essential for understanding why some farmers are predisposed towards agroecological practices, why others resist them, and how interventions might support meaningful and inclusive forms of transition.

The transition literature refers to human-nature connectedness (HNC), but there is a significant body of work that challenges this paradigm by referring to that which is not human as ‘more than human’ (Whatmore, 2006). Indeed, the human view that we are separate from nature has been identified as the root of the current ecological crisis (Amel et al., 2017). The objectification of plants and animals conceptualised only as resources without purposes of their own has occurred as a result of industrialised nations relying entirely on the environment for resources, without regard for the wellbeing of nature (Kurth et al., 2020). This reflects the desire by some to articulate an “ecological self”, a self-identity that can be regarded as continuous with nature as opposed to separate from (Kidner, 2001). This embedding of oneself within the wider natural world, within the ecosystem shapes both values and action, and as such is key to environmentally positive action (Kurth et al., 2020).

Attending to farming ontologies also challenges the implicit assumption underpinning many transition frameworks that change arises primarily from technical or institutional innovation. Instead, it directs attention towards the lived, embodied and affective dimensions of farming, including how farmers perceive soil vitality, animal behaviour, atmospheric cues and landscape rhythms. In doing so, ontological analysis foregrounds the role of relationality, care and place-based identity, complementing insights from social norms and networks while extending the conceptual space for understanding the deeper cultural and existential shifts that (may) underpin agroecological transformation.

3.8 Chapter Summary

Taken together, the sociotechnical, socioecological and social networks perspectives, alongside a systemic leverage-points framework, provide a multi-layered lens through which agroecological transition can be situated, understood and analysed.

Each agroecosystem is itself a complex system. A systems-thinking approach offers a way to engage with the wicked problem of agroecological transition at the farm-level by attending to the interdependencies that shape farmer decision-making, ecological processes and institutional contexts. Concepts such as reciprocity, care and connection have been identified not only as expressions of agroecological practice, but also as indicators of meaningful relationships with the more-than-human world. These qualities sit at the heart of leverage points associated with re-connection and deeper paradigm shifts, suggesting that centring this research on farmers' forms of connection and relational engagement aligns with both the nature of system change and the type of transformation required.

The following methodology section outlines the qualitative, reflexive and place-sensitive methods employed in this study, which were chosen to attend to these relational and systemic dimensions of agroecology and associated farming ontologies. By grounding the empirical inquiry in the conceptual foundations developed in this chapter, the methodology aims to generate insights that are both analytically rigorous and attuned to the nuanced realities of farm-level agroecological transition.

Chapter 4 – Methodology

4.1 Introduction

This chapter outlines the research methodology used to explore how farmers' relationships with nature shape farming systems in the UK. I refer back to the aims and research questions as set out in Chapter 1 before moving on to a discussion of the research design to address these. I clarify how the methodology relates to the conceptual framework and research questions and provide a rationale for the specific methodology applied and detail how data was collected and analysed.

4.2 Research Design

4.2.1 General Approach

This PhD investigates how farmers' relationships with nature shape farming systems within the context of agroecological transition. Guided by a systems framing and informed by the concept of leverage points for transformation (Meadows, 2009; Abson et al., 2017), the research is concerned not only with what farmers do, but how they make meaning from their practices and how these meanings support or constrain broader farm system transformations.

Given this research aim and overarching interest, the research has therefore been designed to explore the subjective and relational aspects of agroecological transition, with a focus on the role of nature connectedness, knowledge exchange, and institutional context. It does not assume a linear model of adoption, but seeks instead to understand how values and relationships, including those with the more-than-human world, inform and shape farming transitions.

As Introduced in Chapter 1, this PhD seeks to address the following research questions:

1. How do farmers understand the relationship between nature connectedness, agroecological values, and the transformation of their farming practices?

2. In what ways does nature connectedness shape farmers' motivations, decision-making processes, and pathways of transition within agroecological or regenerative farming systems?
3. How do farmer-to-farmer knowledge exchange practices contribute to transformation, particularly through shared values, relationships with nature, and systems-level learning?
4. What tensions or alignments exist between farmers' nature-connected practices and existing policy or market structures, and how might interventions better support agroecological transformation at the farm scale?

These questions provide the foundation for research design and thematic analysis, enabling a flexible yet focused exploration of the interconnections between values, landscapes, (farm) systems, and processes of change.

Recognising the complexity of farm systems and the interdependence between ecological, social, and institutional dynamics, the research adopts a qualitative approach underpinned by reflexive thematic analysis.

Framed within a systems perspective, the study conceptualises nature connectedness as a potential leverage point for transformation (Abson et al., 2017), alongside ways of knowing and institutional conditions. This framing supports the examination of how farmers and land managers make meaning from their interactions with the more-than-human world (soils, plants, landscape, etc.) and how this influences land management decisions. The methodology has been designed to enable the collection of a rich, context-sensitive dataset, allowing for the exploration of individual experience while also identifying patterns across cases and different farm system contexts.

This research is situated within a constructivist epistemology (i.e., the emphasis is on how farmers and farmer groups construct their knowledge and world views) and an interpretivist ontological stance, recognising that meaning is relational, situated, and co-produced through interactions between researcher, participants, and place (Charmaz, 2006; Holmes, 2020). Qualitative approaches are therefore well-suited, facilitating a methodological framework sensitive to exploring how farmers make sense of their relationships with nature, and how

those meanings inform decision-making within agroecological transitions. There is an established tradition of employing qualitative inquiry to investigate change and farmer subjectivities and farming ontologies in the agri-food sector (e.g., Emery et al., 2017; Mills et al., 2018; Burton & Farstad, 2020; Riley, 2021). This study builds on that body of work by bringing the concept of nature connectedness into dialogue with farming practice. This philosophical stance also reflects the values-oriented nature of agroecology and regenerative approaches, where lived experience, ethics, and ecological relationships are central to knowledge production. Rather than claiming neutrality, the study therefore seeks to work rigorously and reflexively within a values-based paradigm of inquiry (Braun and Clarke, 2022; Hazard et al, 2022).

Unlike positivist research, which seeks objectivity and generalisability, constructivist qualitative inquiry must demonstrate rigour through alternative criteria. Lincoln and Guba's (1985) seminal framework of trustworthiness, credibility, transferability, dependability, and confirmability remains influential and a useful guide, while Malterud (2001) highlights relevance, validity, and reflexivity as central to quality and rigour in research design. In this study, relevance is ensured through alignment with pressing debates on sustainability transformation and the lived realities of farming practice. Validity is addressed through an appropriate study design, including purposive sampling within peer learning networks (see below for details) and the use of walking interviews to capture situated knowledge practices. Reflexivity is embedded throughout the research process, with my own positionality explicitly acknowledged and critically examined.

As in other qualitative traditions, smaller sample sizes (relative to larger quantitative surveys for example) can be appropriate, in that they afford more time with individual participants and thereby allow for relational depth, contextual understanding and iterative engagement with participants. In this study, 52 walking interviews from across five cohorts (farmer groups), supplemented by digital submissions that research participants shared over the study period, generated a rich "thick" description of farming contexts (Ponterotto, 2006). Such detailed accounts allow readers to consider how findings may resonate in other settings, while not claiming statistical generalisability. Relatively small, purposively selected samples have been argued to offer distinct advantages, including opportunities for repeated contact and nuanced interpretation (Crouch & McKenzie, 2006). The intention here is to

develop interpretive insights and propositions regarding the role of nature connectedness in farming transitions and farm system transformation, in line with Malterud's (2001) observation that qualitative studies can generate new knowledge without seeking verification in a positivist sense.

4.2.2 Researching Farming Ontologies

Exploring agroecological transition requires attention not only to practices and knowledge systems, but also to the ontologies through which farmers understand farming itself. In the spirit of constructivism and interpretivism, ontology here refers the assumptions about what exists, what matters, and how humans and nonhumans relate within agricultural systems (Mol, 1999; Hinchliffe, 2007), as viewed and valued by farmers themselves. In conventional agricultural research, farming is often approached through a singular, productivist ontology that frames land as a resource, animals as units of production, and farmers as decision-makers responding to markets and technologies (Burton, 2004; Lamine, 2011). Yet research attentive to agroecology and nature connectedness highlights that farming worlds are multiple; farmers may enact landscapes as ecological communities, farms as more-than-human collectives, and / or land as a site of heritage, spirituality or kinship (Gibson-Graham, 2011; Krzywoszynska, 2019). As such, it is important to ensure that the research design takes such complexity into account.

A focus on farming ontologies therefore recognises that transition is not only a matter of adopting new practices, but of shifting the very terms through which farming is understood and lived (Chia & Kelly, 2016). Methodologically, this requires constructivist-inspired approaches that can elicit and attend to diverse ways of world-making rather than presuming a singular observable reality. Walking interviews are thus employed in this study as appropriate, enabling through the act of walking, participants to articulate ontological commitments in situ, often through reference to place, multispecies relations, and sensory experiences (Carpiano, 2009; Evans & Jones, 2011). For example, when farmers describe hedgerows as "habitat" rather than "field boundaries," or livestock as "members of the team" rather than "outputs," they are signalling ontological framings and connections that shape management choices and possibilities for transformation.

Attending to ontologies in this more interpretative way also aligns with recent work in more-than-human and relational approaches to sustainability, which argue that transformation depends on reconfiguring human–nature relations as much as on technical change (Kirksey & Helmreich, 2010; Wittman et al., 2017). By situating farmer accounts within this ontological lens, this PhD explores how values of care, reciprocity, and interdependence may function as leverage points for system change (Abson et al., 2017). This framing highlights that researching farming ontologies is not simply descriptive; rather, it opens possibilities for recognising and legitimising alternative ways of farming that might otherwise be marginalised within dominant productivist discourses (Campbell, 2020).

4.2.3 Researcher Positionality

As a qualitative researcher working within a constructivist paradigm, my positionality is integral to the research process and its interpretation. My ontological and epistemological assumptions are shaped by my lived experience as a farmer, agroecologist, and knowledge exchange facilitator, and these perspectives have influenced all stages of this study, from research design and participant engagement to data collection, analysis and interpretation (Holmes, 2020).

Following Cassell et al. (2017), I view researcher subjectivity not as a contaminant but as an asset and a source of insight when acknowledged and reflexively managed. In line with the values-orientated nature of this study, positionality is therefore not bracketed out (Tufford and Newman, 2012) but made visible and accountable as part of a rigorous and transparent research process.

I recognise a natural alignment with agroecological principles, which is reflected in both my professional networks and my own farming practice. This introduces a degree of value orientation into the research; however, rather than attempting to bracket this subjectivity, I have adopted a reflexive stance throughout. As thematic analysis acknowledges the active role of the researcher in interpreting data (Braun & Clarke, 2006, 2019), I engaged in ongoing critical reflection via field notes, memos and self-recorded observations to examine how my views, assumptions and values may have influenced the research process.

Importantly, this reflexive process also involved a shift in my own understanding of agroecological transition. Entering the research, I held an implicit framing of agroecology as, to some extent, a set of practices and, to a greater extent, a set of principles associated with environmental improvement and regenerative land management. However, through engagement with participants during walking interviews and extended dialogue via WhatsApp, it became clear that farmers did not primarily articulate their decision-making in these terms. Instead, their accounts foregrounded lived experience, relational engagement with land and ongoing negotiation with ecological and economic conditions.

This prompted a reorientation in my analytical approach, from viewing agroecological transition as a practice-based or values-led shift, towards understanding it as a relational and systems-based process shaped by how farmers connect with, learn from and respond to the more-than-human world. This shift did not occur at a single point, but emerged iteratively throughout the research process, as interpretations were continually refined in dialogue with participants' narratives. As such, the conceptual framing developed in this thesis reflects not only engagement with existing theory, but also a reflexive learning process grounded in empirical encounters.

My embeddedness within farmer networks provided unique access to individuals and communities that might otherwise be difficult to reach. Participants often regarded me not solely as a researcher, but as a peer and practitioner. This dual identity fostered trust and openness in the interview setting, particularly in a research area that touches on deeply held values, socio-cultural identities and personal beliefs. At the same time, this proximity required careful reflexive attention to the ways in which shared assumptions or experiences might shape both what was said and how it was interpreted. The implications of this insider status, both as an enabler and as a potential source of bias, were addressed through deliberate strategies of reflexive analysis, including triangulation of research participant materials (WhatsApp content submission) and iterative memo-writing.

My involvement in peer-to-peer learning groups, facilitation networks, and community-led farming initiatives also influenced the initial formulation of the research questions and, to some extent, the interview structure. However, care was taken to avoid framing participant responses through a narrow agroecological lens. Engagement with wider theoretical perspectives, including transition theory, systems thinking and literature on farming identity,

supported a more open analytical approach. This was further enhanced by ensuring participation from a broader range of farm systems and typologies. This enabled the study to capture a diversity of perspectives across different stages of transition and across farming types and philosophies, rather than privileging a single narrative of change.

These reflexive insights are revisited in Chapter 8, where the implications of this learning process are considered in relation to the conceptual framework and the broader conclusions of the thesis.

4.2.4 Addressing Bias and Ensuring Quality

As with all qualitative research, issues of bias, quality, and validity required careful attention. Reflexive thematic analysis (Braun & Clarke, 2006, 2019) provided the methodological foundation, explicitly recognising the researcher as an active interpreter rather than a neutral observer. My positionality as both farmer and agroecologist meant that I approached participants from a shared cultural and professional background, which supported trust and openness but also risked over-identification. This was addressed through systematic reflexivity: writing memos to interrogate assumptions, revisiting transcripts to test interpretations, and deliberately considering alternative readings of participants' accounts (Finlay, 2002).

Quality in qualitative research is not assessed through replicability or statistical validity but through credibility, dependability, and reflexivity (Lincoln & Guba, 1985). In this study, credibility was supported through triangulation between walking interviews, WhatsApp submissions, and field notes, as well as through participant transcript review. Dependability was enhanced by maintaining an audit trail of coding decisions, memos, and theme development, supported by the use of transcription software. Reflexivity was embedded throughout, ensuring transparency in how interpretations were reached.

In addition, I drew on Malterud's (2001) emphasis on relevance and validity as core criteria for high-quality qualitative research. Relevance was ensured through the direct alignment of the research questions with urgent debates on sustainability and farming futures. Validity was supported by the appropriateness of the sampling strategy and interview design to address those questions. Together, these strategies ensured that the findings are

trustworthy, contextually grounded, and capable of generating insights with resonance beyond the immediate sample.

4.3 Exploring How Farmers' Relationships with Nature Shape Farming Systems Through Walking Interviews

4.3.1 Rationale for the Interview Approach

As already discussed, this study takes a systems-oriented view of farming transitions, where decision-making cannot be understood in isolation from values, relationships, and ecological context. For this reason, the research design needed to capture both the subjective meaning farmers attach to their practices and the embodied, place-based nature of their knowledge.

Walking interviews are a qualitative, mobile research method in which the interviewer and participant walk together through a relevant environment while engaging in semi-structured conversation. The approach emphasises movement, place, and embodied experience as central to knowledge production. Rather than being determined by a fixed question schedule, the conversation is shaped by the surroundings, allowing environmental features and sensory experiences to prompt reflection and storytelling (Riley, 2010; Evans & Jones, 2011; Riley, 2021). In his influential work, Mark Riley highlights walking interviews as a means of co-creating meaning through shared mobility, where researcher and participant respond jointly to the landscape. This process reduces hierarchical power dynamics by walking side-by-side rather than sitting face-to-face and situates the participant as a guide through spaces imbued with personal and professional significance. The method thereby enables access to “emplaced” knowledge, that is, understandings of self, practice, and environment that are produced in and through place (Riley, 2010). Walking interviews also activate sensory and affective dimensions of experience, capturing how people relate bodily and emotionally to their surroundings. As later developed in Riley’s collaborative work on rural identities and farming (Riley, 2021), the method has proven particularly effective for exploring spatially distributed systems, such as agricultural landscapes, where meanings emerge through interaction with terrain, weather, and the material traces or physical evidence of work. While inherently flexible, ranging from researcher-led to participant-led routes, the approach requires careful ethical and practical consideration, especially concerning accessibility and safety. In sum, walking interviews offer a dynamic and place-

sensitive means of eliciting rich, context-embedded narratives about the everyday practices and affective relations that shape farmers' connections with land.

Walking interviews were chosen as the central method because they enable access to tacit, experiential, and situated forms of understanding that may not surface in conventional interview settings (Carpiano, 2009; Evans & Jones, 2011). By walking alongside participants in the landscapes they actively shape the research conversation, unfolding within the multisensory and embodied realities of farming life. This dynamic created conditions for reflection that were grounded in practice rather than abstraction. Farmers, for example, frequently gestured toward particular fields, hedgerows, or animals as they spoke, and these embodied references anchored their narratives in the material and sensory fabric of place, revealing knowledge that is often felt or enacted rather than verbally articulated.

In adopting this approach, I drew on scholarship that understands farming as an ontological practice (a way of being in the world) rather than merely an economic or technical pursuit (Burton, 2004; Burton et al., 2021; see also Krzywoszynska, 2019). Farmers' accounts of their connection with nature, their interpretations of risk, and their conceptions of "good farming" are not abstract statements but lived, relational practices negotiated through daily engagements with land, animals, and weather. The walking interview method offered a means to elicit and witness these processes as they unfolded, positioning nature connectedness as something enacted and experienced rather than simply described.

At the same time, the use of semi-structured interview guides ensured that discussions remained focused on the overarching research questions while leaving ample space for participants to shape the direction and emphasis of the conversation. Semi-structured interviews occupy a middle ground between structured formats, in which questions are fixed and asked in a predetermined order, and unstructured or narrative approaches, where dialogue unfolds with minimal intervention from the researcher (Kvale & Brinkmann, 2015; Longhurst, 2016). This intermediate form offers both comparability and flexibility as it allows the researcher to pursue core themes across interviews while adapting the phrasing, sequencing, and depth of questioning to the context, the environment, and the participant's responses.

In this study, the interview guide (see below and Appendix 1 for details) functioned as a flexible framework rather than a script. It was organised around key themes such as understandings of agroecology, connections with nature, decision-making, and perceptions of change, and supported by concise bullet-point prompts under each heading. These prompts served as common reference points across all interviews, helping to maintain analytic coherence and ensure that core topics were explored with each participant, while also allowing spontaneous reflection and place-based observations to emerge naturally during the walk. This balance of structure and openness was particularly valuable for engaging with complex, value-laden questions about farming practice and identity, supporting both depth of understanding and comparability of insight across cases.

4.3.2 Sampling Approach

This study employed purposive sampling as a non-random strategy where participants are deliberately selected based on specific characteristics relevant to the research questions (Etikan et al., 2015). The criteria were that they had to be actively participating in either a formal (organisation run, possibly facilitated e.g. a farming cluster) or informal (individually managed e.g. group of local farming friends) farmer group. These groups were then recruited to create geographically distributed five cohorts across the UK. Participants were intentionally selected based on their relevance to the research question and their capacity to provide rich, detailed, or critical insights into the phenomenon being studied (Patton, 2015; Teddlie & Yu, 2007). This enabled me to recruit farmers and land managers whose experiences could offer meaningful insight into the relationship between nature connectedness and agroecological transition. Participants were drawn specifically from these farmer groups engaged in peer learning networks, whether formal (e.g. facilitated clusters, membership organisations or established farm clusters) or informal (e.g. regionally connected peer groups or social media-based communities). This emphasis on peer learning reflected the “re-think” leverage point within the overarching theoretical framework (Abson et al., 2017), which positions shifts in values, mindsets, and ways of knowing as critical drivers of systemic transformation. By selecting participants already engaged in knowledge-sharing and collaborative approaches to change, the sample was purposively and intentionally aligned with the aim of exploring how relational and reflective practices intersect with nature connectedness and decision-making.

Participants were identified and recruited through the researcher’s formal affiliations and informal contacts within agroecological and regenerative farming networks across the UK. Facilitators within these networks were asked to help connect the researcher with farmers at different stages of transition, including those who may not yet explicitly identify with an agroecological or regenerative label but were actively navigating land-use change. This approach ensured that the sample included both “early adopters” and those at earlier or more tentative stages of transition (Table 4.1).

Table 4.1: Cohort Composition

<i>Group</i>	<i>Number of farmers</i>	Main Production System	Typical Generation	Land Designation	Group Structure
North Wales	7	Dairy, Beef & Sheep	Mostly 2nd generation	Severely Disadvantaged Area (LFA)	Informal peer group
Pasture for Life	14	Beef & Sheep (Pasture-based)	Mixed (5 first generation)	Varied (UK-wide)	Membership organisation
Herefordshire Meadows	9	Beef & Sheep (Grassland focus)	Mixed	Lowland & some upland	Discussion group & network
North Norfolk	11	Mixed (Arable & Livestock)	Mixed	Lowland & arable catchments	Formal cluster with subgroups
North Yorkshire Moors	11	Mixed (Arable & Livestock)	Mostly multi-generational	High Nature Value, Upland, National Park	Mixed formal & informal networks
TOTAL	52				

In total, five regional pre-existing cohorts were selected, each comprising between five and twelve participants and together totalling 52 farmers. These cohorts were not designed for comparative analysis. Instead, they represented distinct social and ecological contexts through which to understand how place and community influence values and transitions. Table 4.1 summarises the composition of the sample and the five cohorts therein, highlighting diversity across regions, production systems, land designations, and generational backgrounds. Enterprises included beef and sheep farms (with both pasture-based and grassland-focused systems), dairy units, and mixed arable–livestock enterprises.

Generational backgrounds also varied: while some participants were multi-generational farmers embedded in long-standing family traditions, others were first-generation new entrants. Land designations ranged from severely disadvantaged upland areas and high-nature-value protected landscapes to lowland arable catchments. This diversity was intentional, ensuring that the research captured a wide spectrum of experiences, constraints, and opportunities, while maintaining the common thread of engagement in peer-to-peer learning as a leverage point for systems change.

As with all purposive sampling, there is a potential for researcher bias and limitations in generalisability (Etikan et al., 2015). However, such limitations are consistent with the goals of qualitative inquiry and a constructivist epistemology, which prioritises depth of understanding over representativeness. Steps to mitigate bias included seeking diversity across enterprise types and regions and maintaining an active reflexive stance throughout sampling and analysis (Campbell et al., 2020).

Walking interviews were particularly well suited to this sample, as participants were embedded in peer learning networks that emphasised reflection and place-based knowledge. Conducting the interviews within the landscapes they managed provided an opportunity to connect their verbal accounts with embodied practices and ecological contexts, ensuring that the diversity captured through sampling was also expressed in the depth and richness of the interview encounters.

4.3.3 Qualitative Interview Process

In total, 52 farmers participated in walking interviews, organised into five cohorts over a ten-month period.

To prepare, I developed a semi-structured interview guide (see Appendix 1) informed by my theoretical framework and prior understanding of agroecological transitions (Merriam, 2009). Its design drew on informal conversations with farmers and facilitators within my professional networks, which offered early insight into relevant language, sensitivities, and areas of interest (King, 2004). These discussions functioned as a form of pilot work, helping to refine the guide so that it resonated with participants while still generating the depth of data required. Following Merriam's (2009) typology of effective qualitative questions, the guide included hypothetical (for example, "What might change if policy looked different?"),

interpretive (“What does this field or landscape mean to you?”), and ideal-position prompts (“How would you like your farm to look in ten years’ time?”). Questions were framed to encourage reflection on embodied and relational aspects of farming, recognising that walking through the landscape might evoke different forms of knowledge than a conventional seated interview.

Alongside the design of the guide, careful attention was paid to the practicalities of conducting interviews outdoors and on the move. Each interview was scheduled in consultation with participants, with flexibility around timing to accommodate seasonal and daily demands. Participants were invited to choose the walking route, enabling them to select areas of their farm that felt most meaningful or representative of their practice. This decision reinforced the participatory nature of the method, giving participants agency in shaping the encounter and allowing the farm itself to act as a co-participant in the discussion (Evans & Jones, 2011). Lightweight lapel microphones and portable digital recorders were used to ensure clear audio capture despite background noise, and all equipment was tested in advance to reduce the risk of technical failure. Transcription software was also trialled to streamline later analytical stages.

Practical and safety considerations were integral to the research design. Walking interviews can involve uneven terrain, unpredictable weather, and the presence of livestock. Appropriate clothing and footwear were therefore essential, and flexibility was maintained to pause or adjust the route if conditions became unsafe or uncomfortable. Clear arrangements were made for arrival and departure, and lone-working safety protocols were followed (Chiswell & Wheeler, 2016), including notifying a third party of my location and expected return time. Contingencies were also built in to reschedule or move discussions indoors if necessary. Anticipating these factors helped ensure that fieldwork was conducted safely and in conditions conducive to rapport-building and sustained reflection.

Together, these intellectual and practical preparations ensured that the interviews were carefully structured yet adaptable, theoretically grounded yet sensitive to the rhythms of farm life. They created conditions for rich, situated conversations through which farmers could articulate their experiences and values in direct relationship with the landscapes they manage.

Each walking interview was audio-recorded and lasted between one and, in some cases, up to two hours, following a route determined by the participant. The semi-structured guide provided a consistent yet flexible framework, typically opening with the broad prompt, “Can you tell me about your farm and the way you manage it?” This allowed participants to introduce their farm in their own terms before moving into key themes as set out in Appendix 1.

A deliberate feature of the guide was to ask participants to identify a “favourite place on the farm” and describe its significance. This exercise yielded powerful insights into affective and symbolic relationships with land, prompting reflections on memory, heritage, and multispecies interactions. The walking format made the interviews inherently dynamic: participants often gestured toward fields, hedgerows, soil, or livestock behaviour as tangible expressions of their management philosophies. These embodied demonstrations complemented and deepened their verbal accounts, producing a rich, layered understanding of farming practice and meaning that would have been difficult to capture in a static interview setting.

The use of walking interviews created a shared experiential space in which both participant and I as the researcher were immersed in the farm environment. This had important implications for the research process. Observations were often prompted by features encountered in situ, such as soil conditions, livestock behaviour or landscape elements, allowing participants to articulate forms of tacit and embodied knowledge that may not have emerged in a more formal interview setting. At the same time, my own sensory engagement with these environments shaped how I interpreted participants’ accounts. Noticing changes in landscape, biodiversity or management practices alongside participants reinforced the relational and situated nature of the knowledge being shared. This contributed to a growing awareness, reflected in the later analysis, that understanding agroecological transition requires attention to these embodied and place-based ways of knowing.

To complement the interviews, I employed a novel approach where participants were invited to share follow-up reflections through WhatsApp over the course of a year. Submissions were made on a 1:1 basis between me and the participant. In some cases, where we were already members of existing groups, they shared their thoughts in those spaces, but my responses were made in a 1:1 private chat where this was the case. All submissions via

WhatsApp, regardless of whether they were sent to me individually or within a wider group, were treated the same, in that they were downloaded and had the same level of confidentiality applied to them as data gathered at interview.

Ethical considerations specific to the use of WhatsApp data were carefully addressed. All participants provided explicit informed consent for the use of their WhatsApp submissions, including photographs, audio and video materials, with the understanding that anonymised excerpts could be included in the thesis. Where participants chose to share reflections within existing group chats, only the content directly contributed by consenting participants was used as data. Wider group interactions, including responses from non-participants, were not included in the analysis.

In addition, where I was a member of these groups, my dual role as both researcher and participant was made explicit to group members, ensuring transparency in my engagement and allowing individuals to make informed decisions about their interactions. This approach ensured that the privacy and expectations of non-participants were respected, while maintaining the ethical integrity of the research process.

WhatsApp was selected because it is widely used by farmers, accessible on mobile devices, and supports a range of media formats including images, audio, and video. Its informality and immediacy also helped maintain rapport, enabling participants to contribute reflections in real time, often while engaged in daily tasks. These submissions included voice notes, photographs, and short videos, typically shared in response to seasonal events or changing farm conditions. Although supplementary, these contributions added valuable temporal depth to the dataset by capturing evolving perspectives and by allowing farmers to reflect in their own time and on their own terms. The asynchronous and accessible nature of WhatsApp also accommodated a diversity of communication preferences, which was particularly important given the high levels of neurodivergence within the farming community (36%) compared to the general population (15-20%) (RASE, 2025). This flexible format enabled participants to explore their thinking at their own pace, revisit ideas after reflection, and contribute when and how they felt most comfortable. Examples included photographs of emerging flowering plants, short videos of livestock grazing behaviour, and voice notes recorded during lambing or harvest. Such materials often conveyed subtle observations or emotional nuances that might not have been articulated during the initial

interview, revealing how nature connectedness and decision-making developed at different points of the year and over time from the initial interview.

All WhatsApp submissions were downloaded, date-stamped, and assigned a unique identifier linked to the participant's interview transcript. Photographs and videos were stored in encrypted folders, and voice notes were transcribed verbatim. These data were then collated within each participant's case file, alongside their interview transcript and field notes, to enable longitudinal within-case analysis. During the thematic analysis process, WhatsApp materials were read or viewed in tandem with the original interview data to identify points of continuity, contrast, or development in participants' accounts. Insights arising from these follow-up reflections were treated as temporal extensions of the walking interviews, illustrating how meanings and practices evolved across the farming year. This integrated approach ensured that the analysis reflected not only what participants said during a single encounter, but how their relationships with land, animals, and ecological processes shifted over time.

The use of WhatsApp as a method of extended engagement further shaped the research process by allowing conversations to unfold over time, often in response to seasonal changes or emerging challenges on the farm, not only for the participant but for me as researcher. This created opportunities for more reflexive and iterative dialogue, in which both participants and I revisited earlier discussions and reflected on changes in practice or understanding. This temporal dimension highlighted the non-linear nature of agroecological transition and reinforced the importance of viewing change as an ongoing process rather than a fixed outcome. It also influenced the analytical approach taken in this thesis, which foregrounds processes of learning, adaptation and relational change.

Field notes and reflexive memos were written up immediately after each interview, capturing contextual details such as mood, tone, weather, and landscape conditions, as well as my own reflections on the interaction. These documents formed an important part of the analytic record and supported later reflexive engagement.

4.4 Data Analysis Procedure

The interview and WhatsApp data were transcribed and subsequently cleaned to ensure accuracy. Data analysis followed the principles of reflexive thematic analysis as outlined by Braun and Clarke (2006; 2019), which provides a theoretically flexible and rigorous approach to identifying patterns of meaning across qualitative datasets. This method was chosen for its compatibility with the study's constructivist epistemology, which recognises that meaning is co-produced between researcher and participant, and that interpretation is shaped by the researcher's own perspective and positionality. Reflexive thematic analysis was also well aligned with the PhD's conceptual focus on farming ontologies, enabling attention not only to what participants said, but to the underlying assumptions, categories, and relational framings through which they made sense of farming.

Braun and Clarke's (2006) Six Steps of Reflexive Thematic Analysis (Table 4.2) were critical in ensuring a robust analytic process.

The six phases of reflexive thematic analysis (RTA) are best understood not as a linear checklist but as an iterative, interpretive process in which meaning is actively constructed by the researcher. As Braun and Clarke (2019) emphasise, the initial stage of familiarisation involves more than reading, it requires deep engagement with the data and the beginnings of sense-making. Coding within RTA is likewise a flexible and organic process, guided by the researcher's interpretive lens rather than by attempts to ensure reliability or consensus. Themes are not "found" within the data but generated through analytic engagement, reflecting a key distinction between reflexive and more positivist approaches to thematic analysis. This process is inherently recursive, involving continual movement back and forth between data, codes, and developing themes to test coherence and resonance. As analysis progresses, attention shifts from recognising patterns to crafting interpretive stories about what those patterns mean in relation to the research questions and theoretical framework. The final written account, therefore, is not a neutral summary but a creative analytic narrative that weaves empirical insight and interpretation into a coherent, theoretically informed argument.

Table 4.2: Six Steps of Reflexive Thematic Analysis (Braun and Clarke, 2006).

Step	Goal	Action	Output
1. Familiarisation with the Data	Immerse yourself in the dataset and gain a deep understanding of its content and context.	Read and re-read transcripts, noting initial impressions and analytic observations. Listen to recordings and reflect on tone, pauses, and emphasis. Begin informal note-taking and reflexive journaling.	An intimate understanding of the data and initial ideas about possible meanings or patterns.
2. Generating Initial Codes	Systematically identify features of the data that appear meaningful or interesting in relation to the research question.	Work through the entire dataset, highlighting segments and assigning codes (semantic or latent). Codes should capture the essence of the data fragment, not merely describe it. Codes can evolve as your understanding deepens; this is iterative rather than fixed.	A full set of initial codes that represent the analytic diversity of the dataset.
3. Constructing Initial Themes	Examine codes to identify broader, meaningful patterns of shared meaning (themes).	Cluster related codes together. Start to outline potential themes and subthemes. Map relationships between codes and themes using visual tools (e.g., thematic maps, tables).	Draft candidate themes that capture key aspects of the dataset in relation to your analytic aims.
4. Reviewing and Developing Themes	Refine and evaluate the themes to ensure they accurately and coherently represent the dataset.	Revisit coded extracts within each theme to check for internal coherence. Consider how well each theme fits with the overall dataset and with other themes. Collapse, split, or discard themes as necessary.	A smaller number of well-defined, internally consistent, and analytically rich themes.

5. Defining and Naming Themes	Articulate the essence of each theme and how it contributes to the overall narrative.	Write detailed theme descriptions, explaining what is unique and interesting about each. Identify the “story” each theme tells and how it answers the research question. Decide on clear, evocative theme names.	A coherent thematic framework ready for presentation.
6. Producing the Report	Communicate the analysis in a compelling and theoretically informed narrative	Integrate vivid, representative data extracts to illustrate each theme. Situate your interpretation within the broader theoretical and empirical context. Reflect on your own role and influence in the analysis (reflexivity).	A written account that presents a coherent, persuasive argument grounded in data and interpretation.

The analytic process began with repeated readings of the transcripts to become familiar with the breadth and texture of the dataset. Initial coding was conducted inductively, allowing themes to emerge from the data rather than imposing pre-existing categories. This inductive orientation was essential for capturing the diversity of ontological framings in the data such as whether farming was narrated as primarily economic production, ecological stewardship, cultural heritage, or a multispecies collaboration. Coding was carried out manually, supported by preliminary structuring of transcripts using AI software, which together facilitated the organisation and retrieval of excerpts and informed the development of thematic maps and visualisations. Manual coding was chosen to support a deeper and more reflexive engagement with the data. While software such as NVivo can offer efficiency in data management, manual coding encourages a slower, more immersive process that aligns closely with the epistemological underpinnings of reflexive thematic analysis (Braun & Clarke, 2019). It also enabled direct engagement with transcripts and annotations alongside photographs taken during the walking interviews and media content that was shared via WhatsApp after the interviews. Colour-coded notes fostered sustained familiarity with

participants' language, tone, and context, all elements that can become obscured when data are abstracted into digital nodes. Manual coding also allowed for greater flexibility in how ideas were grouped, combined, or revisited, mirroring the iterative and interpretive movement between data and meaning that characterises this approach. Most importantly for me as a researcher, it maintained the tactile and embodied dimensions of analysis, enabling me to remain attuned to nuance, emotion, and ambiguity. In this sense, manual coding complemented the relational and context-sensitive nature of the research, privileging depth and interpretive insight over mechanical consistency. Rigorous following of the six-step process ensured the analysis remained robust.

Coding and theme development attended to both semantic (explicit) and latent (underlying) meaning, with particular focus on values, worldviews, and ontological assumptions embedded in participants' accounts of nature, decision-making, and change. This layered approach allowed the analysis to move beyond surface-level description and towards interpretation of the multiple "ways of worlding" farming that participants enacted (Mol, 1999; Krzywoszynska, 2019). These diverse ontologies were then examined in relation to the study's conceptual framework, which positioned nature connectedness as a deep leverage point for transformation (Abson et al., 2017).

Candidate themes were reviewed iteratively in relation to the dataset to ensure coherence, internal consistency, and distinction between themes. Emerging insights also informed minor adaptations to the interview guide and, in a small number of cases, the recruitment of additional participants to ensure underrepresented perspectives were captured. This led me to seek out an additional farming cohort in the North of England, as well as recruiting additional members of an existing national cohort. Through this iterative cycle, the analysis remained open to the relational and processual character of farming transitions, rather than treating themes as fixed categories.

Throughout the analytic process, reflexivity was embedded using memos, field notes, and self-reflection. These tools made it possible to track interpretive decisions and interrogate the influence of my positionality on coding and theme construction. Reflexivity served not only as a means of recognising subjectivity, but also as a methodological strength that enhanced transparency and interpretive depth (Finlay, 2002; Braun & Clarke, 2019).

Themes were developed not as “findings” in a positivist sense, but as interpretive constructs grounded in participant experience and shaped through iterative, reflective engagement with the data. The resulting thematic structure offers insight into how farmers understand and enact transitions grounded in nature-connected values, and how these meaning systems interact with broader processes of change in land use and agricultural systems. By connecting individual narratives to farming ontologies and the conceptual framework of deep leverage points, the analysis contributes to understanding how re-thinking modes of learning, re-connecting with nature and re-structuring governance may underpin farm system transformation.

4.5 Ethical Considerations

This study was conducted in accordance with ethical principles for qualitative research, with a strong emphasis on informed consent, participant autonomy, confidentiality, and care for participant well-being. Ethical approval was granted by the University of Gloucestershire Research Ethics Committee prior to data collection.

4.5.1 Informed Consent and Autonomy

Participants were provided with a comprehensive information sheet outlining the aims, scope, and voluntary nature of the research (Appendix 2). Written consent was obtained before participation, with additional verbal confirmation prior to each walking interview. Participants were reminded of their right to withdraw at any point without explanation and were given opportunities to review their interview transcripts before analysis.

Given the relational and reflective nature of the research, and its exploration of personal values and decision-making, efforts were made to minimise psychological intrusion.

Interview questions were open-ended and flexible, with care taken to avoid leading or overly sensitive prompts. To minimise psychological intrusion and ensure participant well-being, a values-sensitive and participant-led approach was taken, drawing on ethical guidance for sensitive qualitative research (Dickson-Swift et al., 2007; BSA, 2017). Participants were given control over the pacing and content of the interview and were reminded of their right to pause, redirect, or withdraw at any time. Emotional cues were attended to sensitively during walking interviews, and participants were offered follow-up support options if needed.

4.5.2 Confidentiality and Data Management

All data were handled in accordance with the University of Gloucestershire Data Protection Policy and the UK GDPR framework. Audio recordings were transcribed using professional, confidential transcription software, and all personally identifying information was removed during the transcription and analysis process.

Digital data were stored securely on the University's OneDrive system, with additional password-protected backups maintained. Only I had access to the full dataset. Any potentially identifying contextual details (such as geographic references or farm-specific practices) were anonymised in reporting to protect participant identity.

4.5.3 Ethical Reflexivity

Given my insider status within many of the networks involved, ethical reflexivity was a critical component of the research process. This required continuous attention to power dynamics and the ways in which perceived trust or affiliation might influence participant openness. My position as both a farmer and a peer within these communities provided valuable access and rapport but also carried the risk of over-identification or interpretive bias. Care was taken to ensure that participation did not expose individuals to reputational or relational risk, particularly when discussing sensitive issues such as policy critique or departures from mainstream agricultural practice. The relational quality of the walking interviews may also have shaped what participants felt comfortable sharing. These dynamics were actively managed through detailed field notes, reflective voice memos, and iterative reflexive engagement throughout the research process, and they remain an important interpretive consideration in the analysis.

Participants were also invited to contribute supplementary reflections via WhatsApp in their own time. These submissions were entirely voluntary and framed as a flexible, participant-led way to share further insights without pressure. Consent for inclusion of this material in the analysis was reaffirmed as needed.

This ethical framework supported a mutually respectful, transparent, and accountable research relationship, in keeping with the values of the communities involved and the philosophical orientation of the study.

4.6 Methodological Limitations and Considerations

As with all qualitative research, this study has several methodological limitations that should be acknowledged. These do not diminish the rigour or relevance of the findings but reflect the nature of interpretive, context-dependent inquiry into complex human–nature relationships.

4.6.1 Sampling and Self Selection

The use of purposive sampling within existing peer learning networks allowed access to participants with rich, experience-based insights into agroecological and regenerative transitions. However, this also introduced the potential for self-selection bias, as farmers more engaged in reflection, values-based practice, or agroecological thinking may have been more inclined to participate. While efforts were made to include a range of perspectives, such as including farmers at different stages of transition, the sample cannot be considered representative of the wider UK farming population.

4.6.2 Seasonal and Temporal Variability

The data were collected over a 12-month period, during which farming conditions, ecological observations, and policy contexts changed. The WhatsApp submissions captured some of this temporal variation, but participants' reflections may have been influenced by seasonal workload, weather, or particular events unfolding on their farm. While this adds richness to the dataset, it also introduces variability that limits direct comparability across interviews.

4.6.3 Interpretive Subjectivity

The use of reflexive thematic analysis recognises that the researcher is not a neutral instrument but an interpretive partner in the construction of meaning. While transparency and reflexivity were prioritised throughout, the themes developed in this study reflect one interpretive reading of the data, shaped by my own experiences, values, and theoretical orientation. No claim is made to exhaustive or definitive categorisation.

By openly acknowledging these limitations, the study maintains integrity and coherence within a qualitative, constructivist framework. The research aims not for generalisability, but

for transferable insight into the values, relationships, and decision-making processes shaping agroecological and regenerative transitions.

4.7 Chapter Summary

This chapter has set out the methodological framework that underpins this PhD. It has established the constructivist epistemology and interpretivist ontology that guided the research and explained how these align with a systems perspective on agroecological transition. The chapter has demonstrated why qualitative methods, particularly walking interviews supplemented by digital reflections, were selected to capture farmers' lived experiences and ontological framings in situ. It has also shown how purposive sampling through peer-learning networks enabled engagement with a diverse yet coherent group of farmers, reflecting the study's theoretical interest in values, reflection, and systems change.

The discussion of my own positionality and reflexivity has highlighted the ways in which insider status both enriched and complicated the research process, and the strategies taken to ensure rigour, transparency, and accountability. The description of data analysis procedures has illustrated how reflexive thematic analysis enabled both inductive theme development and interpretive engagement with deeper ontological assumptions.

Importantly, the methodology has been shown to be consistent with the conceptual framework, which positions nature connectedness as a deep leverage point for sustainability transformation.

By combining embodied methods and reflexive interpretation, this study has sought to generate insights that are not only descriptive but also conceptually generative, illuminating how farmers' narratives of nature, farming, and change reveal opportunities and tensions for transformation. The limitations of the approach have been acknowledged, including the potential for self-selection, interpretive subjectivity, and temporal variation, but these are consistent with qualitative inquiry and have been addressed through deliberate strategies of reflexivity and trustworthiness.

The methodology outlined here provides the foundation for the presentation of results. In the following chapters, findings are organised around the leverage points of re-think, re-connect, and re-structure, illustrating how farmers' values, ontologies, and relationships

with nature interact with wider institutional and market contexts. This framing moves the analysis beyond surface-level accounts of practice, showing how deeper shifts in meaning and worldview may underpin pathways toward agroecological transformation.

Chapter 5 – Results: Situating Agroecological Practice

5.1 Introduction

In this chapter I present the first portion of the results and share the analysis of the walking interviews undertaken with farmers from the five case study cohorts in relation to their situated practice. This research has examined perceptions of agroecology and how farmers' relationships with nature have shaped farming systems and individual farm businesses, through a lens of leverage points for sustainability transformation (Abson et al 2017). This lens has explicitly focused on exploring the concepts of re-thinking the way we learn, re-connecting with nature and re-structuring governance in relation to farm system transformation. This addresses in turn the central aim of the PhD, which is to understand how livestock, arable and mixed farmers understand agroecology, its associated values and practices and how that relates to agroecological transition, particularly through conceptual framing of connection with nature. This has then been used to explore the motivations, barriers, and incentives for farmers to engage with agroecological practices and nature connectivity, and to understand the role of face-to-face and virtual forms of knowledge exchange between farmers in relation to social learning, connection with nature and the effect of this connection in relation to the agroecological transition and decision making.

The chapter explores who the farmers were, their perceptions of agroecology and how this connects to concepts linking landscape and meaning. Chapter 6 goes on to frame an analysis of the interviews through three specific lenses: rethinking learning, reconnecting with nature and restructuring governance.

5.2 The Farmers

These results reflect the findings of 52 interviews with farmers from five cohorts across the UK. The farmers and land managers represent mixed, arable, beef and sheep and dairy farms. They are predominantly male and operate at a range of scales. All of them engage with peer-to-peer learning networks, both formal and informal, which was a pre-requisite for participant selection.

The participant cohorts consisted of five distinct groups of farmer participants, four of which were geographically located and one (Pasture for Life members) was represented nationally by farmers based across Great Britain.

Table 5.1: Farmer Cohort Characteristics

Group	Number of farmers	Main Production System	Typical Generation	Land Designation	Group Structure	Approach to Agroecology
North Wales	7	Dairy, Beef & Sheep	Mostly 2nd generation	Severely Disadvantaged Area (LFA)	Informal peer group – not facilitated	Pragmatic, cautious adopters
Pasture for Life	14	Beef & Sheep (Pasture-based)	Mixed (5 first generation)	Varied (UK-wide)	Membership organisation, some local facilitation, access to events and knowledge exchange activities.	Strong alignment, value-led
Herefordshire Meadows	9	Beef & Sheep (Grassland focus)	Mixed	Lowland & some upland	Facilitated discussion group & network.	Ecologically motivated, peer-supported
North Norfolk	11	Mixed (Arable & Livestock)	Mixed	Lowland & arable catchments	Funded formal cluster with interest related subgroups	Diverse ambition, cluster-supported
North Yorkshire Moors	11	Mixed (Arable & Livestock)	Mostly multi-generational	High Nature Value, Upland, National Park	Formal, funded and facilitated cluster.	Ethics-driven, reflective, place-based

Some of the peer-to-peer learning networks the farmers engaged with prioritise nature friendly approaches on farm (such as a county specific meadow management group and Pasture for Life members), and as such, reflect nature positive farming mindsets. However, other groups were not explicitly nature focused, which enabled a wider range of farmers to participate, who hold a range of views in relation to land management. Whilst there was a broad spread in how ‘nature focused’ participants were, the participation pre-requisite of peer-to-peer learning engagement demonstrated motivation to extend their learning

beyond conventional knowledge transfer mechanisms. This means participants could be characterised as forward looking, willing to engage with new ideas and have an interest in new approaches and methods. An overview of the farmer cohorts can be seen in Table 5.1, with the largest group representing those who were nationally distributed

5.2.1 North Wales

This cohort consisted of seven male farmers, all in their thirties, who had formed an informal knowledge-sharing group over a number of years. Initial connections were made at university and later deepened through shared farming interests and regional ties. Four of the seven farms were predominantly dairy enterprises, while the remaining three focused on beef and sheep. Two of the dairy farmers also finished a small number of beef cattle for direct sale to consumers, with one supplying meat to a local restaurant they co-owned. All farms were located in Wales's Less Favoured Area (LFA), where land is classified as severely disadvantaged due to factors such as soil type, relief, aspect, or climate (Welsh Government, 2019). All farms reflected the landscape of upland fringe (Ffridd) as featured in Figure 5.1, the area between the enclosed more intensively managed lower fields and the unenclosed hill and moorland. This diverse habitat not only has biodiversity relevance but is culturally significant because it sits at the intersection of land use, language and identity in upland Wales. It is not just a physical zone on the hillside, but a cultural landscape shaped through centuries of human–environment interaction.

The group were active within the farming community and on social media, where they typically highlighted production achievements, particularly the efficient utilisation of grass and forage, and the financial advantages derived from this. Mutual support within the group extended beyond knowledge exchange to include



Figure 5.1 The distinct "fridd" on NW3's farm

business-to-business arrangements such as livestock trading, labour sharing, and informal supply chain partnerships. Most participants described themselves as 'conventional'

farmers, although one (NW1) identified as ‘nature friendly’ and “moving towards regenerative”, but added that he wasn’t “there yet.” Nonetheless, the humour and tone of the conversations suggested a collective awareness that their practices diverged from many conventional norms, even if they were reluctant to label themselves otherwise. These themes are explored in greater detail later in this and the second results chapter. As a group, these farmers were progressive in mindset but rooted in local heritage, particularly through Welsh language use and community engagement. All but one were second-generation farmers; the sole new entrant had strong ties to farming through extended family.

5.2.2 Pasture for Life

Pasture for Life (PFL) is a UK-wide membership organisation advocating for pasture-fed and pasture-based ruminant livestock systems. Members pay an annual fee and benefit from a suite of support services including webinars, farm walks, supplier discounts, and an online forum. The community includes farmers as well as butchers, retailers, researchers, and consumers, all aligned with the belief that grass-fed livestock systems can deliver high animal welfare, improved environmental outcomes, and nutrient-dense food.

The PFL philosophy centres on “optimum production” rather than “maximum production”, that is, producing in harmony with ecological limits and the unique characteristics of each farm, such as utilising silvopastoral approaches as featured in Figure 5.2. While PFL offers a certification standard for 100% pasture-fed livestock and products, not all members pursue certification. In this study, five of the fourteen PFL farmers interviewed were certified. Four



Figure 5.2 PFL4's cattle in the woods

participants were female, ten male, and five of the fourteen were first-generation farmers (Table 5.1). Collectively, this cohort demonstrated strong alignment with agroecological principles, with a particular emphasis on low-input systems, biodiversity enhancement, and public goods delivery.

5.2.3 Herefordshire Meadows

The Herefordshire Meadows cohort emerged through a locally coordinated network focused on meadow restoration. The network also includes members from neighbouring counties (Monmouthshire, Gloucestershire, and Worcestershire) and provides support for seed saving, equipment sharing, and farmer-led experimentation. Most cohort members managed beef and sheep enterprises, typically on lowland farms, although two worked in upland systems close to the Black Mountains.

The farmers involved were united by a shared commitment to nature restoration and peer-led knowledge exchange. All were part of a dedicated grassland discussion group facilitated by the Herefordshire Meadows team, which provided a forum for collective learning and confidence-building. Farms in this cohort were solely grass based, with landscapes reflective of Figure 5.3. The farmers could generally be characterised as progressive and outward-facing, with several receiving national attention for their regenerative approaches. Two participants were recent Nuffield Scholars.



Figure 5.3 HM2 walking their working dogs across the farm

5.2.4 North Norfolk



Figure 5.4 NN1 describing an arable crop rotation

The North Norfolk cohort consisted of eleven farmers, all members of a DEFRA-funded farmer cluster operating across a large catchment area. The cluster was coordinated by a grazier who also farms in the region and had helped establish smaller subgroups around specific themes such as composting, seed saving, and biodiversity monitoring. The group included arable, mixed, and livestock farmers operating at a variety of scales and levels of experience, including both long-established family farms and newer entrants. Some of the members were also engaging in novel supply chain

arrangements and certifications schemes, that required specific crop rotations (Figure 5.4) and farming practices.

This cohort was particularly notable for its strong emphasis on horizontal knowledge exchange. Participants frequently described learning through peer observation and practical experimentation, rather than through formal advisory channels. Several described transitioning from high-input systems toward more regenerative or nature-based practices, including cover cropping, herbal leys, and integrated rotations. The diversity of ambition within the group meant that some members had adopted small but significant changes, while others were pursuing full-system redesigns. Despite this diversity, all expressed appreciation for the cluster's flexibility and the value of collective learning. The group was seen by participants as a source of moral and technical support, as well as a safe space for testing new ideas and challenging orthodoxies.

5.2.5 North York Moors

The North York Moors cohort comprised eleven farmers based across the National Park and surrounding uplands, brought together through a combination of formal networks (including stewardship schemes and farmer clusters) and informal knowledge-sharing initiatives. The cohort included a mix of arable and livestock systems, with many participants managing land within designated conservation or high-nature-value areas, or managing rare species rich grassland habitats, as seen in Figure 5.5. Most farms were long-standing family operations, though at varying stages of generational transition.



Figure 5.5 NYM10 walking into their species rich grass meadow

This group demonstrated a high degree of ecological literacy and emotional connection to landscape, with several participants explicitly referencing their sense of custodianship and personal attachment to place. Farming decisions were often shaped by a strong ethic of care, not only for soil and biodiversity, but for family well-being, intergenerational equity, and cultural heritage. Nature connection was described in sensory and seasonal terms, such as noticing the return of birdsong in spring or walking fields to monitor wildflowers. Participants were candid about the complexity of balancing production with ecological goals, and several described making management decisions that prioritised habitat conservation over economic gain. The cohort expressed a strong interest in systems thinking, particularly to reconcile financial viability with environmental and emotional sustainability. They were also reflective about language, with several expressing discomfort with terms like ‘regenerative’ or ‘agroecology’, not because they rejected the concepts, but because they preferred to communicate their work through practice and real-world examples rather than labels.

5.3 Perceptions of Agroecology

Across the diverse range of interviews, participants were asked to reflect on what the term *agroecology* meant to them. Their responses provided a rich and nuanced picture of how the concept is understood, interpreted, and enacted in practice. What emerges is less a consensus around the term itself, and more a shared orientation toward farming as an ecological, ethical, and community-embedded practice. While familiarity with the term agroecology varied, most participants described farming philosophies and systems that were strongly aligned with its principles, particularly when compared to their understandings of regenerative agriculture, a term that was more widely used but also more contested.

Several participants admitted to having limited or uncertain familiarity with the term agroecology. PFL1 (male, upland beef farmer in the north of England), for instance, noted that they hadn't previously given it much thought, but interpreted it as

“a mixture of farming but also looking after the ecological side as well, and nature, sort of working in both together”.

This intuitive understanding of farming with, not against, nature was echoed across many responses. NYM1 (male, upland organic beef and sheep farmer), for example, stated that agroecology was about

“farming in as natural a way as you can and allowing the farming operation and nature to complement one another, rather than being in a constant battle”.

Here, the emphasis was not on labels or technical definitions, but on achieving balance, fostering co-existence, and moving away from extractive logics.

Some, like HM3 (male, lowland beef and sheep), offered a more functional explanation, describing agroecology as

“farming within a natural ecosystem... using the functions of that ecosystem to produce the best food with the least impact on the environment”.

HM1 (male, lowland beef and sheep) similarly framed agroecology as a process of aligning human systems with natural ones:

“not fighting with our practices, but getting on board with how nature is, to help us with our farming”.

In both cases, the relationship between the farmer and the land was described not in terms of control or efficiency, but cooperation and humility.

Others, particularly those with activist or academic experience, described agroecology as a systemic and holistic alternative to industrial agriculture. PFL7 (female, upland beef farmer in Scotland) defined agroecology as

“farming within ecosystems... not just the farming practice, but the broader agri-food system and supply chain,”

and highlighted its roots in movements resisting the Green Revolution. This broader framing was not shared by all, but where it did appear, it helped articulate agroecology as a values-based framework, and one that included food sovereignty, cultural knowledge, and social justice alongside environmental sustainability.

The term regenerative agriculture was more familiar to most participants, although not always more meaningful. Some used the term as shorthand for a cluster of practices, including rotational grazing, cover cropping, reduced tillage, and increased biodiversity. PFL3 (male, lowland sheep farmer in Wales), for instance, said that regenerative “helped pull all that together for me,” providing a name for practices they were already experimenting with. Similarly, NYM10 (male, mixed farmer) saw agroecology as “a step on from regen,” suggesting that while regenerative agriculture focused on soil and input reduction, agroecology extended to include community, product, and system-wide thinking. He suggested that while his business was engaging deeply with regenerative agronomy, the work needed to extend beyond soil to include “community and what you do with the product”. In this framing, regenerative agriculture was a useful but incomplete tool, a phase or entry point into broader, agroecological system-level transformation.

However, several participants expressed concern about the vagueness of regenerative agriculture and its increasing use as a marketing term. NYM7 (male, upland beef and sheep farmer) was especially forthright:

“I don’t really like regenerative agriculture. Everybody’s jumped on the bandwagon and thinks they’ve been regenerative when they probably aren’t”.

Others, like NYM8 (male, upland sheep farmer), called it

“just a bit of a word that people like to make it sound better than it is,”

adding that upland farmers have long done many of the things now being packaged as regenerative, such as low-input systems and integrated grazing, out of necessity, not to align with a trend.

Despite these misgivings, the principles underpinning both agroecology and regenerative agriculture were widely endorsed in practice. Participants described deliberate decisions to reduce fertiliser and pesticide inputs, redesign grazing systems, integrate livestock with cropping, restore hedgerows, and plant wood pasture, often without subsidies or recognition. NN2 (female, lowland beef grazier) described agroecology as

“farming in a way that is good for the soil, the water and the air,”

and emphasised the importance of diverse rotations, composting, and wildflower margins to build system health. Similarly, NN8 (male, lowland mixed farmer) framed agroecology as

“farming more in tune with nature,”

contrasting it with the former reliance on chemical solutions and standardised inputs.

What tied these interpretations together was an emphasis on systems thinking and ecological responsiveness. Participants described agroecology as a way of seeing, a different frame through which to observe their land, animals, and role as farmers and land stewards, as well as their role in their communities. NYM6 (male, upland sheep farmer) summed this up by describing agroecology as “farming in a connected world”, a phrase that captures both ecological interdependence and the social dynamics of knowledge exchange.

The relational dimension of agroecology was particularly salient. Many participants linked their understanding of the concept to social learning and collaborative experimentation.

NYM10 (male, mixed farmer), who facilitates farmer learning networks, noted how agroecology isn’t something farmers adopt in isolation: “You’re just setting seeds really”, offering ideas, support, and community that enable change. PFL4 (lowland mixed farmer)

echoed this, saying that while “agroecology might switch people off,” what matters is “how we share what we’re learning” and “whether people feel included in it”.

These reflections point to an important distinction: for most participants, agroecology is not a brand, nor a certification scheme, nor a fixed doctrine. It is a process. It is often messy, always contextual, and deeply relational. As PFL5 (female, lowland beef and sheep farmer in Scotland) explained,

“we’re still developing the language... if it helps people express this incredible change we’re in, then it’s doing its job”.

Ultimately, what these conversations reveal is that agroecology, as practiced and imagined by participants, is less about technical fixes and more about reorienting relationships. These relationships are between people and land, producers and eaters, and knowledge systems. It signifies a form of learning and doing that values complexity, embraces uncertainty, and holds space for creativity, care, and critique. It is present in the rough edges of hedge lines, the decision not to plough, the joy at hearing voles squeak in the grass whilst walking through a field of tall grass, and the patience required to wait for chicory to emerge after a failed sowing. Whether or not participants used the word to describe themselves or even recognised it as a way to explain a type of farming, the agroecological ethos was tangible: as a set of commitments, as an unfolding inquiry, and as a hope in an uncertain and volatile future.

Among all the frameworks and terminologies encountered in the interviews and subsequent transcripts, regenerative agriculture was the most commonly referenced by participants. It was the label most frequently used to describe contemporary approaches to ecological farming, whilst being one of the most contested. While many participants identified with regenerative agriculture in principle or practice, they also questioned its definitional clarity, its uptake by actors with divergent intentions, and its capacity to retain meaning as it gains popularity. For some, it was an empowering and accessible way to describe transition. For others, it risked becoming a vague buzzword, susceptible to dilution, misappropriation, and even misuse.

Regenerative agriculture was most often used as a shorthand for farming practices focused on soil health, biodiversity, and reduced inputs. Participants associated it with rotational or

mob grazing, herbal leys, cover crops, minimal cultivation, and integrating livestock into arable systems. Many described themselves as either regenerative or “on the journey” towards it, despite often hesitating to adopt the term formally.

Others expressed ambivalence about using the label for themselves. NYM8 (male, upland sheep farmer said plainly,

“regenerative is just a bit of a word that people like to make it sound better than it is. I don’t think it’s anything we aren’t already doing anyway”.

For this participant, the term was seen as disconnected from the realities of upland farming, where low-input, rotational systems were already standard due to land constraints rather than ideological commitment. Similarly, PFL10 (male, upland mixed farmer, Scotland), while actively implementing regenerative techniques, reflected on the limitations of the language:

“I have a whole load of issues about that particular word, but a lot of people have got a good sense of what it means”.

This cautious embrace was echoed by PFL5 (female, lowland beef and sheep farmer in Scotland) , who suggested that many terms, including regenerative, agroecology, and natural capital, were still “developing” in their use. This sense of linguistic flux and the willingness to use imperfect words for the sake of communication underscores the role of regenerative agriculture not just as an approach to farming practice, but as a narrative framing device: i.e., a way to signal intention, invite conversation, and/or claim legitimacy.

Despite its widespread uptake, some participants were deeply sceptical about the co-option of regenerative agriculture by corporate actors, consultants, or farmers who adopt the language without changing (in a meaningful sense) their methods. NN6 (female, lowland arable farmer), reflecting on conversations in local networks, noted for example,

“You do hear people saying they’re doing regen, but when you ask what they’ve changed, it’s hard to tell. It’s become a bit of a badge, hasn’t it?”

This concern was echoed by NYM7 (male, upland beef and sheep farmer), who commented, “Everybody’s jumped on the bandwagon and thinks they’re being regenerative when they probably aren’t”. These views reflect a broader unease with the “brand-ification” of

regenerative agriculture, the risk that its appeal as a marketable identity outpaces its substance as a set of ecological and ethical commitments.

Some participants expressed discomfort not with the concept itself, but with the pressure to claim it. NYM1 (male, upland organic beef and sheep farmer), for instance, said he wouldn't describe himself as regenerative, even though he was implementing rotational grazing, reducing fertiliser inputs, and planting trees. He reflected,

“I'd say I was conventional, really. Try to get as much as you can out of everything. But even the last few years, I think differently somehow”.

This tension highlights how identity and language are not always aligned and how farmers may be acting regeneratively without identifying as such, whilst others claim to be regenerative but are not able to demonstrate how they align with regenerative principles.

A number of participants described how their relationship to regenerative agriculture evolved over time. Initially drawn in by its practical promise of healthier soils, lower costs, more resilient pastures, they gradually began to recognise its limitations or feel uneasy about its growing ubiquity. NYM10 (male, mixed farmer) shared how his understanding shifted through real-world experimentation:

“We just totally lost the crop. We had zero crop on that rented land. It was like, this was the wrong thing on this land”.

The lesson was not to abandon regenerative principles, but to adopt them adaptively, informed by context, constraints, and ongoing observation.

“You can't just do a bit,” he said. “You've got to do all of it, or at least be in to a certain level.”

The idea of regenerative as a system, not a set of tools emerged in several interviews. Participants warned against superficial adoption, applying techniques without attending to the broader shifts in mindset and land ethic they require. NYM10 again summarised this:

“You can't direct drill and then keep spraying insecticide and expect it to work. We weren't doing everything that goes with it.”

Regenerative agriculture, in this telling, is a commitment to coherence, not just ecological consistency, but ethical and epistemic alignment. It demands not only new methods, but new ways of knowing, valuing, and relating.

Participants also noted that regenerative agriculture is often promoted in arable contexts and questioned its applicability in upland or low-productivity systems. NYM8 (male, upland sheep farmer) remarked that

“it seems to be more pushed to arable... you don’t really get much said about upland farming, do you?”

Others agreed that many of the touted regenerative benefits, such as rapid improvements in soil structure or measurable increases in carbon, were less visible or slower to emerge in pasture based grazing environments. Yet this did not deter them from pursuing the work. As one participant put it,

“we’re just not going to see results in a year or two. This is a generational shift.”

What becomes clear across the dataset is that regenerative agriculture functions as a bridge: a term that opens up space for transition, experimentation, and redefinition. It connects farmers across sectors and geographies, offering a shared language for goals that might otherwise remain implicit. But it also functions as a boundary object, susceptible to divergent interpretations and instrumental use.

For some, this flexibility is a strength, a sign that the movement is open and evolving. For others, it is a liability, risking dilution, greenwashing, and the loss of trust. What all participants shared, however, was a desire for authenticity; for the term to remain anchored in real practice, reflective observation, and transparent learning.

In this sense, regenerative agriculture, like agroecology, is not merely a technical choice. It is a cultural and communicative act, a way of declaring intent, inviting dialogue, and forging new collective identities. It is a story farmers are telling about themselves, their landscapes, and their futures. And like all (good) stories, it remains open to revision, critique and deeper understanding.

Taken together, participants’ reflections on agroecology and regenerative agriculture illustrate a sector in motion, not only shifting its techniques and practices, such as inclusion

of more diverse seed mixes as seen in Figure 5.6, but actively renegotiating the language, values, and narratives through which farming is understood and justified. These terms, while unevenly adopted, serve as gateways into deeper reflection, about how farmers relate to land, how they position themselves in society, and what responsibilities they hold for the future. Whether embraced, questioned, or redefined, agroecology and regenerative agriculture reveal a collective grappling with change, not just what to do differently, but how to think differently. It is from this fertile tension between doing and thinking, between identity and action, that a more profound transformation begins to emerge. What follows, then, is not simply a record of new techniques or market adaptations, but evidence of a deeper, more structural shift in how farmers are reimagining their roles, responsibilities, and relationships, that is, a rethinking of agriculture itself.

Taken together, the interviews in this chapter offer a textured and grounded insight into how farmers across diverse settings are negotiating agroecology, whether or not they use that term. The diversity of interpretations and practices shared by participants reveals not only a plurality of farming systems but also a dynamic reworking of values, identities, and aspirations. While labels such as agroecology and regenerative agriculture surfaced frequently, they were often approached with caution, ambivalence or indifference. For many farmers, these terms were secondary to the real work of navigating land, climate, business pressures and social expectations. A key insight from the data is that too much emphasis on terminology risks obscuring what really matters: the lived process of change.

In this sense, the findings suggest that transition is less about whether a farm can be categorised as agroecological or regenerative, and more about shifts in mindset and business model. Change often begins not with adopting a specific set of practices, but with rethinking the farm's purpose, its relationship with nature, and its connection to place and community. It is a transition marked by experimentation, adaptation and an evolving sense of what it means to farm well: ecologically, ethically, and economically.

These accounts also prompted reflection on my own personal assumptions about what constitutes agroecological practice, particularly the expectation that farmers would articulate change in explicitly environmental terms. Instead, their narratives revealed a more implicit and relational understanding, which shaped the analytical direction taken in this research.

To capture this more nuanced and generative understanding of transition, the following chapter adopts a process-oriented framework, structured around the interlinked themes of Rethink, Reconnect, and Restructure (Table 3.1). Adapted from Abson et al.'s (2017) leverage points for sustainability transformation, this framing helps illuminate how cognitive shifts, emotional and ecological attachments, and systemic constraints interact within farmers' stories. 'Rethink', which constitutes the start of Chapter 6, focuses on changing logics and learning practices. 'Reconnect' first explores sensory, affective, and ethical ties to the more-than-human world; and 'Restructure' then interrogates the material and institutional conditions that shape what is possible. Rather than offering a model of best practice, collectively this analysis and the underlying framework invites attention to farming as a relational and iterative process, one in which meaning, method, and identity are continually negotiated. The sense of identity and deep connection to place, was something that became very clear when participants were asked to describe their favourite place on the farm. As the final question in each interview, it brought together the themes and ideas many had discussed more broadly relating to relationships with land, the impact of changing farm practice and how that related to ideas of self and legacy.



Figure 5.6 HM1's farm looking across a multi species sward reseed

5.4 Favourite Places on the Farm: Landscape, Memory, and Meaning

As explained in the previous section, every participant was asked to identify their favourite place on the farm. Their responses opened a rich window into their emotional and sensory relationships with the land. These reflections, while diverse in setting, were consistently

rooted in embodied experience, memory and ecological awareness. The spaces described were rarely chosen for their productivity or economic significance; instead, they were emotionally resonant locations where farmers felt most connected, to the land, to their families, and often to themselves.

One striking pattern was the prominence of elevated vantage points, places that offered a wide view across the landscape and, symbolically, across the breadth of the farmer's work. NW3 (male, upland beef and sheep farmer, with pedigree horses) described a fondness for both the highest point on the farm and a front paddock used for foaling, valuing the peace of early mornings and the sense of new life they offered:

“There's something magic about new life... and the peace at four or five in the morning when the world hasn't woken up yet.”

Similarly, NN8 (male, lowland mixed farmer) spoke of a field with views over the sea and another from which he could look back across the farm:

“You get a great sense of pride... thinking, I've done all that”.

These places served not only as points of visual appreciation but also of self-recognition, a vantage for reflection on their work and contribution to the land, an ability to zoom out from the micro focus of every day work oriented tasks, to a broader macro view reflecting strategic business and landscape development.

Others focused on emotionally significant or ecologically rich spaces. PFL2 (male, upland beef farmer in the north of England) described two favourite areas: one a quiet beck fringed with ancient oaks, and another high point overlooking the farm and Solway Firth. Both locations combined visual serenity with ecological richness and a palpable sense of belonging. Similarly, NN5 (male, lowland arable farm manager) described a specific field that simply “felt right”, a place chosen not for its measurable features, but for an ineffable sense of comfort and affinity:

“Every time I went into that field, I would smile... just feel better”.

Some locations carried intergenerational meaning. NN4 (male, lowland mixed estate owner) described walking the estate with pride, naming three favourite places: a family garden, an

ancient oak, and a hilltop with sweeping views. These sites were suffused with memory and legacy, spaces shaped by previous generations and imbued with a sense of responsibility:

“My father and mother made a huge go of this when they arrived. It’s a legacy I’m very keen to carry on”.

Interestingly, a few participants named less bucolic spaces. NYM9 (female, upland sheep farmer) selected the lambing shed, describing it as a site of profound emotional intensity and renewal:

“There’s something magic about new life... when things go right, it’s amazing”.

This response reminds us that connection is not confined to green vistas or wildlife-rich corners, it also resides in spaces of care, struggle and intimacy with animal life.

Finally, several farmers emphasised the importance of social and sensory experience. NW4 (male, upland dairy farm manager) identified a lakeside area used both for family recreation and quiet contemplation, linking it to both environmental richness and social joy. HM1 (male, lowland beef and sheep farm manager) chose a rocky outcrop affectionately called “Pride Rock,” not just for its view, but for its embeddedness in a wider, nature-rich patchwork of landscape, neighbouring conservation areas, and local identity:

“You’ve got the English-Welsh border there, the Offa’s Dyke here... it’s a pretty sweet spot”.

HM2 (male, upland beef, sheep and pig farmer) described a place at the intersection of landscape, farming, and public view:

“When the cows are up here in the summer... it’s like a little Parkland for us, all the meadow pipits and skylarks and the sunset is pretty cool... That’s where everything converges. Because it’s like a leisure interest, but I care about it personally... they come in off the hill and they’re looking straight onto the farm.”

Here, personal use, biodiversity, and a subtle sense of public accountability coexist within a favourite place.

For HM3 (male, lowland beef and sheep) there was a strong connection to a place near running water, partly hidden from view by trees and it was partly this which had given him so much enthusiasm for more tree planting and protection across the farm (Figure 5.7).



Figure 5.7 HM3 using a 'cactus guard' to protect a naturally regenerated oak sapling

Together, these accounts show that farmers' favourite places are not random or purely aesthetic; they are richly layered spaces where ecology, memory, identity, and emotion converge. They reveal a form of land literacy that is felt as much as understood, a knowledge built through years of presence, repetition, and attentiveness. These sites offer sanctuary and perspective, rooting farmers in their work and reinforcing the moral, emotional, and ecological dimensions of stewardship. The reflections form anchor points and contextuality for the substantive thematic analysis that follows, starting with 'Rethink'.

5.5 Chapter Summary

Where the research examined how participants understood the language and concept of agroecology, interpretations were diverse, shaped by cultural, generational, and sectoral differences. For some, agroecology was recognised as a guiding framework aligned with existing values and practices; for others, it was seen as inaccessible or politicised. Many

preferred or were more familiar with the language of regenerative agriculture, which was perceived as more flexible or pragmatic. However, beneath these terminological differences were shared concerns about land health, food sovereignty, and ecological responsibility, suggesting convergence in values even where definitions diverged.

Participants' reflections on their favourite places on the farm revealed the depth of their emotional and sensory connections to land. These spaces were rarely selected for productivity or economic value, but rather for their capacity to offer peace, perspective, or continuity. Some chose wild or elevated places for their beauty and stillness; others spoke of spaces linked to animal care, family memory, or nature richness. These reflections provide a powerful counterpoint to dominant narratives of agriculture as purely technical or economic. They suggest that for many farmers, the land is not only a workplace but also a place of identity and emotional significance.

Chapter 6 Results: Re-thinking, Re-connecting, and Re-structuring: Dimensions of Agroecological Transition

6.1 Rethink

Amid shifting practices, evolving networks, and contested language, one of the most significant findings of this research is the extent to which participants are not simply adopting new methods, but fundamentally rethinking what it means to farm. This aligns directly with the 'rethink' lever for transformation described by Abson et al. (2017), which highlights the power of deep, systemic change through the reconfiguration of knowledge, values, and goals. Participants in this study are not only questioning inherited assumptions and conventional wisdom, they are actively reshaping the cognitive and cultural foundations of agriculture. This rethinking manifests in their social practices (see

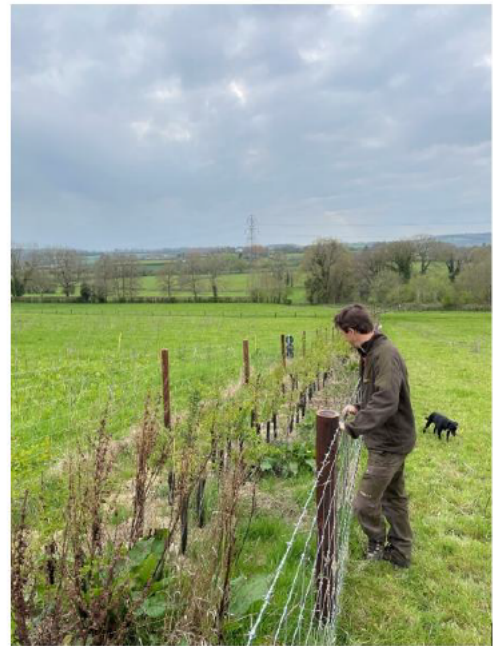


Figure 6.1 HM4 inspecting wool mulched hedge planting

Figure 6.1), how they learn, where they look for guidance and how they define success. It is also present in changing ideas about what they expect from their farms, not just as businesses, but as ecosystems, community assets, and sources of identity. What follows is an exploration of this deeper transformation, a shift not only in what farmers do, but in how they think, and situate themselves within wider environmental and social systems, explicitly through a lens of rethinking the way they learn and engage with knowledge and skills.

6.1.1 Scepticism Toward Expert Advice

A strong and pervasive theme throughout the interviews was a profound scepticism toward traditional models of expert advice, formal education and conventional knowledge transfer systems. This scepticism is not simply oppositional; rather, it reflects a deep rethinking of how knowledge should be produced, validated and disseminated to enable meaningful agroecological transformation. It aligns strongly with Abson et al.'s (2017) notion of

rethinking learning as a key leverage point for system change, a shift away from top-down, standardised models towards more democratic, experiential and contextually grounded knowledge systems.

Across the sample, participants viewed formal education routes, such as colleges and universities, as outdated, irrelevant, and, in some cases, complicit in maintaining unsustainable paradigms of farming. PFL7 (female, upland beef farmer in Scotland), reflecting on their experience of returning to college as a mature student, captures this sentiment starkly:

"I went to college as a mature student a few years ago, but I didn't learn anything that useful, mostly it was stuff I could've just looked up online. They don't teach you how to make good choices, good decisions. They just talk about sheds, inputs, prescriptions of what to do when."

Going on to say:

"Agroecology... just doesn't really get taught anywhere. Ecosystem or ecological health might be taught on an ecology degree, but not related to farmland. It's as if farming is thought about as being completely separate from the land it happens on, like it's not even relevant"

Similarly, NN5 (male, lowland arable farm manager), a self-described convert to regenerative agriculture, articulates a frustration with the inability of formal institutions to address emerging realities:

"University and college give you the basics, I did all that years ago, but if you want to do anything regen they haven't got a clue. They are still stuck in the 1980s"

These views suggest that formal educational systems have failed to adapt to the demands of the agroecological transition, remaining wedded to the post-war productivist ethos that prioritises high yields, intensive inputs and economic maximisation at the expense of ecological resilience. The widely held view of participants, is that conventional education is structurally unfit to support the transformation needed in the food and farming sector, with the agroecological transition being actively avoided by formalised education.

This distrust extends beyond educational institutions to encompass broader structures of agricultural knowledge and consultancy. Participants repeatedly expressed concerns that what they called “traditional” advisors, from college lecturers to commercial consultants, are influenced by agrochemical companies and supply chain actors, whose interests in maintaining input-intensive models undermine the credibility of their advice. HM4 (male, lowland beef and sheep) makes this point bluntly:

"All the colleges round here are paid by fert and chemical companies, I can't trust any advice, wouldn't. They just want to sell you solutions out of a bag."

Such perceptions indicate that scepticism toward expert advice is not based on a rejection of knowledge per se, but on a critical appraisal of the political economy of knowledge production. Participants see themselves as embedded in a system where advice is not neutral but shaped by vested interests, thus requiring careful interrogation and selective engagement.

This sentiment is echoed by NN4 (male, lowland mixed estate owner), who critiques consultancy practices that prioritise selling inputs over understanding farm-specific needs:

"Some consultants come in with agendas that seem more about selling inputs than understanding what the land actually needs. They aren't interested in what I want out of the farm, just what they can sell to me."

In addition, PFL5 (female, lowland beef and sheep farmer in Scotland) explained

"At the time, it [organic farming] was seen as a bit eccentric... even advisors were saying you will definitely suffer a reduction in yield. But actually, what they were predicting just didn't happen. We maintained output, and actually made more money."

This suggests not only are consultants distrusted for their commercial interests but also for their adherence to a flawed dominant paradigm that does not reflect farmers' lived realities. The predictions, informed by technical expertise and academic research, were not realised in practice. Such an outcome calls into question that expertise and research, and leads participants to develop their own knowledge bank, informed by their experiences not just their exposure to formalised knowledge transfer interactions.

Rather than viewing themselves as passive recipients of external expertise, many farmers now position themselves as critical agents who must filter, adapt, and challenge incoming knowledge claims. This repositioning reflects what Abson et al. (2017) term a deep leverage point: i.e., a transformation in the cultural and cognitive systems that govern information flows within farming communities.

The critique of conventional knowledge systems also extends to the perceived rigidity of government schemes and subsidy frameworks. NN5 (male, lowland arable farm manager) notes:

"Schemes are designed with no understanding of what it means to farm on this kind of land. You end up fitting into their boxes, not solving your problems. You have to stick to dates they set, farm it how they think it needs to be farmed...you can't make changes because of the weather or because you want to try something a bit different. It puts lots of limits on us, how creative we can be."

As such, the schemes prevent explorations of creative problem solving or socially engaged learning opportunities because by their nature their prescriptions lead to the same management outcomes. This is where experiential approaches, or 'learning by doing' are confined to learning by doing what the scheme prescribes, rather than doing what might lead to better outcomes.

Participants described these top-down schemes as ill-suited to the complexity and diversity of real-world farm contexts, leading to frustration, disengagement, and in some cases, active resistance. NW3 (male, upland beef and sheep) captures the long-term consequences of this rigidity:

"Conventional advice often focuses on yield at all costs, but that's left us with exhausted soils and fewer options for the future. I don't feel like this farm has any more to give."

The prioritisation of maximising outputs without considering ecological or social impacts is seen as a fundamental flaw in conventional advisory systems. This critique is not just technical but deeply ethical, challenging the assumptions about what constitutes "success" in farming. It would appear to many participants, that success is measured by those engaged

in more conventional agricultural knowledge systems as relating solely to output rather than ensuring a more holistic view.

Moreover, participants emphasised that conventional advice tends to be overly generic, failing to account for local specificity and complexity. NN3 (male, lowland mixed farmer) points out:

"The business of farming is moving, but conventional systems don't give us the tools for tailored guidance. So we try and make things better on the farm, but the advice we get is for old ways of doing things, they aren't keeping up. We are ahead of the consultants, the advisers"

This failure to offer nuanced, adaptive support was a recurrent frustration in the interviews. HM2 (male, upland beef, sheep and pig farmer) reflects on their movement away from consultant-driven approaches:

"We've moved away from the methods pushed by consultants in the past. They didn't understand how the farm was being worn down. They kept saying put this on, put that on. But the farm couldn't take it, I'm not sure I could take it either."

Retrospective analysis of past practices, such as recognising the ecological degradation and social alienation they caused, has fuelled a powerful sense of self-reliance and critical distance among participants. They can see where the path chosen for them by green revolution inspired, production oriented, conventional knowledge systems has taken them, and they are seeking options for an alternative.

Doubts also extend to the metrics and evaluation frameworks underpinning many knowledge transfer systems. NW2 (male, upland dairy farm) expresses frustration that standardised benchmarks often fail to capture the realities of diverse, evolving farming systems:

"The metrics don't capture what we're actually doing on the ground. They're designed for someone else's farm. We do a lot of data, crunching numbers. I know my numbers are working, but others just won't believe what we have been able to do, it doesn't fit their sums."

PFL3 (male, lowland sheep farmer in Wales) shared similar concerns:

"I went and did the Farming Connect grass measuring courses, and mostly ignored them. I don't want my fields to look like that, to be a short wildlife desert."

Yet another example of farmers critically assessing and ultimately rejecting 'official' knowledge when it doesn't match lived experience.

This alienation from official standards deepens scepticism about externally imposed definitions of success, reinforcing the perceived need for locally rooted, context-responsive knowledge frameworks. NN6 (female, lowland arable farmer) explicitly calls out the superficiality of many sustainability claims:

"Some of the schemes feel like greenwashing. They don't tackle the real challenges we face, and they aren't flexible enough, what if something changes, drought or months of rain. We still have to stick to the way they say we should do things, not how we think they should be done."

Participants consistently framed themselves as being at the leading edge of real change, while viewing conventional institutions as 'lagging behind', or actively obstructing necessary transformations. Although this positioning risks appearing arrogant or overly self-assured, it emerges predominantly from deep-seated frustration with the slow pace and perceived inadequacies of the status quo. Their critical stance is underscored by a sense of urgency and a passionate commitment to driving meaningful change, even if it means challenging established norms and/or inviting criticism.

In this context, the role of alternative, peer-driven knowledge systems becomes even more crucial. NN2 who is a farmer but also facilitates the cluster, highlights the effectiveness of flexible, farmer-led learning structures:

"We support and guide farmers, but the range of ambition requires flexibility. Conventional advice doesn't suit everyone; smaller groups within clusters, such as compost clubs, are more effective. They need different advice, time to explore ideas."

The need for adaptability, context-specific learning, and collective problem-solving is seen as fundamental, contrasting starkly with the rigidity and abstraction of conventional knowledge systems. In addition to a need for technical and specialist knowledge, a critical knowledge

gap in *how* to think and problem solve was noted by interviewees, as opposed to *what* to think. Bridging this gap requires synergy, that is, the ability to integrate different types of knowledge: practical, experiential, theoretical, and traditional, in flexible and innovative ways. Effective problem-solving thus depends not merely on acquiring isolated facts or technical skills, but on the capacity to synthesise diverse perspectives, discern context-dependent connections and apply integrated insights dynamically. Such synergy enables more resilient responses to complex challenges, reflecting the interconnectedness inherent in real-world problems and aligning closely with the adaptive nature of agroecological and regenerative farming.



Figure 6.2 NW2 moving dairy heifers

Mirroring the complexity inherent in agroecological approaches at a knowledge level, going deeper, participants reflect on how learning must be grounded not just in human networks but in relationships with the land itself and their animals (Figure 6.2). HM2 (male, upland beef, sheep and pig farmer) articulates this profound reconceptualisation of learning:

"You can only really take your vision for the farm so far if it's not in line with what the soil or weather are doing. Conventional systems don't teach that. They take you so far, and then just say 'add more inputs' if it doesn't work, but I want to listen to what the soils tell us."

Here, nature itself becomes a peer, a co-teacher. Observation, attunement, and responsiveness to ecological cues are positioned as central to learning and decision-making. This represents a radical departure from the linear, human-centric models of conventional knowledge transfer. This relational epistemology, where farmers learn *with* the land rather than simply *about* it, represents a profound shift in worldview. Moreover, this relational, practice-based learning structure highlights the inadequacy of purely scientific, technocratic approaches to agricultural transformation. Participants

recognise that their farms are dynamic, living systems. They are sites of continuous interaction between human and more-than-human actors. In doing so, they embody a form of learning that is dialogical, co-evolutionary, and deeply situated.

The interviews reveal that scepticism toward expert advice is not a rejection of knowledge or learning per se but a radical restructuring of the terms on which knowledge is valued and shared. Participants reject hierarchical, abstract, commercially influenced systems of expertise in favour of horizontal, experiential, relational learning processes that centre both human peers and the land itself as co-creators of knowledge. This shift represents a deep leverage point for systemic transformation, echoing and extending Abson et al.'s (2017) framework: it is not enough to generate better advice, rather what is required is a wholesale rethinking of how, where, and with whom learning happens.

6.1.2 Knowledge Sharing Through Peer Networks

Positive associations with peer-to-peer and community-based learning were a recurring and powerful theme throughout all participant conversations. Across the interviews, farmers consistently emphasised the value of learning from peers, positioning these networks not merely as alternatives but as essential to the process of agroecological transition. This reconfiguration of knowledge flows, away from hierarchical, expert-led models and towards distributed, participatory systems, aligns closely with conceptualisations of rethinking learning as a critical deep leverage point for systemic transformation (Abson et al., 2017).

Participants overwhelmingly highlighted the effectiveness, immediacy, and adaptability of peer-to-peer learning, especially in comparison to conventional educational and consultancy routes. Trust was identified as a key marker of relationship success within these networks. Rather than passively receiving advice from external authorities, farmers described themselves as active participants in collaborative learning communities where local knowledge, trial-and-error, and mutual support drove innovation.

The format of these networks varied widely but shared common features: they were informal, decentralised, context-responsive, and relationally rich. A particularly important medium for sustaining these networks was the use of WhatsApp groups. Participants like NW2 (male, upland dairy and sheep farmer) explained:

"Peer networks, like WhatsApp groups or discussion groups, influence decision-making, they offer practical, local advice. I can ask for help and straight away get some answers, other farmers telling me what they did, what they tried, you know. I don't have to spend hours researching or wait for a Farming Connect event, I can fix the problem or try something out straight away."

Similarly, NN6 (female, lowland arable farmer) affirmed the importance of combining digital and face-to-face learning:

"Farm visits and WhatsApp groups have become critical for testing new ideas. I get all these ideas and then I can try them out on the farm, taking the best bits, and the bits I want to try from everyone, and just hav[ing] a go."

WhatsApp was the only specific app named, and its popularity appeared to stem from its accessibility, ease of use, and ability to foster network and issue-specific discussions in real-time. Several participants indicated that the use of WhatsApp groups not only provided immediate, tailored advice but also strengthened relational bonds within their learning communities. The use of voice notes, videos, and instant messages created a sense of immediacy and intimacy, allowing farmers to troubleshoot problems collectively, often before an agronomist or consultant could even be contacted. Furthermore, the groups through which these conversations occurred were made up of trusted individuals. Private groups operating on a personal recommendation basis, or facilitated by a knowledge transfer professional, reduced the risks associated with seeking advice in more public forums such as via X (formerly Twitter) or Facebook groups.

For example, HM2 (male, upland beef, sheep and pig farmer) emphasised the immediacy of solutions made available through informal peer groups:

"If I have a problem in the field, I can send a photo to the group, and someone usually has an idea of what to do by the end of the day."

This shift in communication patterns reflects a fundamental transformation in how farmers access and validate knowledge. Rather than relying on static, formal advice, farmers are now embedded in dynamic, continuously updating networks of practice-based knowledge, importantly, in trusted communities.

Notably, peer learning was not restricted to the digital realm. Face-to-face interactions remained highly valued, especially for seeing practices in action. HM3 (male, lowland beef and sheep farmer) described how participating in farm walks and discussions within informal groups gave them the confidence to implement rotational grazing and soil health focused management practices. Their comment that "there's no recipe" for agroecological success underscores why peer-to-peer exchange is so critical: farmers must navigate complexity and unpredictability, and learning from the experiences, and importantly, mistakes, of peers offers critical navigation tools.

The emotional dimension of peer learning emerged as a key benefit. Learning from peers was not only faster and more context-specific; it was also more supportive, affirming, and empowering. NW3 (male, upland beef, and sheep farmer), who had participated in multiple peer-led initiatives (including the Agri-Academy, Tesco Future Farmers, and Oxford Farming Conference), described how exposure to diverse farming models built self-confidence and a sense of belonging within a wider movement for change. They reflected on how participation in these networks offered encouragement at critical moments of doubt or experimentation:

"Just knowing others were facing the same questions made it easier to keep going. I wasn't on my own so much."

This collective emotional support is crucial in a sector that is often socially and geographically isolating, particularly when pursuing non-conventional practices.

Moreover, peer networks were seen not only as sources of advice but as spaces for critical reflection and challenge. NN8 (male, lowland mixed farmer) warned against uncritical adoption of fashionable terms like "regen," noting that superficial trends could spread even within peer networks. They emphasised the importance of maintaining rigorous, experience-based critique within these groups, ensuring that practices are justified by real outcomes rather than slogans. This reinforces that peer networks are not echo chambers; they are spaces of interrogation and collaborative sense-making.

Several participants also described peer learning as a way to resist and circumvent the rigid structures of government schemes and formalised advice. NN2 (female, lowland beef grazier) explained that within their cluster groups, they were able to form smaller subgroups

(such as compost clubs and seed hubs) to tailor learning and experimentation to specific ambitions. This flexibility contrasted sharply with the one-size-fits-all frameworks of conventional agricultural schemes. In NN2's view, conventional knowledge transfer systems lack the dynamism and responsiveness required to navigate diverse farming realities:

"The range of ambition and scale requires flexibility. Conventional advice doesn't suit everyone; smaller groups within clusters are more effective. They can have a go at things they are interested in, that work for them."

Thus, peer networks not only offer technical support but constitute a form of soft infrastructure for innovation, experimentation, and adaptation. This is exactly the kind of structural transformation needed for deep systemic change.

The ability to test new ideas safely within a peer context was highlighted repeatedly. NN6 (female, lowland arable farmer) described how seeing neighbours' experiments in real time gave them the confidence to adapt their own rotations and grazing systems. Similarly, HM1 (male, lowland beef and sheep farm manager) commented on the importance of observing real farms rather than relying on theoretical models:

"You need to see it in practice. It's one thing to read about it, but another to see your neighbour doing it and surviving. Then you think, 'oh, I'll have a go at that then' and it's not as risky."

This "seeing is believing" ethos challenges the conventional notion that expertise must be mediated by institutions. It affirms instead that validity comes from lived demonstration and iterative, context-specific learning.

The structure of peer learning networks also allowed for a redefinition of expertise itself. In conventional models, expertise is vested in distant authorities; in peer networks, every farmer becomes both a learner and a teacher. This radically democratic epistemology was evident in NW1's (male, lowland dairy farmer) description of how online groups allowed even less experienced farmers to contribute useful observations and solutions. Knowledge becomes a shared, evolving commons rather than a fixed body of information to be transmitted.

Peer-to-peer structures were seen as enabling more holistic learning that incorporated not only technical farming knowledge but broader ecological, social and ethical understandings. HM2 (male, upland beef, sheep and pig farmer) reflected on how observing soil health improvements on a peer's farm reshaped their own sense of environmental responsibility. Similarly, NW4 (male, upland dairy farm manager) described how discussions within peer groups increasingly integrate considerations of biodiversity, water quality, and climate resilience, expanding the scope of what farming “success” means.

The integration of digital and analogue peer networks also demonstrates a critical adaptive capacity. Participants showed high levels of media literacy, combining field walks with WhatsApp videos, in-person workshops with Twitter (X) discussions. This hybridisation of learning modes suggests that farmers are not simply reverting to traditional oral knowledge systems; they are innovatively blending old and new technologies to create agile, distributed learning ecologies (see e.g. Figure 6.3).

Knowledge sharing through peer networks represents a profound rethinking of agricultural learning systems. These networks provide faster, more relevant, and more emotionally supportive knowledge than traditional institutions. They empower farmers as co-creators rather than consumers of knowledge and enable more flexible, context-responsive innovation, they also redefine expertise itself as relational, situated, and collective.



Figure 6.3 Technology enabling more adaptive grazing on HM5's farm

6.1.3 Community Learning Builds Trust and Confidence

Peer-to-peer and community-based learning emerged across the interviews as central not only to the acquisition of knowledge but also to the building of trust and confidence necessary for transformative change. Participants consistently positioned experiential, localised knowledge as more trustworthy and valuable than abstract or top-down advice from conventional consultants, academics or government advisors.

Participants repeatedly noted that they trusted the advice and experiences of their peers, especially those farming under similar conditions, over that of external actors. This trust was not blind but emerged from shared experiences of farming realities, environmental constraints, and market pressures. NN9 (male, lowland sheep and dairy farmer) captured this dynamic concisely:

"I prefer to see what my neighbour is doing and learn from their mistakes. You can trust their advice because they're living the same reality. They have similar soils, and weather."

The emphasis on shared reality is critical. Advice is valued not because of formal authority but because it is rooted in lived experience, tested under comparable environmental and economic conditions. This stands in sharp contrast to conventional models of agricultural advice, which often assume universal applicability irrespective of local specificities, or that generally those in positions of academic power alone can hold the title of 'expert'.

The collective aspect of community learning further amplifies this dynamic. PFL7 (female, upland beef farmer in Scotland) articulated how group learning can rapidly accelerate the accumulation of practical knowledge:

"If there are 15 farmers in a group and they make one mistake a year, that's 15 years' worth of experiences right there that we can learn from and take into account when we are developing our business."

Here, peer-to-peer networks function as an informal but highly effective distributed learning system, compressing timeframes for trial, error, and adaptation. Mistakes become communal assets rather than individual setbacks. This framing is profoundly empowering, repositioning failure not as a personal flaw but as a valuable contribution to collective intelligence. Similarly, NN6 (female, lowland arable farmer) highlighted the unique value of learning from local, practical examples rather than relying on abstract, context-agnostic consultancy advice:

"We've learned more from walking someone else's fields than from consultants who don't understand the specific conditions here. Even if it's been a crop failure, we can talk

about it and learn what went wrong, what the field had had in it before, what they are going to do different next time.”

Direct observation of successful or struggling farms within a similar climatic, soil, and economic context was repeatedly described as far more confidence-inspiring than theoretical models or best-practice guidelines produced elsewhere, including on research platform farms. This underscores the critical role of relatability and situatedness in effective knowledge transfer for agroecological transition.

Community learning not only builds trust but also encourages experimentation and innovation by reducing the perceived risks of trying new practices. Farmers repeatedly described how seeing practices trialled on neighbouring farms gave them the courage to adopt new methods. As NN7 (male, lowland dairy farmer) noted:

“Farmers in the group want to try intercropping and other practices we hadn’t considered before. We saw it and thought we’d give it a go, I didn’t know where to start but it didn’t look too difficult and they came and gave us some advice.”

Innovation emerges organically from peer interactions, rather than being imposed externally. The visibility of successful trials by trusted peers reduces the psychological and financial risk associated with adopting unfamiliar practices.

HM1 (male, lowland beef and sheep farm manager) provided another clear example of how peer influence translates into action:

“We planted 25,000 meters of hedgerow to connect fragmented habitats after coming home from a farm walk. I got so inspired, I thought ‘I want some of that’”

citing inspiration from observing the biodiversity benefits of habitat restoration efforts on other farms. This highlights how community learning not only drives technical change but also fosters ecological imagination and ambition.

Beyond specific techniques, participants described community learning as crucial for generating locally tailored solutions through collective problem-solving. NN1 (male, arable farmer) explained:

"Peer networks work because we all know the same soil, the same weather. It's not someone parachuting in with advice that doesn't fit."

This emphasis on local knowledge is key. Unlike conventional extension services, which often promote standardised, top-down solutions, peer networks enable context-sensitive innovation. NN5 (male, lowland arable farm manager) further elaborated:

"The cluster has helped us find solutions that work for our specific context, like composting methods suited to our soil type. I watched lots of YouTube videos but it's not the same as going over to see someone else down the road who is having a go."

Rather than attempting to fit their farms into externally defined models, participants described working collaboratively within their communities to co-develop practices that made sense for their specific agroecological and socio-economic conditions. The relational dynamics of trust and shared purpose within peer networks were seen as crucial for enabling these innovations. Participants described peer-to-peer groups not merely as sources of technical advice but as emotionally supportive spaces where risk-taking was encouraged and celebrated. As PFL2 (male, upland beef farmer in the north of England) explained:

"We didn't know where to start when we first begun accessing these groups; it made all the difference. We really struggled to make decisions but the groups helped us, made us feel like it was safe to have a go at things."

The ability to share uncertainties, mistakes, and partial successes without fear of judgment fostered a culture of mutual encouragement and iterative learning. This social dimension, the normalisation of failure, the celebration of small wins, the sense of not being alone, was repeatedly cited as critical to building the confidence needed to attempt agroecological transformations.

Participants also emphasised how decentralised learning systems supported greater resilience and adaptability. Rather than relying on fixed prescriptions, farmers engaged in continuous experimentation, informed by their peers' ongoing trials and feedback. PFL1 (male, upland beef farmer in the north of England) described the value of learning from real-world experiences rather than generic best-practice models:

"An awful lot of valuable information comes up from the Pasture for Life forum. You pick up things you wouldn't get from a book or a course. Some of it is a bit weird, but you just take the bits you want and leave the rest."

The organic, evolving nature of knowledge within these networks contrasts starkly with the static models of conventional advice, suggesting that adaptability itself is a key epistemological value within peer-to-peer systems.

Community learning also appeared to foster greater systemic thinking among participants. NW3 (male, upland beef, and sheep farmer) reflected on how exposure to peer networks expanded their perspective beyond individual farm management toward broader landscape-level and market dynamics:

"Being part of groups like the Agri-Academy made me realise it's not just about what's happening inside my own hedges. I realised it's a big world out there, it's more complicated."

Through shared discussions, field visits, and collaborative experiments, farmers built not only technical capacity but also a deeper ecological and socio-economic literacy, seeing their farms as part of wider systems (Figure 6.4).

However, trust was not uncritical. Participants recognised that even within peer networks, claims and practices needed to be interrogated and tested. NN10 (male, lowland mixed farmer) cautioned against blindly following trends, even when they emerged from peer groups:

"Sometimes it's easy to get caught up in the buzzwords - you still need to see if it actually works here. And sometimes it does, sometimes it doesn't."

Thus, community learning fostered not only trust but also critical reflection, a necessary balance for maintaining the robustness and credibility of grassroots knowledge systems.



Figure 6.4 PFL12 in ancient woodland on the edge of the farm

Community-based learning builds trust by rooting knowledge in shared experience, reinforcing confidence through collective experimentation, and reducing the psychological risks associated with innovation. It enables farmers to adapt practices to their unique contexts, fosters emotional resilience, and expands systemic thinking. It also exemplifies a profound rethinking of agricultural learning systems, away from top-down transmission of universal truths, and towards decentralised, participatory, and situated knowledge co-production.

In the context of agroecology, community learning networks are not just a supplement to formal systems; they are a vital, generative infrastructure for change, one built on trust, collaboration, and the continuous, collective reshaping of knowledge.

6.1.4 Emotional and Social Support

Beyond the instrumental dimensions of knowledge transfer and practice change, peer and community-based learning networks were repeatedly described by participants as providing crucial emotional and social support. These networks were portrayed not simply as sources of technical advice, but as *lifelines* that sustained farmers' mental health, morale, and sense of belonging, especially during times of personal, environmental or economic hardship. This emotional aspect of learning communities represents a critical, and often underappreciated, dimension of agroecological transition, one that aligns with rethinking social structures as leverage points for systemic change.

Participants described how the simple act of coming together with others facing similar challenges helped alleviate the intense isolation often associated with farming. NW2 (male, upland dairy and sheep farmer) captured this poignantly:

"It's not just about learning; it's also about knowing you're not alone in facing these challenges. I've not always felt like I fitted in because I'm not from generations of farmers, but being in that group and having those guys to talk to really helped me, and the discussion group I joined."

This sentiment was given even sharper relief as NW2 went on to describe the aftermath of a local tragedy, the suicide of a young farmer, and how the informal learning network served as a lifeline for the community in processing grief and maintaining morale. Such accounts reveal that the stakes of peer learning are not merely technical or economic but existential.

The value of these communities lies not just in the information exchanged, but in the relational bonds they create.

The concept of a "lifeline" was echoed across multiple regions. NN6 (female, lowland arable farmer), discussing peer group meetings in Norfolk, similarly reflected:

"The peer group meetings have become a lifeline - not just for farming advice but for morale. They cheer you right up even when it's all going to shit."

During the COVID-19 pandemic, national-level networks like Pasture for Life also took on critical emotional support functions. One participant recounted:

"The webinars were a lifeline during Covid; we felt so alone but seeing all those faces online was amazing. We loved logging on and seeing those people, we felt really connected."

Digital tools such as webinars and online discussion forums supplemented physical gatherings, demonstrating that both analogue and digital spaces can provide vital emotional and social connection, depending on context and need.

In the North York Moors, emotional support through community learning was similarly profound. One participant reflected on the impact of joining a peer group during a particularly challenging time:

"This group has been a lifeline for me, when we had the baby and things were hard with money and the new tenancy. We were arguing a lot at home. I felt like I was letting everyone down. The meetings got me off the farm and out of my own head for a few hours."

This testimony highlights the mental health dimension of peer networks and their hidden role as so-called 'accidental councillors' (Wheeler et al., 2025): they offer not only advice but crucial psychological respite, creating moments of reprieve from the pressures and emotional burdens of farming life.

The role of emotional support in enabling resilience was repeatedly emphasised during the interviews, farm visits and subsequent WhatsApp exchanges. NW2 (male, upland dairy and sheep farmer) described how group discussions fostered a vital sense of inclusion and connection:

"The discussions have been great not just for practical advice but for feeling part of something bigger".

As a new entrant transitioning from hill sheep farming to dairy, NW2's feeling of being welcomed as "one of us" was critical. In an industry often marked by entrenched hierarchies and suspicion toward newcomers, peer networks offered a way to overcome outsider status and build genuine belonging based on shared struggle and mutual learning.

Participants described how shared experiences of adversity, particularly environmental challenges like drought, deepened the sense of camaraderie and solidarity within their networks. NN2 (female, lowland beef grazer) reflected on the collective learning and emotional bonding that emerged during recent extreme weather:

"We learned so much from each other during the drought. It's amazing how pulling together makes a difference."

This sentiment was echoed by several participants from the North York Moors cohort (NYM3, NYM7, NYM11), who also referenced the way collaborative learning during challenging times strengthened personal resilience and reinforced community bonds.

Through these stories, it becomes clear that peer networks do far more than disseminate best practices; they build collective emotional infrastructure in a wider landscape of support. They foster a sense of shared fate and collective agency, enabling farmers to feel less isolated in their struggles and more empowered to experiment, adapt, and persevere.

Another striking pattern was the way community-based activities fostered intergenerational connections and strengthened family dynamics. Participants described how field days, workshops, and group projects brought together multiple generations, reinforcing familial ties through shared learning experiences. HM8 (female, lowland beef farmer) recounted:

"We planted hedgerows with the kids during a field day, and it brought everyone together while teaching the importance of biodiversity."

Similarly, PFL1 (male, upland beef farmer in the north of England) expressed hope for the future upon seeing families participate together in agroecological events:

"Seeing people with their kids at the study tour made me hopeful that this has a future."

The benefits extended beyond younger generations. Some participants described how involving older family members in new farming practices reshaped relationships and improved wellbeing. PFL9 (male, upland beef farmer, in Scotland) shared a particularly telling example:

"Dad was reluctant to understand why I wanted to make these changes, but now he gets a holiday in the autumn because we stopped crops and autumn calving. He gets it."

In this case, peer-influenced practice changes not only enhanced ecological outcomes but also improved quality of life across generations, illustrating the multifaceted impacts of social learning networks and their capacity to facilitate wider social sustainability.

Participants frequently emphasised that emotional support and practical learning were intertwined. Trust in peer groups was built not just on technical competence but on emotional resonance: a shared recognition of hardship, hope, and commitment. This dual function, technical and emotional, is what gives community learning its uniquely transformative potential. NN9 (male, lowland sheep and dairy farmer) reflected on this eloquently:

"It's not just the advice; it's knowing that others have your back when things get tough. That they will come and help if something goes really wrong, all hands on deck like."

This sense of mutual reliance and solidarity creates conditions where farmers feel safer taking risks, exploring new ideas, and persisting through inevitable setbacks. It transforms learning from a competitive, isolating endeavour into a cooperative, resilient practice. Moreover, the interviews reveal that these emotional bonds often spill outward, influencing broader community cohesion. Several participants described informal spillovers where ideas, encouragement, and emotional support extended beyond formal network activities into everyday interactions: conversations at markets, spontaneous farm visits, WhatsApp groups full of jokes and encouragement. These diffuse, networked forms of connection further entrench the supportive culture of community learning, making it an ongoing, lived reality rather than a discrete intervention.

The emotional and social support provided by peer learning networks plays a foundational role in enabling agroecological transition. It builds resilience against personal, environmental, and economic shocks; fosters belonging, solidarity, and hope; and strengthens family and community ties. These networks are not simply information exchanges, they are lifelines, emotional commons, and catalysts for personal and collective transformation. They exemplify how deep systemic change depends not only on technical innovation but on reshaping the very social fabric through which farming knowledge, identity, and wellbeing are constructed.

6.1.5 Rethink: Paradigm Shifts

Across all interviews, participants described transformations that extended far beyond the adoption of new techniques. What emerged was a widespread, ongoing paradigm shift, a deep rethinking of the purpose, ethics, and practices of agriculture itself. This shift, stimulated by peer learning, lived experience, and ecological introspection, reflects what Abson et al. (2017) identify as a deep leverage point: a re-evaluation of the values, worldviews, and definitions of success that underpin entire systems. Participants are not merely modifying how they farm; they are redefining what it means to farm well.

One of the clearest shifts observed across the dataset was a reorientation from short-term productivity metrics toward longer-term ecological purposes and community outcomes. Rather than striving to maximise yields or conform to conventional economic models, farmers are beginning to prioritise soil health, biodiversity, and the regeneration of land and community relationships.

PFL9 (male, upland beef farmer, in Scotland) explained how their goals had evolved toward ecological and intergenerational outcomes, rethinking the role of buyers from consumers to actors in the cyclical process:

"We want our land to regenerate naturally, with local buyers supporting the cycle. This isn't just about us, but how we help our customers feel more connected to their food, to farming."

This integration of production with environmental and social restoration shows a system-wide reframing of value. The desire for regeneration, of soil, ecosystems, community relationships, and even farming identities replaces the historically dominant drive for

extraction and efficiency. It was reflected across sample participants, regardless of business size or current routes to market. Participants articulated that paradigm shifts are not occurring in isolation on farms but are being co-produced with those beyond the farm gate, and not just other farmers but also consumers, who are increasingly positioned not simply as passive recipients of food but as active participants in agroecological transitions. Several farmers described how consumer expectations, feedback, and purchasing decisions helped reinforce their commitment to more regenerative approaches. For PFL5 (female, lowland beef and sheep farmer in Scotland), it was the persistent questioning and encouragement from customers that pushed the final decision to go organic and fully align the business with ecological values:

"Our customers said, 'Why aren't you organic?' and if you're saying, 'Why not go that step?'... that gave us the final push."

In this case, market interactions are not external pressures but opportunities for mutual education and accountability. Similarly, PFL10 (male, upland mixed farmer, Scotland) reflected on how their visible environmental work influenced others in the community to begin their own agroecological journeys:

"We've had people come to look at what we've done. She saw what was happening here and now wants to put in a pond and bird boxes. I don't know if she'd have done it otherwise."

Farming becomes part of a broader civic and cultural landscape where observation, storytelling, and shared values enable ripple effects across society. These accounts reflect an emerging model of agriculture that is participatory and transparent, creating a dialogue with consumers, neighbours, and the wider public. They are no longer simply end-points in the supply chain, but co-authors of a new farming paradigm.

The shift in thinking was described in deeply personal terms. Participants, for instance, spoke of a growing recognition that farming does not stand apart from ecological systems, but is an intrinsic part of them. PFL4 (male, lowland mixed farmer), spoke candidly about learning to listen to the land:

"I'm trying to let the farm tell me what it can handle and what it wants, rather than me say I want to do this and I'm going to do that."

Such statements reflect an epistemological shift. Decision-making becomes relational, attuned to cues from the environment rather than imposed from agronomic doctrine. This rethinking is not simply technical; it is moral and affective, a reconsideration of the farmer's role and being in relation to the land.

This change often arises from direct experience. PFL12 (female, upland beef and sheep farmer) described how observing life returning to neglected areas of the farm, such as spiders, voles, orchids, prompted a realisation that doing less and observing more was not laziness but ecological attunement:

"Seeing more nature on our side than in the SSSI made me want to create more space for nature, without funding, just by leaving things alone."

Here, the act of watching and learning from this process becomes a revolutionary mode of knowledge development, counter to dominant models of control and intervention.

Many participants described how their definitions of success had shifted, no longer measured in price per kilo or tonnes per hectare, but in landscape health, biodiversity presence, and family wellbeing. NW3 (male, upland beef, and sheep farmer) remarked:

"I'm thinking about the whole system now - water, insects, birds, even what my neighbours are doing."

This reflects a growing systems consciousness, in which success is not defined by isolated farm performance but by broader ecological and social interconnectedness.

For some, this shift also required rethinking what was inherited, not just in terms of practice, but in worldview and identity. PFL5 (female, lowland beef and sheep farmer in Scotland) reflected on how her early exposure to ecological degradation during field surveys, combined with the moral imperatives voiced by her customers, reshaped her approach to farming entirely. What began as a vague discomfort with "putting on all this stuff" developed into a commitment to diversity, low-input systems, and direct customer relationships as tools for ecological restoration and social connection. As she explained,

"The driver for me always was... why shouldn't we farm like this? I was doing ecological surveys and just saw the good, the bad and the ugly. It reinforced what I'd always thought."

This evolution of mindset, shaped as much by emotional resonance as technical evidence, illustrates how paradigm change is often a layered process, merging inner convictions, external relationships, and accumulated observation into a new ethical and practical orientation.

This rethinking was not limited to ecological dynamics; it also included the social and cultural role of farms. Farmers increasingly saw themselves as community anchors, providers of wellbeing, connectors of people and place, and stewards of shared heritage. NW1 (lowland dairy farmer) articulated this most clearly:

"Farmers are central to their communities and can lead by example in sustainability. We can show what's possible, how farming can be a solution not a problem."

Farming decisions were often framed not as isolated business choices, but as acts that ripple through the fabric of local life, influencing neighbours, local markets, biodiversity, and future generations. For PFL2 (male, upland beef farmer in the north of England), this vision was tangible:

"We didn't start as farmers. We just wanted to do something good with the land. Now we see this whole system changing, and others are copying it. That's amazing."

This reflects a powerful reconceptualisation of farming not as a private enterprise but as a civic and ecological act, a visible, replicable model for others in the community and a source of pride and purpose. This is more than just a 'public good' linked purely to functional ecosystem services, the transformation becomes not just one of land use, but of leadership and cultural influence. Farmers described their landscapes becoming demonstration sites where ecological repair, experimentation, and new relationships with land could be seen and shared. This sense of being watched but also inspiring others was not viewed as burdensome but instead provided motivation.

PFL10 (male, upland mixed farmer, Scotland) offered a complementary example, describing how wildflower planting and riparian restoration around public footpaths created an opportunity for shared environmental engagement:

"We've taken little pockets on the farm that were poorly utilised and put wildflowers on them... people walking the Speyside Way always comment on it. That feedback, it makes it feel worth it."

Such reflections show that farming decisions are increasingly made with an awareness of their social visibility and community resonance, again reflecting the role of the public, not just farming peers in developing feedback loops to inform transformational practice. The land is not just a production space but a place of shared stewardship, and the act of farming becomes a contribution to the cultural and ecological identity of place.

The shift in thinking was almost never solitary. Nearly every participant described how peer learning, collective experimentation, and community dialogue helped stimulate and reinforce their evolving worldviews. For many, it was the open exchange of ideas, the permission to ask questions, and the ability to observe alternatives in practice that made change possible. HM5 (male, lowland mixed farmer), for example, reflected on how seeing and hearing from others altered not just what they did, but how they thought:

"All of that helps, the links, the podcasts, the articles. You go out on the farm and you see things in a slightly different light."

This subtle but significant shift from seeing peers as competitors to co-learners, created space for deeper reflection. It enabled farmers to interrogate previously held assumptions, entertain new goals, and locate themselves within broader social and ecological systems.

The exposure to different viewpoints, the encouragement to question inherited assumptions, and the emotional backing to try something new created a fertile ground for transformation.

These peer groups, both formal and informal, provided not only technical support but a new cultural logic. As PFL11 (female, lowland beef and sheep farmer) explained:

"Just talking to others, hearing how they're thinking about nature or soil, it changes how you think. It's not the same as reading a textbook. It's about perspective."

This "perspective shift" is not imposed, rather it is cultivated through dialogue, trust, and seeing examples in real time. It often results in farmers abandoning deeply embedded narratives about what success looks like, what nature is, or what their role is within the system.

The shift in paradigm also revealed a generational evolution in values. Younger or newer farmers often pushed for change, while older generations observed and gradually adapted. PFL9 (male, upland beef farmer, in Scotland) described how a shift away from autumn calving and crop reliance created both ecological and relational benefits:

"Dad was reluctant at first. But now he gets to take a holiday, and he sees it works. That's when you know the paradigm's changed."

This is a powerful example of intergenerational co-learning, where identity, responsibility, and vision evolve in tandem. For new entrants, peer groups also helped redefine what it means to be a "real" farmer. NW2 (male, upland dairy and sheep farmer) described joining a peer group while transitioning from hill sheep to dairy:

"It made me feel like one of them, not just someone playing at farming. It gave me the confidence to try something different."

Paradigm shifts here are also shifts in self-perception, where confidence, belonging, and legitimacy are co-constructed through community.

Finally, participants, through re-thinking their systems and learning opportunities, described a reimagined vision of agriculture as one that transcends its industrial past. They imagined farms as ecological nodes, social commons, and centres of cultural restoration. They saw their roles as facilitators of regeneration, not just of land, but of relationships, ecologies, economies, and futures.

This vision, however aspirational, was grounded in practice (e.g. Figure 6.5). Whether through hedgerow planting (HM1), wildflower meadow recovery (PFL2), rotational grazing (NN2), or soil monitoring (NYM3), these paradigm shifts were materialised through everyday action. The farms are, as one participant put it:

"Little laboratories of hope, we're proving you can do this differently."

The paradigm shifts described by participants are radical in their implications but grounded in careful observation, emotional engagement, and collective learning. They reflect a move from control to care, from isolation to interdependence, and from production to regeneration, opening the way for lasting, systemic transformation.



Figure 6.5 NN2 making introductions to their herd of cattle

6.2 Re-Connect

The second deep leverage point for sustainability transformation outlined by Abson et al. (2017) is the imperative to re-connect, meaning to restore and reshape the relationships between humans and nature, and between people and the systems that sustain them. Where the *re-think* lever concerns how knowledge is produced and used, the *re-connect* lever asks how people come to care, notice, and act differently because they feel more intimately embedded in ecological and social systems. It invites a return to relationship building, one that is emotional as much as intellectual, embodied as much as strategic.

For the farmers in this study, re-connection was not a romantic return to a pre-industrial past, nor a wholesale rejection of productivity or progress. Rather, it took the form of an emerging awareness, often gradual, occasionally catalysed by crisis, that farming is fundamentally a relational practice (Figure 6.13). It is shaped by attention to soil, weather,

plants, animals, and people; by memory and place; by seasonal rhythms and sensory cues. Across the interviews, participants described moments of recognition and attunement. This was to birdsong, to the return of orchids, to the weight of a dry spell in the soil, that marked a shift in how they saw their land, their role, and what it meant to farm well.



Figure 6.6 NN5 Explaining the care that goes into compost making

Re-connection in this context was not a singular event but a cumulative process. It emerged through observation, emotional resonance, and the slow development of trust, not only between farmers, but between farmers and their landscapes. It was fostered through peer learning, and attention to the more-than-human actors that shape the farm's local ecology. In some cases, it was reflected in a decision to rest a field, to let a

hedge grow out, or to plant trees not for income but for habitat, and sometimes for legacy.

This section explores the many forms this re-connection takes, not only as a theme in farmers' reflections, but as a practice that shapes how they learn, how they manage, and how they locate meaning in their work. It concentrates on farmers' relationships with nature and the more-than-human world (Parrott, 2021) while also attending, where relevant, to the emotional, cultural, and intergenerational dimensions of farming that reinforce or mirror this reconnection. These insights do not simply illustrate behaviour change; they reveal the emergence of new forms of relationship and responsibility, the development of relational capacities that may prove critical in enabling just and enduring agroecological transitions that create resilience in an increasingly challenging climate.

6.2.1 Reconnection Through Observation and Attunement

One of the clearest and most consistent expressions of nature connection across the interviews came through participants' descriptions of observation, not as a technical act of monitoring, but as a relational and often emotional form of attentiveness to land, animals, weather, and ecological change. For many farmers, a shift occurred when they began to spend more time on foot, slowing down, and noticing things they had once overlooked. Shifting from vehicle to feet happened for a range of reasons. For the livestock managers it was sometimes a result of a changed grazing system, where mob grazed cows were being moved between paddocks without the need for a vehicle, and in one case it was simply because the quadbike needed repair. In that instance, the farmer realised what they had been missing, lost in the noise of an engine as they completed their daily rounds. For the arable farmers, the willingness to walk crops and connect with their plants and soil directly rather than remotely through an agronomist was a key point of change, an observation driven by an awareness that soil had become more than a growing medium and instead deserved attention and care.

This process of attunement, shaped by both experience and deliberate reflection, emerged as a practice of reconnection, not just with nature in the abstract, but with the specific places, soil, species, and seasonal rhythms that defined their farms.

Several participants articulated how walking, watching, and simply spending time on the land revealed new possibilities. NYM10 (male, mixed farmer) described the difference between riding a quad bike and walking:

“You don’t notice those things unless you’re walking. That’s where you learn what the field’s trying to tell you.”

This idea that the land could communicate, if only the farmer was able to listen, recurred across regions and systems. It marked a shift in the direction of knowledge flow, where instead of the farmer imposing change on the land, they were learning from it.

HM6 (male, lowland mixed farmer) captured this perspective with particular clarity:

“We sort of farm at the privilege of Mother Nature... you can only really take your vision for the farm so far if it’s not in line with what the weather or the soil are doing.”

Here, the weather and soil are not just environmental constraints but co-authors in the decision-making process. The farmer's role becomes one of listening, adapting, and responding. This shift in mindset reflects a move away from linear planning and 'farming by dates', toward iterative, reciprocal forms of engagement with the land and livestock.

This relational quality was echoed in the language of other participants. NN2(female, lowland beef grazer) described the return of swallows and dragonflies as part of a "symbiotic relationship," enabled by decisions to reduce chemical use and foster habitats:

"Nature pays back in what it does for you... the birds are eating the flies, the cattle are thriving. That is perfect."

In this framing, nature is not separate from the farming system, it is part of the infrastructure that makes it function. The recognition of this interdependence often arose through careful observation and the willingness to trust ecological processes, even when their benefits were not immediately measurable.

For many, observation brought emotional rewards as well as practical insights. PFL3 (male, lowland sheep farmer in Wales) described a transformative experience walking through a hayfield that had been left to rest:

"I was seeing the spiders, the voles, the things moving away from me in the grassland, which I had not seen before... it was like the land was doing something back."

This encounter marked a turning point and a recognition that planned inaction ("planned laziness," as they called it) could allow life to re-emerge in unexpected ways. The moment was not just one of ecological success, but of emotional resonance, rooted in a sense of wonder and humility.

Others described how attunement had developed gradually, over decades. NN8 (male, lowland mixed farmer) spoke of an intuitive connection that had become "second nature" after years of trying to work more in tune with soil biology and weather patterns:

“You do it without specifically thinking... I don’t need a microscope. I just feel it’s the right thing to be doing.”

For NN8, the trust in nature had become tacit, something embodied and practiced, rather than theorised. While they valued scientific tools, the decision to shift practices came from a deeper sense of rightness, informed by cumulative observation and a commitment to long-term soil health.

In some cases, observation became a counterweight to more extractive impulses, particularly the inherited pressure to keep fields neat, controlled, and visually tidy. NYM3 (male, upland beef farmer) described standing in a pasture alive with knapweed, yarrow, and insects, and questioning the ingrained instinct to mow it down:

“Wouldn’t it help me topping all this? It’s the best way to be tidy? When you have a landlord or land agent rocking about they want it neat, but they don’t see what I do now, all this life”.

This moment reflects a subtle but powerful recalibration. The farmer is learning to resist the reflex to intervene, to cut back or clean up, and instead allow nature to express itself. Their discomfort with “scruffy” pasture is social, not ecological. The tension lies not in the land’s productivity, but in how it is seen and judged, especially by those in positions of power such as landlords or land agents. In this moment of pausing, of not topping, observation becomes an act of care, of restraint, and even of defiance against the norm. The decision to leave things be is no longer framed as neglect, but as a deliberate space-making for nature. It is through this kind of hesitation, reflection, and sensory engagement that many participants began to describe a shift from managing land for productivity to managing it with ecological integrity.

The act of observation also required a kind of openness to being wrong. NYM5 (male, upland beef and sheep farmer) recounted a failed attempt at direct drilling that prompted a reconsideration of assumptions:

“We were doing it to the land, not with it. That’s what went wrong. We were doing what someone else told us to do, not testing it and changing it to suit the conditions on our farm.”

Here, observation wasn't just about ecological cues but about recognising misalignment, when the farmer's intention diverged from what the land could support. It was a moment of humility and reorientation, grounded in attention to outcomes rather than adherence to ideology.

Observation and attunement also intersected with seasonal awareness and aesthetic experience for many participants. NYM3 (male, upland beef farmer) described the pleasure of seeing swallows feeding on flies above rested grasslands, a direct result of reduced chemical inputs and daily livestock moves:

“You could almost see the flies get up... we lost count at around about 150 swallows.”

This vivid sensory moment, incorporating sound, movement, and light, became a form of feedback, reinforcing the ecological value of changes made. It was also described as emotionally rewarding, a confirmation that less intervention could lead to more abundance, at least psychologically.

Other farmers spoke of observation as a shared practice, one that shaped family dynamics and intergenerational learning. NYM6 (male, upland sheep farmer) described how they involved their daughter in identifying bird species, spotting insects, and noticing small shifts in soil texture. For them, attentiveness was not just a personal habit but a pedagogical tool, a way to embed care into the next generation.

Taken together, these examples reveal observation not as a passive act but as an active, iterative, and relational form of knowledge-making. It is through walking, watching, waiting, and reflecting that many participants described coming into deeper relationship with their land, a relationship marked not necessarily by ownership, but by attention, dialogue, and reciprocity.

This form of reconnection is at the heart of the “re-connect” lever as defined by Abson et al. (2017). It is not only about appreciating nature or reducing impact; it is about repatterning the relational fabric between humans and the more-than-human world. For the farmers in this study, observation became a discipline of care, a way to know, respond to, and be changed by the land (Figure 6.7).



Figure 6.7 Compost windrows in North Norfolk

6.2.2 Perceiving Self and Others: Nature Connection as a Mirror

While many farmers spoke fluently and confidently about their own sense of connection to nature, often in emotional, sensory, and ethical terms, their reflections on the attitudes of other farmers were more complex. This theme of differentiation between one's own attentiveness to nature and that of peers, appeared throughout the interviews. It offers insight not only into personal reconnection, but into how cultural norms, identity, and social dynamics shape what is visible, sayable, and valued within farming communities.

Several participants described their own connection to nature as foundational. PFL1 (male, upland beef farmer in the north of England), for example, associated connection with “being at peace,” a sense of contentment that arose most vividly in spring when life on the farm felt abundant:

“trees are coming out, hedges are coming out... everything's blooming, it just makes me feel good, I feel part of it all”

For PFL10 (male, upland mixed farmer, Scotland), the absence of engine noise while walking on foot, rather than using a quad bike, became a portal into sensory awareness and gratitude:

“you also notice the other noises around... it’s an amazing job to have. The birds, the wind in the trees, the river”.

Others tied nature connection to childhood memories and longstanding emotional bonds. NN10 (male, lowland mixed farmer) reflected that nature was “in my roots,” describing early fascination with beetles and birds and how this early wonder shaped their farming identity. Similarly, NYM6 (male, upland sheep farmer), a lifelong birdwatcher, expressed the joy of sharing knowledge with his daughter and watching birds nest in hedgerows planted years before. These were not simply accounts of proximity to nature but of relational continuity, sustained over time, across generations, and through care-filled attention.

Yet, when asked how other farmers related to nature, many participants adopted a more cautious or ambivalent tone. PFL10 (male, upland mixed farmer, Scotland), despite affirming that “farmers do care” about nature, also noted that this care was under-communicated:

“farming is really bad at not portraying that care... but you talk to farmers, and they’re always noticing things”.

This discrepancy, between what is *felt* and what is *said*, points to a cultural hesitation, possibly a quiet reverence for nature that remains largely unspoken in public or peer-facing contexts.

This insight was echoed by the NW2’s (male, upland dairy and sheep farmer) reflection about other farmers that:

“you get them started on a one-to-one conversation... and you can’t stop them, but they won’t talk about it in a group. They don’t want to seem soft, or daft.”

Nature, in this reading, becomes a private enthusiasm, held close and shared selectively, often only when farmers feel they are in safe or sympathetic company.

Some participants were more explicit in drawing contrasts between their own journey and that of neighbouring farmers. PFL3 (male, lowland sheep farmer in Wales) recounted a

conversation with a local farmer who referred to leaving grass a bit longer as “being a bit regen,” highlighting a lack of intentionality or critical reflection. They added:

“He thinks we’re bizarre. But he shears my sheep, we’re friends really.”

A telling juxtaposition of proximity and distance, practical dependence but philosophical divergence. Here, the participant saw themselves as deeply committed to ecological processes, while perceiving others as engaging more superficially or strategically.

Others, like HM2 (male, upland beef, sheep and pig farmer), took a more balanced view, acknowledging the diversity of values and perceptions even within small communities:

“I think a lot of people would say, ‘I love nature because I’m a farmer’, and that would be as deep as it would go”.

He suggested that while many farmers work in and with nature, how they value and interpret that relationship varies widely, shaped by ethics, economics, and personal experience. Some might express their connection through productivity and tidiness, others through ecological restoration.

PFL9 (male, upland beef farmer, in Scotland) offered a similarly generous take:

“Most farmers... they’ve all got quite a soft spot for nature, but they don’t shout about it, they just get on and keep farming.”

In his view, farmers may not talk about it much, but when taken to a special corner of the farm such as a pond, a hedgerow, a known owl nesting site then “they’re quite proud of it”. These observations suggest that nature connection is often felt but marginalised in dominant agricultural narratives, surfacing only in private or emotionally resonant contexts.

This pattern, where farmers express deep connection to nature in private but hesitate to voice it in more public settings, points to a larger cultural phenomenon within the agricultural sector, the marginalisation of emotional and ecological sensibilities within dominant narratives of productivity, and stoicism. Many participants clearly felt a strong, often lifelong attachment to the land, yet framed this attachment as personal and internal. Nature connection was treated as real and important, but also as something not easily acknowledged in public or industry settings.

This dynamic is not accidental. As expressed by participants, the prevailing image of the farmer in mainstream policy, consultancy, and even in much of the agricultural press, remains heavily influenced by productivist values: output, efficiency, and control. And where nature does occur, it is relegated to the edges alongside those productivist values, rather than enmeshed within a different agricultural dynamic. Within that frame, emotional expression, particularly if tied to non-economic values like joy, wonder, or grief, may be seen as soft or even unprofessional. As a result, many farmers who feel deeply connected to nature may self-censor that part of themselves, discussing it only with close peers, in trusted networks.

Several participants, such as PFL9, PFL10 and PFL11, alluded to this. While confident in their own ecological motivations, they noted that few farmers “talk like that out loud.” Yet when given the space, such as a one-on-one conversation, a field day, or an online group with shared values, those same farmers “can’t stop” talking about birds, wildflowers, or the joy of seeing hares return to their meadows. This suggests that the emotional depth of nature connection is not absent in farming culture but is often inhibited by the social norms that define what can be spoken, credible, or relevant.

The implications of this are significant. When emotional relationships with nature are pushed to the margins, both figuratively and literally, where nature is limited to the ‘hedges and edges’ of farms, they risk being perceived as irrelevant to real farming, even though they often form the moral and motivational bedrock of the most transformative practices. This is further consolidated by these relationships with the more-than-human not being recognised in schemes, training, or public discourse. Farmers like NYM6 or PFL3, who plant hedges, rest fields, or stop spraying not because they were told to, but because it felt right, may struggle to explain those decisions within conventional logics of cost-benefit. Their decisions are grounded in care and attentiveness, not always quantifiable, but profoundly effective.

This creates a paradox: some of the most ecologically innovative farmers may feel the least able to speak publicly about what truly drives them. Their connection to nature is lived but under-theorised; practiced yet under-acknowledged. In a sector that often demands defensibility through metrics, these farmers rely on experiential, relational ways of knowing that are difficult to defend in spreadsheets but powerful in the fields.

Addressing this marginalisation requires creating cultural and institutional space for emotional and relational knowledge. It means recognising care and curiosity as legitimate motivators of land management decisions and designing learning environments, policy frameworks, and public narratives that invite rather than silence the deeper affective and ethical dimensions of farming. If we are to take the re-connect lever for transformation seriously, we must go beyond asking farmers to plant trees or reduce inputs; we must create the conditions in which they can feel and express what matters most without apology or self-editing.

Interestingly, several participants spoke about nature as both a motivator and a liability. Recognising that it is something to be protected, but also something that rarely “pays the bills.” NW3 (male, upland beef, and sheep farmer) described how government decisions and economic pressures had led many farmers to deprioritise nature:

“unproductive parcels should just be left alone... but they never paid the bills, so they’ve suffered”

Nature, in this framing of existing alongside productive farming, is something farmers value emotionally but struggle to prioritise financially, a source of tension rather than a simple good, or recognised for its added value as a public good or even just inherent benefit.

Some tried to bridge this gap. NN11 (male, lowland mixed estate owner), who only recently began thinking consciously about his environmental impact, reflected on how COVID prompted a personal reckoning:

“I had this amazing wildlife that I could just continually walk in... and be part of and feel connected with, I was so lucky – so many people didn’t have that”.

His account marks a transition from conventional productivity to reflective awareness, a transformation not yet completed but meaningfully underway.

For many farmers in this study, expressing a deep relationship with nature required not only attention and care, but courage to speak of feeling, and to act on observation. One participant (NW3) reflected that they would never have taken another farmer to some of the fields we visited together, because they were so “messy, so scrubby” and would have been a cause of embarrassment. Another farmer in the same cohort shared videos of orchids

flowering in fields that he had never seen before as a result of a change in management, and when asked if he would share those more widely on social media, responded negatively because of how he would be viewed by peers outside of his trusted circle.

Ultimately, these reflections reveal that nature connection is both widespread and uneven, felt in rich and diverse ways, but not always publicly owned or institutionally supported. While many participants positioned themselves as more reflective or connected than their peers, there was also empathy and recognition that others may express care differently through quiet management, resource protection, or simply knowing where the curlews nest and adjusting their practice accordingly. What these accounts suggest is that reconnection is not only a process of personal transformation, but also a social negotiation. It is shaped by what can be said, what is rewarded, and what is culturally intelligible within a given farming context.

6.2.3 Emotional Ecology and Nature Connection

Building on the paradigm shifts explored in the Re-think section of this chapter, this section focuses on how emotional experiences of nature deepen and sustain farmers' evolving identities and land relationships. Across the interviews, many participants described their relationship with nature in ways that extended beyond observation or ecological awareness. What emerged was a complex emotional ecology, a recognition that feelings such as joy, pride, anxiety, and even grief were not incidental to farming, but embedded within daily interactions with land, animals, and seasonal change. These emotional responses often shaped decisions in subtle but significant ways, influencing how farmers approached care, continuity, and responsibility in their work.

Several participants spoke of a strong sense of satisfaction or fulfilment when their actions supported ecological recovery. This was often framed not as environmental idealism, but as confirmation that their management decisions were working in practice. NYM3 (male, upland beef farmer) described the experience of walking through species-rich pasture after a period of changed grazing management:

“It was humming with bees. You could hear the hum before you stepped into it. And I thought, right, that’s how I know it’s working.”

This kind of feedback was not expressed in terms of metrics or benchmarking, but in terms of sensory affirmation. For NYM3, the soundscape of bees acted as both a signal of biodiversity and a source of personal assurance, evidence that a different approach was having tangible effects.

For others, emotion served as a form of moral orientation. PFL12 (female, upland beef and sheep farmer) reflected on moments when ecological recovery felt not just satisfying but ethically right:

“Seeing the voles scatter in the grass after we stopped mowing, it just felt like that bit of land was happier. Like it had been waiting for us to leave it alone.”

The language here is metaphorical, but the impulse is clear. The decision to refrain from intervention such as to let a field rest or a margin grow out, was not merely strategic but emotionally and ethically charged. The experience did not simply confirm a better management decision, it reoriented how they felt about their relationship with land, from interventionist to reciprocal. Several participants described such decisions as being accompanied by a sense of relief or calm, a decrease in internal tension that reflected a shift in how they perceived their role.

While positive emotions dominated many accounts, some participants also spoke of grief or frustration, particularly when ecological decline was experienced as personal loss. PFL5 (female, lowland beef and sheep farmer in Scotland) described visiting local fields once filled with orchids and hearing birds that no longer returned:

“You walk past places that used to be full of sound, and now there’s nothing. You can’t pretend that doesn’t do something to you.”

This experience of silence, an absence that is noticed and felt, points to a different kind of emotional connection: one that includes mourning and recognition of irreversible change. In this context, farming becomes not just a profession but a front-line experience of environmental degradation, with emotional implications that are often under-recognised in public narratives. For those participants who expressed a hyper awareness of agriculture’s potential environmental impact, their anger at being perceived publicly in the same way as farmers whose actions suggest they feel less strongly about their impact was evident. There

is a desire to be understood by non-farmers, to recognise their deep-rooted engagement with land and to understand that they are fiercely protective of the nature they seek to care for.

Pride emerged most strongly when others acknowledged the ecological integrity of their land. NYM6 (male, upland sheep farmer) shared how showing visiting ecologists around his farm brought both pleasure and validation:

“They said, ‘you’ve got more bird species here than most reserves.’ That made me proud. Not because I’d done anything clever, but because it meant we’d left enough space for them.”

Here, emotion is linked to restraint, the decision to leave space, to avoid over-management, and to trust ecological processes over prescriptive inputs. This pride was modest, but grounded in the recognition that good outcomes had resulted from a willingness to share land and resources with non-human kin.

Several participants also described emotional connection in more familial or embodied terms. NYM5 (male, upland beef and sheep farmer) spoke of walking fields managed by his parents and grandparents, and described a sense of presence tied to place:

“You know those fields. You’ve known them your whole life. You feel it under your feet, you know when it’s right and when it’s not.”

This physical familiarity, a knowledge held not just in the mind but in the body, was described by multiple participants as essential to decision-making. It suggested a form of attunement built not only on observation, but on *dwelling* (cf. Gray 1999), being in a place long enough to feel its rhythms, remember its patterns and respond accordingly.

The role of emotional ecology was also evident in moments of moral conflict, particularly where economic pressures collided with personal values. NN7 (male, lowland dairy farmer), reflecting on a decision to leave certain grass margins uncut despite potential yield losses, said:

“It’s not always the most efficient thing to do. But when I see the birds coming back, it reminds me why we’re doing it. And then they all add to the overall productivity of the land, it all adds up to something bigger.”

This comment illustrates how emotion can act as a corrective to purely economic reasoning, a form of internal accountability that anchors decision-making in values beyond profit. For many farmers, ecological outcomes had become morally charged reference points, guiding what felt acceptable, appropriate, or justified, even when those decisions were difficult to explain within conventional business logic.

Importantly, none of these emotional responses were framed as sentimental. Farmers described them as grounded in experience, memory, and practice. A result of the cumulative effect of years working with land, noticing change, and responding to non-human cues. Emotional connection was not abstract or aestheticised, but pragmatic and rooted, the kind of emotional literacy that emerges from repetition, responsibility, and reflection (Gray, 1999).

At the same time, some participants acknowledged that such emotions could feel culturally out of step with dominant agricultural norms. Expressions of awe, grief, or pride were often delivered tentatively, or accompanied by caveats, as if to say, *this matters to me, but I'm not sure it's supposed to*. As discussed earlier in the chapter, this suggests that emotional connection remains undervalued or under-articulated in mainstream farming discourse, even when it plays a central role in driving ecological care.

While many participants described deep satisfaction, wonder and pride in reconnecting with nature through their farming practices, they also revealed the emotional risks that accompanied this process. Reconnection was not framed solely as a positive or easy experience, it also exposed vulnerabilities, tensions, and forms of emotional labour often underacknowledged within conventional agricultural narratives.

For some farmers, reattuning to ecological rhythms and non-human life brought with it a heightened sensitivity to environmental degradation. NN9 (male, lowland sheep and dairy farmer) reflected on how shifting toward biodiversity-focused management changed how he experienced his own landscape:

"When you start seeing more, you can't unsee it. You notice the gaps, the birds that aren't there anymore, the bare patches that don't come back."

Here, enhanced observation, a key part of reconnecting, did not always bring reassurance. It made loss visible, tangible, and emotionally heavy. Awareness of absence, as much as presence, shaped farmers' relationships with their land and their sense of responsibility toward it.

Other participants described how changing their practices to align more closely with ecological processes could provoke feelings of isolation from their peers. PFL10 (male, upland mixed farmer, Scotland) noted:

"You do sometimes feel like you're out on your own. You're doing things a bit differently, and not everyone sees it the same way."

Choosing to slow down, leave fields untidy, or allow land to rest often ran counter to local expectations of neatness, order, and visible productivity. Farmers risked being seen as negligent, eccentric, or naive, and this social friction could produce self-doubt, anxiety, or a sense of being misunderstood within their communities.

There were also personal risks involved in investing emotionally in ecological outcomes that remained, by their nature, unpredictable. NYM6 (male, upland sheep farmer) described how restoring riparian habitats brought joy, but also carried emotional stakes:

"You can do everything right and still lose it, one big flood, and the bank's gone again. You have to be willing to take that hit."

This comment captures a deeper truth: reconnection is an act of trust in systems that remain, ultimately, beyond full human control. It requires emotional resilience to accept uncertainty, disturbance, and the potential for disappointment even after careful and respectful management.

Several farmers also spoke about the fear of failure, that despite their best intentions, their efforts might not succeed or be enough to counter wider environmental and climatic pressures. PFL2 (male, upland beef farmer in the north of England) voiced this unease:

"You do wonder sometimes if all this, if it's all too little, too late. But you can't let that stop you. You have to start somewhere."

Here, hope and doubt coexist, illustrating the emotional complexity of farming for ecological regeneration in the face of systemic degradation.

Finally, participants touched on the emotional burden of representing change, particularly those more publicly involved in discussions around agroecology or regenerative agriculture. NYM10 (male, mixed farmer) reflected:

"It's a lot, trying to convince people you're not just chasing a fad... that you're serious about making this work long-term."

For these farmers, reconnecting with nature was not just a private journey but a public performance, carrying risks of scrutiny, criticism, and emotional exhaustion.

Together, these accounts reveal that reconnection is not emotionally neutral. It is a transformative but also precarious process, requiring farmers to reframe not only their relationships with land and life, but also their relationships with risk, community, and self-expectation.

Recognising the emotional risks of reconnecting is vital for understanding the full complexity of transition. Without acknowledging the vulnerabilities it exposes such as grief, isolation or uncertainty, we risk romanticising what is a courageous and often difficult renegotiation of farming identities and futures.

Together, these insights illustrate how emotions are not peripheral to reconnection, they are central. They mediate relationships with place, shape ethical commitments, and influence practical decisions. Within the re-connect framework, emotional ecology represents a form of knowledge, not in opposition to reason, but as its partner, a way of feeling one's way into better care, better understanding, and better farming.

6.2.4 Working Landscapes and Non-Human Agency

A key pattern emerging across the interviews was farmers' growing recognition that their landscapes are not passive resources to be extracted from, but active, living systems, characterised by agency, complexity, and self-organisation. Farms and the landscapes within which they were situated, were characterised as being alive with ecological processes, non-human actors, and feedback loops that demand observation, respect, and negotiation. For many, reconnection involved shifting away from command-and-control approaches and

prescriptive processes, instead working with the agency of land, weather, plants, animals, and soil organisms.

Participants spoke frequently of the land itself as an active partner. NYM8 (male, upland sheep farmer) summarised this relationship succinctly:

“The land tells you what to do, if you’re listening. You can’t just plough it every year and expect it to be happy. You have to plan for rest, recovery, put something back in. It can’t be take take take, year after year.”

Others expanded on how this responsiveness required humility and adaptability. PFL1 (male, upland beef farmer in the north of England) described stepping back from tightly managed pasture rotations to allow spontaneous self-seeding:

“The soil wants to heal itself if you let it. The plants know what they’re doing better than I do most of the time, so we give them the space and the time to recover. We’ve stopped trying to control absolutely everything.”

This idea, that the farm ecosystem possesses its own intelligence, rhythms, and preferences, signals a major departure from earlier models of linear production planning, where outcomes were assumed to be primarily the result of human input and technological intervention. In traditional paradigms, farming was often framed as a process of imposing order on a recalcitrant natural world, where the role of the farmer was to control pests, manage soil chemistry and engineer uniformity in the landscape to enable efficiency. By contrast, the participants in this study increasingly described ecosystems as dynamic agents with capacities for self-organisation, adaptation, and even self-repair. Within this reconfigured relationship, farmers are repositioned not as directors imposing predetermined plans, but as facilitators or stewards, attuned to ecological signals and willing to adjust their actions in response to emergent conditions. Success in this framing, derives not from maximising extraction or predictability, but from fostering resilience, diversity, and ecological expression. Participants expressed the need to accept a degree of unpredictability as an inherent and valuable feature of a living system. Soil was often named explicitly as a living, active system. NN5 (male, lowland arable farm manager) articulated this shift clearly when discussing his change in soil management focus:

“We’re not organic, but we’re focusing on soil health being the primary changer for what we’re doing... Everything we do comes from the soil.”

Treating soil as an active participant, as a living community rather than an inert substrate, led to substantial shifts in how fertility, productivity, and resilience were conceptualised and pursued. Reductions in synthetic fertilisers, increased use of cover crops, and the prioritisation of biological cycles over chemical interventions were all cited as responses to this shift in perception and application of care practices to ensure soil health.

Recognition of animal and wildlife agency also emerged strongly. HM5 (male, lowland mixed farmer) shared a vivid moment of ecological feedback when moving cattle through tall grass:

“All the flies and moths got up, then the swallows and the house martins came swooping in. It seemed like hundreds, all there eating the flies. We’ve not had eye problems or mush mastitis at all since we changed the grazing, I think all the animals are better for it, it sort of, sorts itself out.”

Here, insects and birds are not background scenery; they are active participants in a functioning agroecosystem. Management choices (in this case, rotational grazing and reduced chemical use) created conditions that allowed ecological agency to flourish, providing natural pest control and signalling system health.

Other participants spoke of wildlife returning as independent agents responding to habitat improvements. This was perceived as ecological feedback, a form of communication signalling the health or degradation of the wider system, and the response of more-than-human actors to changes on farm. PFL1 (male, upland beef farmer in the north of England) described how extending grazing periods into winter allowed them to notice unexpected patterns:

“The starlings and peewits were following the cattle through the fields. Maybe they were always there; I just wasn’t seeing them before because I wasn’t out with the cattle every day like this.”

This increased visibility of wildlife, linked directly to farm management, reinforced the idea that the landscape was responding actively to human restraint and adaptation. In this instance, perhaps it was the opportunity to notice more as a result of changing grazing

practices, or maybe the presence of wildlife was in direct response to that grazing management. The premise here is that wildlife is read by farmers, contributing to a feedback-rich relationship rather than an incidental observation.

Climate and weather were also framed as uncontrollable agents that farmers must negotiate with rather than master. NYM10 (male, mixed farmer) reflected on failures with direct drilling:

“We thought changing the machinery would fix [the soil]. But nature’s got its own pace. We had to back off and let it find its way.”

Such experiences revealed the limits of human control and the necessity of working with ecological processes rather than forcing change prematurely. This recognition fostered new strategies based on timing, observation, and opportunistic flexibility rather than rigid planning. Moreover, several participants highlighted how human management often needs to yield to ecological processes for long-term success. NN5 (male, lowland arable farm manager) spoke of how collaborating with an on-farm ecologist reshaped his approach:

“We’re working together to improve any schemes we have to increase biodiversity... but the biggest driver now is soil health. If we get the soil right, everything else follows.”

Agency here is layered, the soil acts, the ecologist advises, the farmer facilitates, resulting in an interconnected, multi-species collaboration across the landscape.

Importantly, the recognition of non-human agency was not idealised. Participants were pragmatic about the fact that ecological agency could sometimes be disruptive or inconvenient. NYM2 (male, upland beef and sheep farmer), reflecting on balancing high sheep numbers with wader conservation, observed:

“We want all the wildlife here... but at the end of the day, the sheep pay the bills, so I’ve had to change how I manage them, rather than think about reducing their numbers.”

This tension underscores that acknowledging non-human agency does not erase economic realities, but it can complicate them, introducing competing ethical and practical considerations into decision-making.

Across the interviews, farmers increasingly described their landscapes as working systems animated by and through more-than-human forces. They spoke of soil as a collaborator, wildlife as a signaller, climate as a constraint, and plants as autonomous actors with their own rhythms of regeneration and response. Recognising and respecting this agency demanded new forms of observation, flexibility, and moral imagination.

This recognition of non-human agency represents a profound shift, from managing land as a resource to relating to land as a co-creator (Figure 6.8). It signals the emergence of farming practices grounded not only in technical expertise, but in ecological dialogue, responsiveness, and humility, qualities that many participants suggested would be critical to building genuinely sustainable, resilient agricultural futures.



Figure 6.8 NN6 farming in squares, using payment schemes to create squared off productive arable areas, surrounded by habitat and other nature options

6.2.5 Seasonality, Cycles and Ecological Time

Another strong thread across the interviews was the way farmers described their relationship with time. This was not explicitly explored through the questions but was frequently alluded to in answers and wider participant reflections to their farming process. For participants, time was not considered so much as a linear, production-driven schedule, but as an experience shaped by natural cycles, seasons, and ecological rhythms. For many, re-connection with nature involved re-synchronising their work with the patterns of growth,

decay, migration, and climatic fluctuation. Time, in this context, was not simply a constraint, instead it became a medium through which farmers connected more deeply to the more-than-human world.

Participants spoke often about thinking in seasons rather than in months or quarters, allowing ecological indicators rather than calendar dates or market demands to guide management decisions. NYM2 (male, upland beef and sheep farmer) captured this shift when describing lambing in unpredictable upland weather:

“You can put a date on a piece of paper, but the ewes and the weather will tell you if you’ve got it right. You can’t force spring.”

This recognition of ecological pacing contrasted sharply with more industrial models of farming, where productivity schedules are rigid and often detached from environmental variation. NYM2’s account reveals how seasonality demands flexibility, prioritising an ability to wait, adjust, and sometimes accept losses rather than push against ecological thresholds.

Other participants described how immersion in seasonal cycles fostered emotional recalibration. NYM9 (female, upland sheep farmer), reflecting on late frosts and the slow re-emergence of meadow flowers, observed:

“You can get frustrated, but then you realise, it’s not up to you. You’re part of it, not the boss of it.”

The humility of recognising oneself as a participant within seasonal dynamics rather than as their orchestrator was a recurrent feature of how farmers framed their relationship to the land. The frustration at delayed sowing or lower growth was balanced by a growing appreciation of the intrinsic timing of ecological processes and that in the long run, being guided by these seasonal dynamics would lead to greater resilience in a changing climate with market volatility. Reflecting this, several farmers linked their increasing patience and willingness to adjust to experiences of drought and rainfall variability. NN6 (female, lowland arable farmer) described how a succession of dry summers had forced them to rethink grazing strategies, forage planting, and stock levels:

“It’s a longer game now. You’re not just planning for this year, you’re watching what the seasons are telling you about next year too. It’s playing the long game, farming in decades not in months.”

Climate variation becomes another agent shaping management rhythms not through crisis-response alone, but through an anticipatory engagement with cyclical patterns and long-term resilience. Tuning into weather patterns beyond the immediate, to longer term climatic shifts and their implications was a recurring theme.

Participants also reflected on how the emotional meaning of seasons shifted as their connection to land deepened. NYM5 (male, upland beef and sheep farmer) described spring as not just a planting season, but as a reaffirmation of hope:

“When you see the first lambs or the first clumps of primroses, it reminds you that it’s worth it. The hard winters, the wet days, it’s part of a cycle, and you’re lucky to see it.”

This sense of gratitude was common. Seasonal change was described not as an outcome of effort, but as a gift or opportunity, something farmers could participate in and had the privilege to experience, but never wholly direct.

The emotional weight of seasonal rhythms was especially visible in discussions about loss and renewal. NYM7 (male, upland beef and sheep farmer) spoke movingly about a hay meadow that had failed during drought, then regenerated spectacularly two years later:

“We thought we’d lost it. It looked dead. But we left it alone, and it came back better than before. Sometimes the land just needs time.”

Such experiences reinforced the idea that resilience often comes not through intervention, but through giving space for natural processes to unfold on their own timescales, even when those timescales challenge human impatience.

Some participants reflected explicitly on how industrial timescales had shaped earlier practices, and how breaking away from these norms allowed for a different kind of farming. NW4 (male, upland dairy farm manager) discussed transitioning from a conventional dairy system to a grass-fed model:

“Before, it was all deadlines, calving windows, service dates, milk contracts. Now it’s more about the grass, the weather, and what the cows are telling you. It feels slower, but it’s better.”

This “slowing down” was not framed as a loss of professionalism or ambition, but as a recalibration toward rhythms that supported ecological and animal health as well as farmer wellbeing.

Participants also noted how observing seasonal patterns fostered long-term thinking, a shift from immediate outputs toward stewardship across decades. NYM6 (male, upland sheep farmer), reflecting on hedge planting and river restoration projects, said:

“You plant a hedge, and you know it’s not for you, really. It’s for whoever comes after. You might never see it finished.”

This attitude of working within cycles that extend beyond individual lifespans marked a profound form of reconnection: aligning farm management not just to market imperatives, but to ecological and generational time.

Taken together, these reflections show how seasonality and ecological time function not merely as backdrops to farming decisions, but as actors influencing those decisions. By embedding themselves within seasonal rhythms and accepting variability farmers were not only managing differently (Figure 6.9); they were transitioning into a new way of being. This new farming ontology allows for them in turn to be more responsive, resilient and more situated within the unfolding life of the land.



Figure 6.9 NYM7 in a successful herbal ley

This engagement with cyclical time represents a fundamental reorientation. It challenges productivist notions of linear progression, constant acceleration and standardisation, and instead invites a relational temporality, one grounded in cycles of renewal, decay, unpredictability, and patience. For the farmers in this study, living with and through these cycles offered not only practical benefits, but emotional and ethical anchoring in an increasingly volatile world.

6.2.6 Stewardship, Responsibility and Legacy

Across the interviews, many farmers articulated a sense of stewardship, a belief that farming is not only about immediate management but about maintaining and improving the land for future generations, both human and more-than-human. This 'ethic of care' (Anthony, 2012) often grounded decision-making, framing farming as a relational practice that extended beyond personal gain toward broader ecological and social responsibility.

For multi-generational farmers, stewardship was frequently connected to inheritance, the idea that they were caretakers within a lineage of land managers. NYM1 (male, upland organic beef and sheep farmer), reflecting on ancient walls and field boundaries, captured this sensibility:

"There's a lot of work went into building that wall... it reminds you someone else put that there for a reason. You want to be someone who leaves something good, not someone who pulls it apart."

This framing positioned farming as a temporal bridge between past efforts and future hopes, instilling a sense of continuity and obligation. Yet this was not a passive inheritance; it

demanded critical engagement with the legacies received, including recognition of past environmental harms and the need for adaptation in a changing climate.

However, the importance of stewardship was not confined to farmers embedded in family traditions. For first-generation and new entrant farmers, the drive to act as stewards often emerged from different sources, from a deliberate choice to farm differently, from ecological values, or from a sense of participating in broader movements for land repair and agri-food system transformation.

PFL7 (female, upland beef farmer in Scotland), a first-generation farmer, articulated this position clearly:

"We've been given this chance to do something. It's not enough just to farm, we have to leave it better."

Legacy is framed not as the maintenance of family lineage, but as a moral and ecological project, a chosen responsibility rather than an inherited duty. For PFL7 and others like them, stewardship was often about disruption as much as continuity, challenging extractive norms, resisting conventional pressures, and demonstrating that farming could be reimagined as a practice of ecological healing. This reframing broadens the meaning of stewardship beyond the heteronormative, patriarchal ideal of passing a farm from father to son. Stewardship becomes an act of ecological citizenship, an ethical stance toward land, community, and future generations, whether or not those future stewards share blood ties.

Participants across all backgrounds spoke to the emotional and ethical weight of this responsibility. NN6 (female, lowland arable farmer) described adjusting grazing practices and planting hedgerows after realising the vulnerability of his soil to extreme weather:

"It's a longer game now. You're not just planning for this year — you're thinking about what's going to be left when you're not here."

Similarly, NYM5 (male, upland beef and sheep farmer), who farmed land his family had worked for generations, linked his identity to the soil beneath his feet:

"You know those fields. You've known them your whole life. You feel it under your feet, you know when it's right and when it's not."

Yet this deeply embodied connection to place was echoed, in a different register, by new entrants like PFL2 (male, upland beef farmer in the north of England), who spoke of falling in love with their farm as adults, choosing it precisely because of its ecological potential:

"It wasn't about the house or the yard. It was the fields, the way the land wanted to work, that pulled us in."

Here again, land connection and stewardship are forged through attentiveness and commitment, not inheritance. These examples show that stewardship is not a static cultural tradition, but a dynamic, evolving practice, available to anyone willing to enter into a reciprocal relationship with land.

Participants also spoke about legacy in broader terms than personal or familial continuity. NYM6 (male, upland sheep farmer) described rewiggling streams and planting corridors for wildlife, not for immediate farm gain, but to "stitch the land back together" across farms and landscapes:

"It's not just your bit of it, it's the whole picture that matters."

This landscape-level thinking reflects a mature form of stewardship, one where responsibility extends beyond property boundaries toward a collective reweaving of ecological health. Farmers also acknowledged that acting on stewardship values often involved difficult trade-offs. NN5 (male, lowland arable farm manager) described resisting the short-term financial temptation to plough species-rich meadows:

"You just don't get that back once it's gone. It's harder to explain that to a bank manager, but you know it's right."

This tension between immediate pressures and long-term commitments surfaced repeatedly. Participants did not romanticise these choices, rather, they acknowledged the practical difficulty of holding ecological and economic imperatives in balance, especially when the economic imperatives were being driven by outside actors who were prioritising immediate gains over longer term resilience.

While multi-generational farmers often spoke with pride about continuity, the interviews also revealed tensions between generations around perceptions of land management, ecological priorities, and definitions of success, particularly regarding how farming should

relate to the natural world. Younger farmers, often more exposed to environmental science, climate discourse, and regenerative approaches through peer networks and education, sometimes found themselves challenging inherited ideas about nature as primarily a resource to be managed.

NYM10 (male, mixed farmer) spoke directly to the friction that could emerge when questioning established norms:

"There's a resistance to change around here. People say, 'It's always been done this way, why change it now?' But the ground's knackered. It can't carry on like that."

Here, the urgency for ecological adaptation was understood not just as technical innovation, but as a response to visible environmental degradation, requiring a shift from extraction to repair and co-existence. Challenging conventional models of farming was often simultaneously an act of re-claiming a different kind of relationship with nature one grounded in stewardship and mutual flourishing rather than dominance and maximisation.

Yet not all generational relationships were marked by conflict. NYM1 (male, upland organic beef and sheep farmer) reflected on a more supportive dynamic, describing how his father's non-farming background had fostered openness to ecological awareness and change:

"My father was a first-generation farmer... he was brought up in Sheffield, involved in the steel industry. He's always been fairly open-minded to change, and that's helped me a lot. The challenge is for me to do the same for my son."

Rather than enforcing rigid continuity, this approach modelled adaptability and attentiveness to nature as key aspects of responsible stewardship, suggesting that legacy is not about preserving static practices, but about cultivating the skills needed to read, respect, and respond to ecological signals across generations.

Despite these differences, many participants viewed intergenerational dialogue as a necessary and hopeful part of re-connection, an adaptive evolution honouring the care of previous generations while recognising the urgent need to farm in ways more responsive to ecological limits and possibilities. The commitment to leaving something better, whether measured in soil carbon, bird numbers, species richness, or simply the feel of the land, emerged as a powerful, consistent theme. Stewardship was described not as a sentimental

ideal, but as a practical ethic of reciprocity, rooted in attention, care, and the hard work of adaptation.

While many participants spoke about stewardship in terms of their own farms and families, several also described a broader sense of responsibility, extending beyond individual boundaries to encompass landscapes, watersheds, and ecological corridors. Reconnection with nature was not confined to private parcels of land; it increasingly involved recognising the farm as part of larger living systems, where meaningful regeneration depended on collective action and shared vision.

NYM4 (male, upland sheep farmer) captured this shift when reflecting on changes in river management:

"You can't fix a river by sorting out your bit and forgetting the rest. It's connected all the way down. If the neighbour's still draining it wrong, it's all wasted."

This understanding of interconnectedness reframed stewardship from an isolated duty to a collaborative, networked responsibility. Farmers could no longer view their management practices as discrete or self-contained; ecological health demanded coordinated stewardship across multiple holdings.

NW3 (male, upland beef, and sheep farmer) offered a parallel reflection, describing efforts to coordinate hedge planting and habitat creation across neighbouring farms:

"There's no point having one perfect farm in the middle of a desert. The wildlife doesn't know where your boundary is, it's why we want to work with our neighbours to plan better, get more strategic about where the hedges and trees could go."

Here, boundaries are recognised as social constructs, not ecological ones. Wildlife, water, soil organisms, and climate processes easily traverse property lines, requiring farmers to think relationally, not proprietarily.

Participants involved in landscape-scale initiatives, such as cluster groups and catchment management partnerships, often described these collaborations as reinforcing their own connection to nature. PFL8 (male, lowland beef and sheep farmer, in Scotland), for instance, reflected on how working with neighbours to restore a wetland deepened his sense of place:

"You realise the landscape's telling one big story, not lots of little ones. We're just a part of it, we need to work with neighbours to make it more connected".

This reframing, from isolated actors to co-authors of ecological narratives, was not always easy. It required building trust, negotiating differing ambitions, and sometimes overcoming historical tensions. Yet it was also described as rewarding, an opportunity to reconnect not only with nature but with community, through shared acts of repair and care.

Importantly, landscape-scale stewardship was not framed as an abdication of individual responsibility. Rather, it demanded a deeper form of attentiveness, one that recognised how soil erosion upstream, pesticide drift next door, or habitat fragmentation across boundaries undermined even the most careful work on any single farm.

This movement toward collaborative, place-based stewardship represents an extension of relational ethics, a recognition that reconnection is not only personal but collective, not only local but landscape-wide. It suggests that the path toward agroecological futures will depend not just on individual reconnection with nature, but on building the social and ecological infrastructures that allow these connections to flourish across scales.

This widening of stewardship narratives is significant. It demonstrates that reconnection is not solely about emotional affinity with place; it is also about adopting long-term responsibilities, whether inherited or chosen, and embedding oneself within a lineage of ecological repair. It suggests that sustainable farming futures will depend not only on maintaining cultural traditions, but also on embracing new, more inclusive visions of legacy, open to all who commit themselves to care, continuity, and co-creation with the land.

Throughout this chapter, the interviews have illustrated that reconnection is not a peripheral or decorative feature of agricultural transition, but a profound restructuring of how farmers relate to the land. Participants described shifts that were not merely technical or managerial, but relational, a movement from seeing the farm as an object of control toward experiencing it as a living, co-creative system.

Farmers reconnected through observation and attunement, developing practices of attention that revealed the agency of soil, plants, animals, and weather. They reconnected through emotional ecologies, allowing feelings of awe, grief, pride, and care to inform and

guide their work. They recognised their landscapes as working communities populated by multiple actors, and they adjusted their farming rhythms to align with seasonal and ecological cycles, embracing patience and humility over speed and extraction.

Critically, participants also expanded the idea of stewardship and legacy beyond traditional models of inheritance. For both multi-generational farmers and first-generation entrants, stewardship became an act of ethical commitment, a promise to the future, irrespective of familial continuity. Legacy was reframed as ecological repair, community resilience, and the fostering of flourishing systems, rather than the mere preservation of assets.

What emerges from this collective narrative is a repatterning of identity. Farmers are no longer simply producers; they become observers, stewards, collaborators, and citizens of more-than-human communities. Reconnection with nature transforms not only what farmers do, but who they understand themselves to be, and how they locate value in their work. In moving toward the next section, Re-structure, it becomes clear that these relational shifts are both enabled and constrained by wider systems. Markets, policies, and infrastructures often remain anchored in extractive logics, linear timeframes, and productivist assumptions. The task ahead is not only to foster personal and cultural reconnection but to reshape the structural conditions that can support and sustain these new relational possibilities.

6.3 Re-Structure

This section addresses the third of Abson et al.'s (2017) deep leverage points for sustainability transformation: re-structuring. This concerns the systems and institutions that underpin dominant paradigms. Where re-think explored shifts in learning, perception, and identity, and re-connect examined relationships between farmers and the more-than-human world, re-structure focuses on the material, institutional, and systemic architectures that shape what is possible, and what is constrained, in the agroecological transition.

Participants in this study were not abstract theorists of structural change, yet through their interactions with policies, subsidy regimes, certification schemes, markets, supply chains, consultants, planning systems, and inherited land structures, they gave voice to everyday encounters with the underlying logics of power, control, and legitimacy. These encounters

revealed that even where farmers had re-thought their approach and reconnected deeply with ecological and ethical priorities, the structures surrounding them were not always configured to support that change. In interviews they spoke of navigating contradictory demands, inflexible rules, or systems that failed to reward care, experimentation, or landscape-based approaches. Some described feeling strategically invisible, their values misaligned with official metrics, or their context too complex to fit within standardised criteria.

At the same time, participants also described ways in which they were proactively re-structuring their own worlds: building new networks, engaging in collective organisation, or imagining alternatives to dominant supply chains and governance models. These efforts suggest that structural change is not only something that must be imposed through top-down imposition. It can also emerge from below and from the side, through collaboration, resistance, and the cultivation of viable alternatives.

In what follows, six thematic sections examine how farmers experience and respond to structural conditions. The first explores the tensions and constraints within agri-environment schemes and policy frameworks. The second looks at certification and market structures, examining both their enabling and exclusionary effects. The third considers how structural conditions shape collaboration, infrastructure, and isolation. The fourth turns to the material politics of land, labour, and access. The fifth explores how some participants are imagining or enacting structural alternatives, new ways of doing and organising that move beyond bureaucratic or market logics, and finally the sixth reviews who holds power.

Taken together, these themes show that without re-structuring, the re-think and re-connect levers risk being short-lived or structurally unsupported. They also reveal that transformation is not just about personal change or ecological alignment; it also depends on the systems and scaffolds that either sustain or erode those shifts over time. This is what enables change to become transformational.

6.3.1 Navigating Bureaucracy and Policy Misalignment

Across the diverse range of farmers interviewed, structural misalignment between public policy and on-the-ground agroecological practice emerged as a major point of friction. Participants voiced frustration not only with the complexity of schemes like Countryside

Stewardship (CSS) and the Sustainable Farming Incentive (SFI), but also with the logic underpinning these interventions, which often failed to recognise the relational, place-based and adaptive nature of their work. While some farmers were pragmatically engaged, others described deep disillusionment, not simply with the schemes themselves, but with what those schemes revealed about how government understands (regenerative) farming.

One of the most consistently cited problems was rigidity: farmers felt that rules intended to encourage sustainable practice often ended up preventing it. NN1 (male, arable farmer) described the disconnect between practical farm management and CSS prescriptions:

“We had a herbal ley under AB15 but weren’t allowed to graze it, even though grazing would have made the system more circular. It made no sense. We’ve got cows ready to go, and we’re not allowed to use the forage that’s growing, instead we have to cut it. It’s a crying shame, a complete waste.”

The implication here is not just inconvenience but a structural contradiction: policy designed to promote soil health and biodiversity undermines those aims by prescribing non-integrated, inflexible approaches. The scheme ignored the systemic logic of the farm as an agroecological whole.

NYM10 (male, mixed farmer) echoed this when discussing field margin prescriptions:

“It’s like they want one-size-fits-all. You’ve got to plant this mix, do it this way, and hope it fits your farm. But that’s not how nature works, and it’s not how farming works either.”

Here, standardisation was framed as a structural flaw, one that misrecognised the ecological diversity of farm landscapes and the knowledge embedded in place-specific systems. This same misfit was also experienced by smaller farms and new entrants, who found the administrative requirements disproportionately burdensome. NYM6 (male, upland sheep farmer) described being overwhelmed by bureaucracy:

“The paperwork alone can take up half your week. Mapping, record keeping, uploading photos to the portal - and then if you get something wrong, you’re penalised.”

This administrative burden did not exist in isolation; it was embedded in a broader structural narrative that rewards compliance over ecological attentiveness. Several participants

reported that the digital infrastructure used to administer schemes, particularly the English RPA portal, was unreliable and opaque. PFL8 (male, lowland beef and sheep farmer, in Scotland) explained:

“You do everything right - reports, field boundaries, all the evidence, then you log in and the application’s disappeared, or they’ve closed the round without notice. It’s exhausting.”

The emotional toll of this bureaucratic uncertainty was also significant. PFL13 (female, upland beef and sheep farmer) reflected on having a Countryside Stewardship Scheme (CSS) application rejected on technical grounds:

“You spend weeks putting it together, trying to make it work for your system and the environment. Then it’s rejected because a field boundary doesn’t match their GIS. It makes you question whether it’s worth it.”

This sense of futility, of ecologically sincere work being blocked by technical rigidity, was demoralising. It also contributed to a broader theme of structural exclusion, whereby those without time, digital access, or technical expertise were effectively pushed out of schemes.

Even among those who succeeded in gaining support, there was often a discrepancy between outcomes and expectations. NN6 (female, lowland arable farmer), who had engaged with both CSS and SFI, noted the contradiction in being paid for actions that didn't necessarily reflect good ecological practice:

“You can tick the boxes, do the buffer strip or the mix, but it doesn’t always lead to better outcomes. You can farm to the scheme, or you can farm to the land, and they’re not always the same thing.”

This highlights a profound structural issue: compliance-based systems reward visibility and legibility, not ecological complexity. Participants repeatedly described how schemes disincentivised observation, adaptation, and innovation, all qualities that are central to agroecological practice.

HM1 (male, lowland beef and sheep farm manager) voiced concern that codifying regenerative agriculture too tightly through payments could reduce it to a static checklist:

“It’s great that regen’s getting recognised, but if it becomes another scheme with a scorecard, we’ll lose what makes it work: flexibility, curiosity, trying stuff out.”

Some farmers also expressed concern about the way schemes consolidate power. NYM9 pointed to a growing reliance on consultants to interpret increasingly complex rulebooks:

“If you can’t afford a consultant, you’re at a disadvantage. You end up farming the forms, not the land.”

This shift, from independent land stewardship to outsourced compliance, was seen as undermining farmers’ autonomy and the value of embodied, local knowledge. Several participants questioned the sincerity of government consultation processes, especially around co-design. NN1 (male, arable farmer) was blunt:

“They call it co-design, but none of the feedback ever seems to get taken on board. You feel like you’re just shouting into a void.”

Yet despite these frustrations, many participants still engaged with schemes strategically. NYM1 (male, upland organic beef and sheep farmer), for example, used CSS funding to support hedgerow and pond restoration, but viewed it primarily as a financial tool:

“I’m glad the money’s there, and it helped us do some good stuff - but the scheme didn’t teach us how to do it better. That came from walking the field, not ticking the box.”

Others were even more sceptical. PFL2 (male, upland beef farmer in the north of England) questioned the logic of schemes that assume a fixed model of good practice:

“It’s like they’ve decided what’s right before they’ve asked what we’re doing. Some of us are already ahead of what they’re paying for.”

This insight reframes the conversation entirely: what if publicly funded government-led schemes are not the drivers of ecological transition, but lagging responders to changes already underway within farming communities?

Across all these accounts, a consistent picture emerges: while public schemes offer necessary financial support, they are structurally misaligned with the complexity, creativity, and context-specific nature of agroecological practice. They incentivise conformity,

undervalue local intelligence, and remain largely insensitive to the uneven capacities of different types of farms.

From a systems perspective, this suggests that transformation will require more than better schemes. It demands a structural overhaul of how governance itself operates, shifting from a model of distant, prescriptive administration toward one that is responsive, relational, and adaptive. Without such change, farmers may continue to engage, but only tactically, and often reluctantly.

Across the diverse cohort of participants, a clear fault line emerged in attitudes toward agricultural subsidy or payment schemes, one shaped not only by farming philosophy, but also by land type, business model, generational position, and structural security. A notable contrast was found between upland and lowland farms, and between new entrants or tenant graziers and more established landowners.

In upland and marginal areas such as the North York Moors, several farmers expressed a deep desire for financial independence from state support, not out of political ideology, but because they found the uncertainty, administrative burden, or philosophical contradictions of subsidy schemes incompatible with their long-term goals. NYM8 (male, upland sheep farmer), farming under a precarious annual agreement, was particularly clear:

“It’s not practical all on one year. Like summer grazing licences, that’s about all that’s practical within a year, isn’t it? There’s no incentive for me to do anything.”

Others, like NYM5 (male, upland beef and sheep farmer), reflected on how tenure security and financial stability altered the calculus entirely:

“Some of these guys don’t want to change, and they’re in a position where they don’t need to... they’ve got savings in the bank and they’re not bothered.”

He noted that younger farmers, with mortgages and families, “need to be more savvy, who need to do things differently.”

In these upland contexts, agility, low overheads, and personal resilience were often seen as preferable to reliance on fluctuating external frameworks. PFL7 (female, upland beef farmer in Scotland), a grazer reliant on multiple land access arrangements, noted they had deliberately avoided subsidy until recently:

“Sometimes the subsidy system and framework isn’t really always set up for agroecology. It’s quite difficult to be responsive when you’re dealing with quite a strict, conventional framework.”

By contrast, lowland farms with larger acreages or stable landownership often spoke with strategic clarity about subsidy integration. These farmers saw agri-environment schemes and grants not as compromises, but as tools that could be actively shaped and leveraged to enhance ecological and business outcomes. NN4 (male, lowland mixed estate owner), operating on mixed arable land in Norfolk, described a pragmatic approach:

“We are HLS. We are SFI. Simple bits of SFI, because that seems a bit of a dog’s breakfast... but that’s where the money is.”

A similar view emerged from NN11 (male, lowland mixed estate owner), who recognised public money for public goods as a structural shift, and one they were well-positioned to embrace:

“We’re looking at landscape recovery, which is going to demand a degree of blended finance between public and private money... Natural capital, social capital, environmental capital...they’re all important.”

The distinction was not simply economic, but cultural and strategic. For some upland farmers, schemes felt like coercive interventions from a centre that neither understood nor valued their context. For others, particularly where land, capital, and confidence were in greater supply, they were an enabling framework for agroecological ambition.

What emerges is a structural asymmetry: those most dependent on policy reform for meaningful change are often the least equipped to engage with its complexities or survive its delays. Meanwhile, those best able to navigate and benefit from subsidy structures often have the least material dependence on them, and often the greatest influence over how they’re shaped.

6.3.2 Certification, Market Access and Alternative Economies

Certification schemes and alternative marketing routes were described by farmers as both promising and problematic. While these structures aim to support agroecological producers by offering recognition, price premiums, and differentiation from conventional supply

chains, many participants found that the on-the-ground realities of market access, logistics, and consumer understanding often fell short. There was strong support in principle for values-based marketing, yet participants frequently pointed to structural mismatches between certification ideals and economic viability.

Several participants were certified by Pasture for Life (Pfl) or organic standards and viewed certification as a helpful tool for building credibility and transparency. PFL10 (male, upland mixed farmer, Scotland) framed their decision to certify as part of a strategy to create accountability and open dialogue with customers:

“For us, it’s about showing customers what we’re doing, and having a standard that means something. It opens the door to conversations and relationships.”

PFL1 (male, upland beef farmer in the north of England) similarly described certification as a means of validating ecological integrity in a crowded and sometimes misleading market:

“It’s nice to be certified because it basically proves I’m doing it. Some people say they are, but they’re not. So, it’s peace of mind for me and my customers.”

However, others questioned the practical return on investment. PFL4 (lowland mixed farmer) noted that while certification was philosophically aligned with their system, it made little difference in terms of pricing or buyer relationships:

“The certification’s there, and we believe in it, but unless you’re selling direct or into a butcher who understands it, it doesn’t change the price you get, and instead is just another cost on the business, another bill to pay with little return on that investment.”

This was a common sentiment among farmers reliant on intermediaries or distant supply chains. Even those working with processors aligned to Pfl found that market leverage was inconsistent, and brand value was often lost in translation. NYM3 (male, upland beef farmer) summarised the tension between ethical labelling and commodity logic:

“You can put all the badges on the label you like, but if the buyer’s buying on price per kilo, it doesn’t make a difference.”

For those attempting to build local or alternative food networks, direct-to-consumer routes emerged as both promising and fraught. NW3 (male, upland beef, and sheep farmer) spoke enthusiastically about meat boxes and the personal connection they enabled:

“It was really, really good feedback. It’s more rewarding, both financially and personally... You know where the animal’s gone, what it’s eaten, and the person eating it tells you it was great. That doesn’t happen with supermarkets.”

PFL8 (male, lowland beef and sheep farmer, in Scotland) similarly highlighted the relational and ethical dimensions of local marketing:

“We’re not chasing volume. We’re building something we can be proud of, where the money stays close to the land and the story is part of the product.”

However, participants were clear that building these alternative markets required significant time, labour, and skill. NYM2 (male, upland beef and sheep farmer) acknowledged the barriers:

“It’s great if you’ve got the people and the network. But if you’re remote or busy or not into social media, it’s hard to make it work.”

In some regions, geography and infrastructure actively worked against alternative systems. HM2 (male, upland beef, sheep and pig farmer) shared ambitions to build a regional food brand, “Black Mountains Beef”, but admitted it struggled to gain traction:

“There’s just not enough local demand here to make that work, unless we’re all sending stuff halfway across the country, and then what’s the point?”.

This was compounded by the loss of small abattoirs, lack of cold storage, and long travel times to processors, as described by NN5 (male, lowland arable farm manager) and others. These structural absences left some farmers dependent on conventional routes despite ecological commitments.

Certification itself was often experienced as administratively burdensome. PFL6 (Male, lowland mixed farmer in Scotland) described the duplication and inconsistency involved in holding multiple accreditations:

“You end up doing the same thing three different ways to satisfy three different people. It’s not about farming better, it’s about ticking boxes.”

Some questioned whether certification was even necessary in direct sales contexts. PFL2 (male, upland beef farmer in the north of England) argued that trust and visibility did more than a label ever could:

“When customers see the farm, meet the animals, and talk to us, that’s worth more than any sticker. It’s the relationship that matters.”

This shift toward relational economies, based on trust, place, and story, was a recurring theme. It reflects a desire to restructure the agri-food system away from anonymous commodity chains and toward more localised, embedded systems of value. But the limitations of these systems were also acknowledged. Selling direct required customer education, continuity of supply, and confidence in managing logistics. NW1 (lowland dairy farmer) candidly admitted:

“I love the connection, but the admin is a nightmare. Emails, packaging, drop-offs, it’s a job in itself.”

Still, some farmers found ways to make alternative systems work by building new cooperative or hybrid structures. NN4 (male, lowland mixed estate owner) spoke about their joint irrigation venture as a model for shared infrastructure investment that could also apply to marketing:

“It’s a limited liability partnership between us and two neighbours... we all bring very different things to the party. But it’s a huge form of strength.”

Others warned about the growing proliferation and commodification of “regenerative” branding, questioning whether emerging labels would simply reproduce the problems of earlier certification schemes. NYM4 (male, upland sheep farmer) expressed hesitancy:

“Everyone’s coming up with their own version of ‘regen’. It’s like the wild west out there. I’m not sure who to trust, and I don’t want to sign up for something that turns out to be greenwash.”

At the heart of these reflections is a tension: certification and markets can legitimise and reward ecological practice, but they can also replicate the structural exclusions of conventional systems such as centralised control, administrative complexity, and external definitions of value.

Across the interviews, farmers voiced consistent frustration at being tethered to market systems that prioritise scale, homogeneity, and low price points over ecological integrity or farming system diversity. While some participants were experimenting with or transitioning to alternative market channels, many still found themselves structurally locked into dominant supply chains. These systems, they argued, reinforced the very forms of agriculture that many were actively trying to move away from, especially input-intensive, commodity-driven models.

NW2 (male, upland dairy and sheep farmer) described this bind clearly:

“Everybody does the same thing, sells to the same supermarkets... you get caught in a bit of a trap. You’ve got no other options and you’ve got a mortgage to pay and this at least pays an income.”

Here, market conformity is not ideological but existential, shaped by financial obligations, limited local alternatives, and risk aversion. This entrapment was echoed by NN8 (male, lowland mixed farmer), who, despite efforts to innovate, found market categorisations obstructive:

“When you have these blends, you end up by sort of limiting your market... We grow malted barley, and that’s all got to be the same thing. There’s no room for experimentation there.”

Even those selling direct encountered barriers. HM2 (male, upland beef, sheep and pig farmer) noted that although direct sales were more rewarding, they were constrained by geography, affluence, and consumer expectations:

“We’re not in the Cotswolds where people can just decide not to buy from the supermarket... we’re busy, and the margins are tight. So setting up that localised supply chain feels out of reach.”

Participants often linked these constraints to systemic economic pressures. NN10 (male, lowland sheep and dairy farmer) warned that the dominance of supermarket and processor models devalues ecological or ethical production by flattening all outputs into undifferentiated commodities:

“The system rewards scale, not care. Doesn’t matter how you’ve done it, if the spec’s met, you’re in. If not, you’re out.”

Others, like NYM10 (male, mixed farmer), highlighted the boom-and-bust volatility of market cycles and the pressures these placed particularly on intensive dairy farms:

“One minute they’ve got money to burn, the next it’s a disaster... you’re at the mercy of it, and it’s narrowing the system down into more intensive models.”

What emerges is a picture of systemic contradiction: farmers seeking to farm regeneratively find themselves structurally penalised by the very markets that reward scale and standardisation. While some are carving out new paths through direct sales, community-supported models, or certification schemes, these often require parallel infrastructures, from abattoirs to distribution networks, that remain chronically underdeveloped.

In this context, the transition to agroecology is not simply a matter of knowledge or values. It is, as several participants implied, an infrastructural and political question, one that requires rethinking who gets to shape markets, who they serve, and what kind of farming they reward.

From a systems perspective, the challenge is to restructure markets so they are capable of holding nuance, diversity, and relational accountability. This may mean shifting emphasis away from certifying practice toward supporting farmer-consumer relationships, building enabling infrastructure, and valuing transparency and care over scale and uniformity.

The work of restructuring markets is already underway, in meat boxes, local charcuterie, pub partnerships, and CSA models. But as many participants made clear, these innovations remain fragile, time-intensive, and unevenly supported. Without public investment in infrastructure and policy frameworks that nurture local food economies, the burden of market transformation will continue to fall on those least resourced to bear it.

6.3.3 Structural Conditions for Isolation or Collaboration

Although farming is often imagined as a solitary pursuit, many participants revealed that this isolation is not simply a personal choice or cultural norm, but a structural condition, a by-product of how agricultural systems, land tenure, and advisory services have been historically organised. Participants across all cohorts spoke of the ways institutional arrangements, geographic dispersal, market structures, and labour models have combined to create or reinforce isolation. At the same time, these structural conditions were being actively resisted and reimagined through the formation of peer networks, learning groups, and localised infrastructure, marking a crucial frontier for systemic transformation.

One striking example came from the North Norfolk cohort, where collaboration had moved beyond shared ideas into formal operational partnerships. NN4 (male, lowland mixed estate owner) described how he and two neighbouring farmers had formed a limited liability partnership to jointly manage irrigation infrastructure:

“Our irrigation business: that’s a cooperative, collaborative effort between us and two neighbours. It’s a huge form of strength. We all bring different things to the party. That’s probably led to things like landscape recovery, so it’s becoming more of the everyday life, and so it should.”

This arrangement went beyond cost-saving or efficiency. It was described as a foundation for longer-term landscape-scale planning and a relational structure that fostered mutual accountability, diversification, and innovation. In this way, operational collaboration acted as a kind of infrastructure for cultural and environmental shift, enabling change that would have been too complex or risky for any one business alone.

Similar dynamics were evident in the evolution of the North Norfolk Coastal Cluster, where NN2 (female, lowland beef grazier) described the creation of compost clubs and seed hubs, informal sub-groups nested within a wider landscape partnership:

“We’re setting up smaller groups within the cluster. A compost club where people are making their own compost, and seed hubs for harvesting wildflower seeds to share with neighbours. There’s lots of ambition, from tweaking margins to rewiggling rivers.”

These examples reflect not just knowledge-sharing, but joint experimentation, shared ecological goals, and community-based infrastructure building. In both cases, farmers were proactively constructing systems of support that combined operational collaboration with ecological intent. These are not just workarounds, they are grassroots structural innovations, grounded in relationships and responsive to place. These were described as more flexible, accessible, and responsive than national schemes or one-size-fits-all consultancy. NN2 was clear:

“Conventional advice doesn’t suit everyone; smaller groups within clusters are more effective.”

This insight points to a critical function of decentralised collectivisation, the ability to innovate structurally, not just technically.

Isolation, particularly social and emotional, was described as one of the most enduring features of conventional farming structures. Several participants noted that legacy systems of land management had historically discouraged collaboration. NN7 (male, lowland dairy farmer) reflected that “farmers are an introspective bunch,” suggesting that farming had long been “our own little fiefdom.” Yet they also noted that this mentality was beginning to shift:

“There’s now a necessity to collaborate... to reduce costs, to share ideas. That old way doesn’t work anymore.”

The shift here is from autonomy as a form of pride to collective working as a form of resilience.

The transition from solitary to collective practice was most often catalysed not by external mandates, but by necessity, economic pressure, ecological uncertainty, or the desire for innovation. For example, HM3 (male, lowland beef and sheep) explained that the emotional toll of farming alone, particularly when trying something new, could be significant:

“If your peer group thinks you’re a bit crazy, then you’re more likely to hold back... but if you can find others doing similar things successfully, it helps you make bolder decisions.”

Here, structural isolation impedes change, while collective environments help legitimise and enable experimentation.

This collective turn was often expressed through membership in farmer clusters, WhatsApp groups, seed co-ops, or grazing groups. The North Wales cohort described how these informal networks had become indispensable not just for learning but for morale. NW2 (male, upland dairy and sheep farmer) stated:

“It’s not just about learning; it’s also about knowing you’re not alone in facing these challenges and having other farmers to call on when you need help, like practical help borrowing a stock trailer or an extra pair of hands when your staff don’t come in. We all help each other out”.

In this case, the informal support network became vital infrastructure, stepping in where formal services were either absent or untrusted.

Pasture for Life members echoed this, emphasising the importance of relational infrastructure, connections forged through discussion groups, webinars, or field days. As already explored previously, farmers described the PFL webinars during COVID as “a lifeline,” revealing how systemic disruptions (like lockdown) underscored the importance of maintaining social and learning infrastructure in digital as well as analogue spaces.

Notably, collective working was not always uniformly accessible. Upland farmers, new entrants, and those farming in more remote areas described unique barriers. HM2 (male, upland beef, sheep and pig farmer), a first-generation farmer, pointed out that without a family knowledge base, peer groups became a kind of “cultural memory bank”.

In this context, structural isolation is not just about geography, but about inheritance and entry, who has access to informal mentorship and who must construct it from scratch. This idea, that distributed trial and error provides a kind of shared risk mitigation, was echoed by NN8 (male, lowland mixed farmer), who described actively seeking out the wisdom of neighbours to avoid repeating errors:

“I need to try and pick his brains, I don’t want to make the same mistakes he’s done. I’m of an age I haven’t got so many years down the road to spend five years messing around”.

The temporal dimension here is especially revealing: older farmers sought to maximise remaining time by reducing inefficiency, while newer farmers like HM2 relied on collective memory to fast-track competence. PFL7 (female, upland beef farmer in Scotland) had expressed almost exactly the same idea (as referenced already in this chapter), that “if 15 farmers in a group each make one mistake, that’s 15 years’ worth of learning.” Together, these statements signal a widespread appreciation of mistake-sharing as a vital form of knowledge, legitimising failure as not just inevitable but socially valuable within collaborative agroecological transitions, which only has impact through shifting the structures access to knowledge, enabling collaboration and social connection.

Digital platforms helped overcome some of these structural barriers, but not all. WhatsApp was widely cited as a transformative tool, offering immediacy, intimacy, and informality. NW2 (male, upland dairy and sheep farmer) noted:

“I can send a picture in the morning and get a dozen ideas back by lunchtime.”

Yet this wasn’t merely about speed, it was about lowering the psychological threshold for asking questions. As NW3 reflected, “Just knowing others were facing the same questions made it easier to keep going.” For those operating in isolated or experimental spaces, collective validation was as important as technical advice.

That said, collective practice and working was not without friction. NN4 (male, lowland mixed estate owner) described how sitting around a table with other farmers sometimes revealed unexpected divergence:

“You think you know their business... and then they surprise you.”

While such encounters could be unsettling, they also opened up space for critical dialogue — another key element of structural resilience. As NW4 (male, upland dairy farm manager) put it,

“There’s no recipe, and we shouldn’t pretend there is. That’s why the discussions matter.”

In many of these examples, structural change was not about entirely replacing systems but augmenting them with relational infrastructure. Peer-led initiatives, cluster groups, and discussion forums offered not only knowledge but legitimacy, belonging, and psychological

safety. They also created a different kind of decision-making space, one shaped by reciprocity and shared challenge, rather than compliance and hierarchy.

Finally, several participants made clear that such collective arrangements should not be romanticised. NYM5 (male, upland beef and sheep farmer), for example, spoke about the emotional difficulty of exposing their decisions to peer scrutiny, especially when deviating from local norms.

“You’re still judged sometimes. Not everyone sees change as a good thing.”

And yet, they also described the transformative power of even one or two trusted allies:

“You don’t need a huge network. Just one person who gets it can make all the difference.”

These stories reveal that structural isolation in farming is not inevitable, it is shaped by institutional gaps, cultural legacies, and economic constraints. But they also show that collective practice and collaboration, where it emerges, is powerful and deeply desired. Farmers are building new forms of infrastructure, digital, social, and emotional, to close the gaps left by existing systems. In doing so, they are not just alleviating loneliness but reconfiguring the very structures that shape how knowledge, risk, and resilience circulate within agriculture.

6.3.4 Land Tenure, Ownership and Structural Constraints

Across the diverse farming contexts represented by participants, land tenure emerged as a defining structural factor, shaping not only farmers’ capacity for change but also their psychological orientation to risk, long-term planning, and environmental stewardship. While often rendered invisible in policy discourse or sustainability narratives, the realities of ownership and tenancy powerfully influenced how, why, and whether farmers could engage in agroecological practices.

Tenants frequently described a disjuncture between ecological ambition and structural possibility. NYM3 (male, upland beef farmer) captured this vividly when reflecting on the risk of tree planting:

“None of us know where we stand on making any investment. How can we go ahead and put a grant in for a £50,000 slurry store within a year or two years if we’re going to be forced off because of a tree planting?”

The backdrop to this was a case in North Yorkshire where tenant farmers had been issued notices to quit following landlords’ decisions to repurpose tenanted land for tree planting. This created a chilling effect, an atmosphere of structural uncertainty that halted ecological investment, even in cases where the farmer was willing and able.

Even short-term, routine improvements, such as hedgerow reinstatement, became contentious. NYM10 (male, mixed farmer) explained that funding schemes often mandated double fencing and costly specifications out of sync with his ecological knowledge and management system:

“I found out over the years... just a single row of plants looks just as good. And the beauty of this system is cattle can graze under the fence, they can strip the grass out. That allows little plants and flowers to grow.”

What emerges is a structural mismatch, schemes designed with a one-size-fits-all mentality impose unnecessary barriers to creativity and context-specific solutions. Farmers like NYM3 and NYM10 found themselves excluded from both environmental and infrastructural upgrades because tenancy offered no long-term security and policy design lacked flexibility.

This insecurity was not just economic; it was deeply personal. NYM8 (male, upland sheep farmer) reflected on how the financial burden of rent, compounded by the lack of control over land use, created a strong incentive to pursue financial return over environmental benefit:

“It's just difficult to justify doing something for nature if it's just following Higher Tier. Sounds a bit ruthless, but... it just comes back to the rent bit all the time.”

In contrast, owner-occupiers, particularly larger lowland landowners, spoke with more certainty about pursuing public money or long-term ecological projects. NN4 (male, lowland mixed estate owner) described a deliberate strategy of taking “marginal land” out of production and putting it into ecologically based services, directly linking this to the farm’s structural security:

“We have some pretty rubbish land here, and therefore... putting it into things that are going to be naturally more beneficial is where I see us going.”

This capacity to reallocate land toward non-agricultural output ends, whether tree planting, habitat creation, or “safe to fail” regenerative transition experiments, was almost always tied to ownership. NW4 (male, upland dairy farm manager) similarly described how the landowner’s long-standing commitment to tree planting and biodiversity underpinned significant nature-focused investment, despite a lack of reinvestment in built infrastructure:

“There’s been no money spare to put into building infrastructure... but a lot of money has been put into more natural infrastructure and habitat.”

Such cases demonstrate that ownership is not just a legal structure, it is a precondition for making decisions that privilege long-term ecological gain over short-term financial certainty.

Several members of the Pasture for Life (PFL) cohort highlighted how constraints around land access and tenure shape their ability to farm regeneratively. PFL6 (male, lowland mixed farmer in Scotland), for example, described the importance of flexibility in land management and voiced concerns about how policy frameworks and public access expectations in Scotland could undermine the environmental intentions of landowners. This participant noted that while engagement with nature and biodiversity was central to their work, the political focus on tourism and external visibility risked adding pressure rather than enabling support. Meanwhile, the challenges of policy being shaped “for” rather than “with” farmers were echoed across multiple PFL interviews, especially with participants expressing frustration with prescriptions that didn’t match context-specific knowledge. One farmer described an issue with the rigidity of stewardship schemes that forced them to remove hedgerows from the scheme in order to manage them more effectively:

“We took them out so that we had flexibility, they wanted us to cut them on a tight timetable, but we wanted years to let them grow and take our cue from nature and the weather, not from the scheme”.

This emphasises how nuanced management often clashed with top-down constraints. These experiences reinforce the idea that structural barriers are not limited to land ownership

alone but include policy and certification frameworks that fail to accommodate the situated knowledge of farmers.

The implications extend beyond tenancy per se. Several participants spoke of informal arrangements or multi-landowner collaborations where misalignment of values could stymie progress. In one North Norfolk case, even where conservation ambitions existed on all sides, differences in land access and expectations made coordinating land use changes, like riparian restoration, challenging. Meanwhile, in North Wales, multiple cohort members described frustrations with landlords or agencies blocking ecological improvements due to outdated views or bureaucratic hurdles.

Yet ownership did not always equate to freedom. NN11 (male, lowland mixed estate owner), an owner-occupier, spoke passionately about the psychological legacy of land ownership, describing a generational “proprietary aggression” that discouraged openness to public access or collaborative conservation:

“It was a colossal waste of time... this proprietary sort of aggression... you drive around growling at people. And I slightly inherited it. But just to allow oneself to come away from it... encourage people a bit, it’s hard.”

This reflection reminds us that structural barriers are not only external, they are also cultural and emotional, woven into the affective histories of farming families and landscapes.

Despite these tensions, several farmers were actively working to overcome these constraints. NYM6 (male, upland sheep farmer), for example, described how he and neighbouring farms had begun to coordinate habitat corridors and watercourse restoration across land boundaries, even where ownership and tenancy varied. In this way, structural constraints were not determinative but shaped the terrain of possibility, a terrain some farmers were determined to reshape through collaboration, peer support, and ecological ambition.

6.3.5 Structural Alternatives – New Infrastructures for Agroecological Transition

While many participants expressed frustration with dominant supply chains and regulatory frameworks, there was also an emergent, hopeful narrative, one rooted in the construction of alternative infrastructures for food, finance, and governance. Farmers were not merely

adjusting their practices to suit external systems; in some cases, they were building new ones entirely.

This took many forms. For some, it meant reshaping supply chains to localise agri-food systems and reconnect consumers with producers. PFL7 (female, upland beef farmer in Scotland) explained how their decision to raise cattle rather than sheep in the Scottish Highlands was a conscious attempt to ensure alignment with local dietary preferences and regional food sovereignty:

“Not many people in Scotland eat lamb or hogget... So for us, nourishing local people and the local food system is really important, it’s why we chose cattle so we could produce beef and sell more of it locally rather than sending it all south.”

Selling direct to customers was described not only as an economic strategy but also as a structural intervention, bypassing anonymous, extractive market chains in favour of trust-based relationships. As PFL7 added,

“Selling directly to customers, rather than into a commodified supply chain, is another way of engaging with food sovereignty... Food loses its meaning along the way, and farmers are not seen.”

For others, structural alternatives emerged through collaboration, formal and informal. NN4 (male, lowland mixed estate owner) described their irrigation cooperative as a “source of strength,” which not only enabled shared resource management but also catalysed broader engagement with landscape recovery initiatives. They reflected,

“We all bring different things to the party... It’s becoming more of the everyday life. And so it should.”

Such collaborations weren’t just pragmatic responses to input costs, they were deliberate acts of governance, where farmers took collective responsibility for infrastructure that otherwise would have been fragmented or imposed. These forms of shared ownership and decentralised coordination represent a critical move toward structural autonomy. The sharing of equipment and labour was cited by almost every participant when articulating their response to structural issues that reduced access to those resources, farmers are, and have been for centuries, collaborating to enable success. Participants talk about his as

historically being a normal part of rural life, a reflection of reciprocity and community cohesion, which has evolved particularly to be enacted in spite of governance and market structures that drive separation and individualism.

In Herefordshire, discussions emerged around creating a regional meat brand rooted in local grazing systems and conservation values. While still aspirational, HM2 articulated the potential for this kind of structural innovation, recognising the challenge of scale but seeing value in “a localised supply chain specific to our business”. Their hesitation, however, was also telling, fears around insufficient local demand and the labour burden of establishing such systems were persistent structural barriers.

Similarly, in Norfolk, NN5 (male, lowland arable farm manager) described how farm clusters had begun exploring decentralised solutions such as seed hubs and composting groups. These were not just technical innovations; they were governance structures in miniature, challenging the one-size-fits-all logic of national schemes:

“There’s no point in advice that’s aimed at everyone. It doesn’t fit. The compost group works because it’s built for us, by us.”

These bottom-up structures, cooperatives, seed banks, meat hubs, informal trial networks, constitute a critical counterpoint to the dominant models of agricultural knowledge, finance, and trade. They foreground place-based governance, peer trust, and resilience over scale or efficiency.

At the same time, participants were acutely aware that these alternatives often exist in marginal spaces, under-resourced and under-recognised. As PFL12 (female, upland beef and sheep farmer) observed,

“There’s energy and ideas, but not the infrastructure. We need investment in networks, not just markets.”

Others echoed the need for structural support to grow what’s already working. NN2 (female, lowland beef grazer) framed their cluster’s success in terms of adaptability and ownership:

“Because we made it ourselves, we trust it more. It’s built on what we need, not what someone else thinks we should do.”

Ultimately, this theme demonstrates that structural transformation is not just a matter of critique, it is a practice already underway. Across geographies and farm types, farmers are inventing and inhabiting new models of cooperation, exchange, and decision-making. These are not just alternatives; they are prototypes for future agri-food systems grounded in historic ideas of community and current practices of fairness, place, and ecological care.

6.3.6 Powerful Voices and Who Sets the Rules

Across all cohorts, there was a palpable sense that farmers often feel peripheral to the structures that govern their work. From policy formation to certification schemes, consultancy models to supply chain expectations, participants repeatedly described themselves as having to comply with externally imposed norms and rules. In this dynamic, power sits not with those on the land, but with those who design schemes, control information, and/or hold market leverage.

A recurring critique, as already been explored, was the prescriptive and inflexible nature of top-down agri-environment schemes, creating a sense of having to contort practice to match bureaucratic categories, rather than adapting schemes to fit agroecological complexity. This was a source of deep frustration, especially in more marginal upland settings. NW3 (male, upland beef, and sheep farmer) voiced scepticism about distant decision-making:

“If they can listen to us and develop a scheme around that, it’s going to be really successful. Whether they’ll be allowed to develop it is another question. Because it always goes back to people higher up than us”.

Farmers were not simply asking for tweaks to existing systems but called into question the underlying assumption that those furthest from the field are best placed to design its rules. The language of powerlessness, frustration and distance was especially clear in discussions around changing subsidy regimes. NN8 (male, lowland mixed farmer) described the shift from Basic Payment to new schemes as driven by “politicians who don’t understand the basics” and who seem “incredulous” about the consequences of removing support from food-producing farms without aligning policy aims with market realities.

This dislocation was not only felt in policy but in market relationships. Several farmers described feeling constrained by buyers or processors who dictated pricing structures,

quality standards, or variety choices with little scope for negotiation. As NN11 (male, lowland mixed estate owner) explained,

“The real issue is that farmers aren’t the ones setting the terms. You’re just at the bottom of the chain, taking what you’re given.”

This often meant having to compromise ecological intentions or cut corners to meet rigid buyer specifications.

There was also a pervasive critique of the consultancy sector, especially when perceived as being aligned with input sales or tied to legacy paradigms. As NN4 (male, lowland mixed estate owner) put it,

“Some consultants come in with agendas that seem more about selling inputs than understanding what the land actually needs”.

The mistrust expressed was not about technical knowledge per se, but about the political economy of advice, who benefits from it, and who is excluded. The divergence between lived experience and expert advice leads to a deeper questioning of what counts as valid knowledge, and who gets to define it.

The power to define agricultural “success” was also at stake. Several participants argued that dominant benchmarks, whether economic, ecological or social, often failed to reflect the diversity of farming realities. NW2 (male, upland dairy and sheep farmer) noted,

“The metrics don’t capture what we’re actually doing on the ground. They’re designed for someone else’s farm.”

Others went further, suggesting that many schemes and frameworks assume a conventional baseline, against which all deviation must be justified or tested. As HM1 (male, lowland beef and sheep farm manager) explained,

“If you try to do something different, it gets treated like a risk, even if it’s working better. That’s not how innovation should be measured.”

Yet this theme was not without glimmers of possibility. Some participants described how local peer groups and farmer clusters were beginning to carve out spaces for alternative forms of influence. NN11 (male, lowland mixed estate owner) highlighted how “the diehards

and the hippies are sitting in farm clusters around the same table” and, despite scepticism, were “all talking and listening”. These dialogues represent more than just collegial support, they are emergent governance structures, in which farmers co-produce knowledge and negotiate collective norms.

There were however concerns, and as HM1 (male, lowland beef and sheep farm manager) suggested:

“I think tenants have a big part to play... but there’s a risk that people who’ve been doing good stuff for years get disheartened because others play the system better”.

What emerges from this theme is a structural tension between externally imposed control and grassroots agency. Participants were not simply railing against power; they were actively proposing new configurations. They called for more participatory policymaking, locally attuned metrics, transparency in advice, and spaces where farmers could be knowledge creators rather than recipients. As such, this theme is less about farmers demanding power, and more about them reclaiming it, through networks, alliances, and everyday refusals to be governed in ways that don’t reflect their values, knowledge, and realities.

6.4 Chapter Summary

This chapter has presented a detailed, multi-dimensional analysis of farmers’ experiences, understandings, and actions as they navigate agroecological transitions. Drawing from a wide-ranging set of interviews across diverse geographies, production systems, and positionalities, the findings have been organised through the lens of the three deep leverage points identified by Abson et al. (2017): re-think, re-connect, and re-structure.

Under re-think, the findings show that learning is not simply a process of acquiring new information but of re-evaluating what counts as legitimate knowledge, who is trusted to deliver it, and how it is shared. Peer-to-peer learning, emotional and social support, and collective experimentation were revealed as powerful mechanisms for shifting paradigms and legitimising non-conventional approaches. Farmers are not passively adopting change but actively redefining it through relationships, experience, and situated learning practices.

In re-connect, participants revealed that nature connection is neither incidental nor secondary to agroecological transformation. Farmers described deep emotional and ethical

relationships with land, animals, and more-than-human life, expressed through observation, seasonality, attentiveness, and care. These relationships shaped practice and identity, even where they conflicted with prevailing narratives of productivity and control. The work of reconnection was also revealed to carry emotional risk, requiring vulnerability and often placing farmers at odds with dominant values. Yet across cohorts, these connections formed the moral and affective foundation of regenerative intent, driving change often in an embedded relationship with business performance.

Through re-structure, the analysis shifted to consider the broader systems in which farmers operate. The findings highlight substantial structural constraints, particularly around land tenure, market access, policy misalignment, and power asymmetries in supply chains and advisory systems. However, the research also revealed farmers actively building alternatives: forming new governance arrangements, experimenting with regional agri-food systems, and challenging consultancy and certification structures that reproduce dependency or exclusion. These efforts constitute both critique and construction, signalling that structural transformation is already underway, though unevenly resourced and often marginalised.

Together, these findings show that transformation in agriculture cannot be approached solely through technical fixes or financial incentives. It must contend with the lived realities of structural constraint, the emotional labour of change, and the relational infrastructures that sustain knowledge, courage, and care. Farmers are not simply implementing sustainability; they are negotiating it, reshaping it, and in many cases, radically reimagining its terms. This body of evidence starts to position farmers not as adopters of a predefined transition, but as co-authors of a collective and grounded agroecological future. What follows is a critical discussion of these findings, exploring their implications for theory, policy, and practice. The next chapter engages more directly with questions of agency, legitimacy, and power, situating farmers' voices within wider debates about transition pathways and structural change in food and farming systems.

Chapter 7 – Discussion

7.1 Introduction

The preceding chapters have explored the dynamics of change occurring within a range of farming systems in the UK through the lens of three interlinked leverage points: *rethinking the way knowledge is developed and shared*, *reconnecting with nature and community*, and *restructuring relationships, infrastructure and governance*. This framework has explicitly been used to meet the PhD's aim, which seeks to understand how connection with nature has shaped farm systems within a context of agroecological transition.

This research has traced how farmers are rethinking, reconnecting, and restructuring their relationships with knowledge, nature, and power. Across every thematic analysis, whether centred on learning, land, market relations, or emotional experience, participants revealed a transition underway: away from extractive, top-down, and prescriptive models of agriculture, and toward more adaptive, collaborative, and ecologically grounded systems of farming.

The findings demonstrate that agroecological transition is not a linear or uniform process, but instead unfolds through overlapping negotiations of identity, knowledge, land, and values. This chapter builds on that analysis by drawing the results into conversation with wider conceptual and theoretical frameworks. Here I seek to explain not just what farm system development is occurring, but how and why it takes the shape it does, and what that tells us about the viability and characteristics of agroecological transitions in a UK context.

At the heart of this analysis is the recognition that agriculture and agri-food systems represent what Barabba et al. (2014) term a 'mess': a dynamic system of interconnected problems where the relationships between the elements are as significant as the elements themselves. These problems, often described as 'wicked' (Grint, 2008), include climate change, biodiversity loss, soil degradation, farmer mental health crises, political uncertainty and entrenched economic inequalities. In such contexts, straightforward or technocratic solutions are rarely effective. Instead, what is needed are what Grint calls "clumsy solutions": creative combinations of perspectives that challenge dominant paradigms and open up space for alternatives.

Agroecology is increasingly positioned as one such alternative, albeit a contested and evolving one. Defined variously as a science, a social movement, and a set of practices (Wezel et al., 2009), agroecology emphasises ecological resilience, social justice, and local knowledge. It is both a critique of the industrial agri-food system and a proposition for more relational, situated, and democratic forms of farming and food provisioning (Altieri, 2018; Gliessman, 2018). The literature in Chapter 2 has established agroecology as a means of supporting transitions across multiple scales, from on-farm practice to governance and agri-food system redesign (Francis et al., 2003; Anderson et al., 2021).

However, as noted in that chapter, in the UK context, agroecology has yet to gain significant policy traction and remains largely marginal in public discourse (Lozada and Karley, 2021; Yoxall, 2022). Efforts have been made by organisations in the UK such as The Soil Association and The Food, Farming and Countryside Commission to give weight to agroecology as a concept through their joint efforts to promote “An Agroecological Europe in 2050” (Poux & Aubert, 2018). However, with agroecology being proposed as a radical agricultural movement, space has been left between it and more industrial agricultural practices, which has been occupied by regenerative agriculture as a more accessible term (Sands et al., 2023).

Much of the empirical literature focuses on either technical applications of agroecological principles or specific actor groups already aligned with the movement (e.g. horticulturalists, community-supported agriculture initiatives). What remains underexplored is how agroecological transition is taking place among what might be considered more ‘conventional’ or ‘mainstream’ farmers, particularly those who may not self-identify with the term ‘agroecology’, but whose practices, knowledge, and values reflect key agroecological principles.

This chapter addresses that gap by positioning the findings of this research in dialogue with a wide-ranging body of literature on agroecology, regenerative agriculture, sustainable farming, more-than-human relations, and farmer-led innovation. Specifically, it draws on the conceptual framework set out by Abson et al. (2017), which identifies deep leverage points for sustainability transformation: rethinking learning and knowledge, reconnecting with nature, and restructuring systems. The previous chapters used these leverage points as heuristic devices to structure empirical analysis, and what follows is here is a discussion of

how those leverage points relate to farm system transformation. The chapter then goes on to collapse those categories into a more integrated systems-level interpretation. This enables the exploration of the overlaps, tensions, and complementarities between these sites of change.

In doing so, the chapter also critically reflects on the conditions under which agroecological transition becomes possible or is constrained. It attends to the social, emotional, cognitive and material labour of transition, the role of peer learning and networks, the framing of animals and land, and the place of values, care, and ecological empathy in shaping farming decisions. These elements are explored as mutually constitutive aspects of a wider systems shift, one that resists reduction into technical fixes or singular narratives.

What emerges is a complex picture of transition that is neither utopian nor wholly oppositional to the mainstream. Rather, it reflects a messy but generative negotiation with dominant structures, personal identities, and ecological realities. In this way, the discussion moves beyond simple binaries of ‘conventional’ vs. ‘agroecological’, and towards a more nuanced understanding of how transformation unfolds within entangled social–ecological systems. This analysis not only contributes to academic debates on agroecological transition but also offers insights for practitioners and policymakers seeking to support place-based, farmer-led change within a context of climate crisis, biodiversity loss and shifting food futures.

7.2 Revisiting the Conceptual Lens: Agroecology by Design

Returning to Abson et al.’s (2017) framework provides a productive way to synthesise the empirical findings of this research with its conceptual commitments. The model identifies three deep levers: *re-thinking*, *re-connecting*, and *re-structuring*, through which systemic transformation becomes possible. The experiences of farmers in this study affirm the relevance of these levers, but they also reveal their interdependence, their uneven enactment, and their political complexity. Rather than operating as discrete layers, the levers function here as a dynamic leverage system, in which shifts in knowledge and perception (*re-think*), transformations in human and more-than-human relationships (*re-connect*), and changes in institutional and material conditions (*re-structure*) continuously influence and condition one another. Revisiting the lens through this empirical grounding allows us to

articulate how nature connectedness and farmer-led learning animate agroecological transition in practice, while also recognising the limitations of applying a universalised leverage model to place-specific, relational and structurally constrained contexts.

7.2.1 Re-think: Transformation Begins with Reframing Farming, Knowledge and Nature

My first research question asked how farmers understand the relationship between nature connectedness, agroecological values and the transformation of their farming practices. The findings show that transformation often begins with a cognitive and epistemic shift: a rethinking of what farming is for, what forms of knowledge matter, and how ecological processes should be interpreted. Rather than simply “learning new techniques,” farmers described a deeper shift away from yield-maximisation logics towards relational, long-term understandings of landscape health. This echoes transformative learning theory (Mezirow, 1997; Sterling, 2003), in which meaningful change occurs when underlying assumptions and frames of reference are unsettled.

Through the re-think lens it became clear that peer-to-peer knowledge sharing, emotional and social support, and evolving definitions of success are fostering new forms of learning and decision-making. Farmers expressed scepticism toward expert advice, favouring situated, lived experience over generic recommendations. They identified that trust, relevance, and community made peer networks more effective than consultant-led approaches. This was not a wholesale rejection of expertise, but a recalibration, placing more value on lived experimentation, collective learning, and social learning infrastructures.

Farmers described knowledge emerging through observation, memory, embodied familiarity, and close attention to ecological cues, forms of knowing that resonate with feminist epistemologies of care and situatedness (Haraway, 1988; Puig de la Bellacasa, 2017). These modes of knowing are not peripheral but foundational to decision-making, directly shaping motivations, risk assessment and transitions in grazing, breeding, input use and habitat management. Farmers positioned themselves not as passive adopters of prescribed innovations but as co-producers of knowledge whose insights are iterative, context-dependent and often in tension with conventional advisory systems (Ingram, 2008; Klerkx et al., 2012).

Thus, *re-thinking* captures the profound cognitive work required to move from knowing *about* land to knowing *with* it. This shift becomes a precondition for the relational and institutional transformations that follow.

7.2.2 Re-connect: Nature Relationships as Motivational, Epistemic and Practical Drivers of Change

The second research question asked how nature connectedness shapes motivations, decision-making and pathways of transition. The findings show that nature connectedness is not an add-on sentiment but a constitutive dimension of agroecological transformation. Farmers described relational practices, watching bird behaviour, sensing soil moisture, noticing plant recovery, discerning animal comfort, as central to how they evaluate options and make decisions, not just in terms of farm practice but business sustainability. Such forms of attentiveness align with relational theories of human–nature interaction that conceptualise care and responsiveness as modes of perception and knowledge-making (Despret, 2004; Krzywoszynska, 2016).

This relational attunement reorganises what farmers consider economically rational. For example, shelterbelts are valued not only for carbon or biodiversity metrics or payments, but because farmers observe their animals thriving in microclimates. Long rest periods become compelling because they “feel right” to the land and because farmers can see improvements in soil structure or pasture diversity, as well as extending the grazing season thereby reducing costs. In this sense, nature connectedness is inseparable from economic reasoning: it reshapes what kinds of value are recognised and what forms of labour are legitimised.

It was articulated that connection to the more-than-human world is not a side effect of ecological farming but a driver of it. Farmers articulated deep emotional, ethical, and embodied relationships with land and life, relationships expressed through observation, seasonal attunement, and attentiveness to non-human agency. Reconnection also carried emotional risk, of grief, of vulnerability, of being out of step with dominant norms, but these risks were met with courage, community, and a redefinition of legacy and stewardship beyond traditional notions of inheritance. Landscape-scale cooperation and the act of noticing, of simply seeing, emerged as quiet but powerful tools of transformation.

Re-connection also extends to social relations, answering research question 3. Peer-to-peer learning groups, WhatsApp networks, grazing groups and cluster initiatives cultivate forms of reciprocity, trust and collective accountability that sustain experimentation and buffer the risks of deviating from local norms. These networks embody the social infrastructure of transformation, aligning with Lave and Wenger's (1991) theorisation of communities of practice and empirical work on grassroots farmer learning (Kroma & Flora, 2003; Sutherland & Darnhofer, 2012). Here, re-connection is not only emotional or ecological; it is pedagogical, social and political.

7.2.3 Re-structure: The Institutional and Material Conditions That Enable or Constrain Transformation

The fourth research question asked how policy and market structures align or conflict with nature-connected practices, and how interventions might better support transformation. Participants' accounts demonstrate that while re-thinking and re-connecting provide the motivational and epistemic groundwork for change, their durability is contingent on material and institutional restructuring. Farmers repeatedly encountered constraints in land tenure, subsidy design, supply-chain requirements and financing models, confirming analyses that structural lock-in, capital dependency and market concentration are central obstacles to agroecological scaling (Pimbert, 2015; Anderson et al., 2021).

At the same time, some participants found partial alignment with emerging agri-environment schemes and collaborative landscape initiatives. Yet even here, bureaucratic design, insufficient payments and short-term contracts often undermined the ecological ambitions of the programmes, echoing critiques that policy frameworks frequently fail to match the temporal and relational dynamics of ecological systems (Dupraz & Guyomard, 2019; Mills et al., 2020).

The findings therefore reinforce that re-structuring is not merely technical, it is political, involving contestation over what agriculture is for, whose knowledge counts, and how risks and responsibilities are distributed. Effective restructuring requires long-term, secure, and plural support infrastructures: farmer-led research platforms, cooperative marketing models, adaptive payment schemes, community tenure models, and metrics that value ecological complexity rather than uniform outputs. Such enabling conditions allow the insights,

motivations and practices arising from re-thinking and re-connecting to solidify into durable change. Whilst there were a number of examples of self-organising or co-operation within the cohorts addressing some of these structural barriers, these represent an element of the interactive complexity of transformation that is not accessible to all, further defining the structural challenge.

The limitations and possibilities of the wider system came into focus. Participants critiqued the rigidity and misalignment of existing subsidy schemes, expressed frustration with market dependency, and questioned who holds power in setting the terms of transition. But alongside this critique were models of collective resistance and regeneration, farmers forming co-operatives, sharing land, testing new routes to market, and collaborating across boundaries to reshape what farming can be. Many were taking active steps to restructure from within, rebuilding infrastructure, shifting ownership models, or refusing exploitative supply chains altogether.

Throughout this analysis, farmers emerge not simply as recipients of policy or deliverers of public goods, but as *authors* of change, experimenting, reimagining, and enacting new relationships with land, animals, people, and markets. Their stories reveal that the agroecological transition is not only technical or economic, it is social, emotional, and relational. Transformation is being made, not just measured, and at its heart is a commitment to care.

7.2.4 Critiquing the Conceptual Lens: Strengths, Limits and the Need for a Relational-Structural Synthesis

While Abson et al.'s (2017) deep leverage model offers a powerful scaffold for analysing agroecological transformation, the findings of this study also reveal its limitations.

The model risks presenting leverage points as separable conceptual categories when, in practice, farmers' experiences demonstrate that cognitive, relational and structural shifts are deeply entangled. Re-thinking is shaped by structural constraints; re-connecting is co-produced through learning cultures; re-structuring often follows from relational shifts rather than preceding them. Treating the levers as discrete risks obscuring the relational, iterative and emergent nature of transformation.

The model places significant weight on intentional design, yet the transformations observed here often emerged through contingency, improvisation and relational attentiveness, rather than deliberate leverage interventions. Much of agroecological transition unfolds through subtle, accumulative shifts in perception and practice rather than through strategic system redesign. Even though governance is a focus of the framework, it could be argued that the framework simplifies this aspect and does not adequately foreground power, politics and inequality. The findings underscore that land tenure, supply-chain governance, policy volatility and capital dependency fundamentally shape farmers' capacity to engage in transformation. Without explicit attention to these structural determinants, leverage-based analyses risk overstating the agency of individual farmers and underplaying the systemic forces that contour their possibilities.

In light of these critiques, the deep leverage framework remains a valuable interpretive tool, but it must be expanded into a more relational-structural account, one that recognises the co-constitution of perception, ecology and power.

7.2.5 A Dynamic Vision of Agroecological Transformation

Taken together, the findings across all four research questions suggest that agroecological transition, as system transformation is neither linear nor solely technical. It is a dynamic interplay of epistemic shifts, relational reorientations and structural negotiation. Farmers' nature connectedness reshapes motivations and decision-making and directly relates to farm economic reorientation; peer networks sustain the courage and creativity to experiment; and institutional conditions determine whether these transformations can take root either in alignment with policy, or often despite policy inflexibilities.

The deep leverage framework helps clarify these processes, but the empirical material also challenges us to imagine transformation enacted not as a set of discrete levers but as a living system, in which thought, connection and structure evolve together. Transformation emerges when these dimensions align, when farmers rethink what farming can be, reconnect with land and community, and negotiate or reshape the structures that govern their possibilities.

7.3 Agroecological Transition as System Transformation

Agroecological transition is increasingly framed in the literature as a process of deep system transformation, rather than as the adoption of specific practices or technologies (Altieri and Nicholls, 2020; Anderson et al., 2021). This framing recognises the need to address the root causes of unsustainable agri-food systems, which include not only environmental degradation and climate instability, but also socio-economic inequality, extractive governance structures and the disconnection of food production from ecological and cultural systems (Francis et al., 2003; Pimbert, 2015). In this thesis, the concept of agroecology has functioned as both an analytical lens and as an orienting concept, giving attention to the diversity of farmer experiences and values, while remaining open-ended and responsive to contextual variation.

The findings presented in the results chapters illustrate that agroecological transition in the UK context is not characterised by wholesale rejection of conventional farming norms, nor by full alignment with the political dimensions of agroecology as a movement. Rather, they reveal a pattern of overlapping and iterative shifts in mindset, in material practice, in ecological awareness, that together begin to reshape farming systems from within and are strongly influenced by nature connectedness. This section draws these findings into context with the wider literature on sustainability transformation, transition theory, and agroecology to explore the nature of system-level change and its expression in situated, practice-based settings.

7.3.1 Beyond Adoption: Complexity, Contradiction and Emergence

One of the central arguments of transformation theory is that meaningful change requires interventions at a system's deepest levels, particularly in relation to values, goals, and paradigms (Meadows, 1999; Abson et al., 2017). Abson et al. (ibid) identify these 'deep leverage points' as holding greater potential to transform systems than shallow interventions such as subsidies or technological innovations. Within the context of agroecology, these leverage points manifest not just in technical alterations to production (e.g. reducing inputs, introducing herbal leys), but in a reconfiguration of relationships with land and livestock, with knowledge, and with other farmers.

What emerged clearly from the fieldwork is that these reconfigurations are not uniform. Rather than adhering to a single logic of transition, farmers engage in sometimes contradictory, contextually bounded strategies, such as mixing high-performance grass varieties with increased rest periods; participating in agri-environment schemes while remaining sceptical of government programmes; using regenerative approaches without identifying with the term. This aligns with the notion of “clumsy solutions” (Grint, 2008), which recognises that within complex systems, transformation is unlikely to emerge from neatly defined strategies but instead through adaptive, locally negotiated and sometimes inconsistent practices. These contradictions do not necessarily indicate failure or incoherence. On the contrary, they reflect what Stirling (2011) describes as “transformation as diversity”, a mode of change that values pluralism and contextual specificity over linear progress. In this sense, the farmers in the five cohorts are not transitioning *to* a predefined agroecological ideal, but rather are experimenting with and enacting diverse expressions of change, often driven by personal values, ecological observation, and peer exchange. Their actions reflect an emergent, situated form of systems thinking, informed as much by lived experience as by formal knowledge or ideology. What becomes visible through these practices is not simply adaptive transition but the early contours of transformative change: farmers are reworking the meanings, norms, and ontologies that structure what farming is for, what counts as success, and how land, livestock, and livelihoods ought to relate. Rather than moving along a linear pathway towards a stable agroecological endpoint, they are participating in a process of system redesign in which multiple, sometimes conflicting, ways of knowing and valuing the farm co-exist and co-evolve.

This emergent pluralism suggests that transformation is not a shift from one coherent system to another, but the ongoing reassembly of practices, identities, infrastructures, and ecologies. In this sense, the agroecological future is not being adopted; it is being co-produced through the everyday experiments, compromises, and re-imaginings that farmers enact within the constraints and possibilities of their own contexts. Such dynamics resonate with transformational theories that emphasise ontological multiplicity (Mol, 1999), radical uncertainty (Stirling, 2011), and diverse pathways of change (Scoones, 2016). What the fieldwork shows is that agroecological transformation is not a matter of scaling up best practice, but of cultivating the conditions under which multiple, contextually rooted forms of

ecological, social, and ethical reasoning can flourish. The reorientation of values and ecological relationships emerging in these farming contexts does not follow from compliance with a menu of options offered as part of an agri-environment scheme, nor can it be fully captured by metrics or payment structures. Transformation, in the sense described by Stirling (2011) and Scoones (2016), is generative rather than directive: it unfolds through experimentation, negotiation, relational attunement, and forms of learning that exceed formal policy frameworks.

7.3.2 Working With Rather Than Against Complexity

One of the most consistent themes across the literature on agroecological transition is the emphasis on complexity: ecological, social, and epistemological (Wezel et al., 2009; Duru et al., 2015; Gliessman, 2018). Agroecological farming requires the management of complex agroecosystems where outcomes are uncertain and interactions are nonlinear. The farmers in this research demonstrated a high tolerance for complexity, and in many cases, a deliberate rejection of reductionist approaches. Rather than pursuing control through inputs or simplification, they were actively cultivating diversity, adaptability and ecological feedback loops as well as exploring alternative ways to improve business resilience and financial sustainability.

This represents a fundamental epistemological shift, from farming as control and extraction to farming as co-existence and stewardship not only as a narrative but as an actionable practice. As one farmer put it, “we’ve learned to feed the soil, which in turn feeds the plant, rather than trying to feed the plant directly.” Such statements echo agroecological principles that centre ecological processes and view the farm as an ecosystem (Altieri, 2009). However, what is notable is that these shifts are often not framed in overtly ideological terms. Instead, they emerge from pragmatic, experiential learning, informed by years of observation, trial and error and conversations with peers through a range of interactions both virtual and face to face. In this way, transformation does not require the wholesale adoption of a new worldview or political realignment but can instead be driven by practical curiosity and responsive adaptation. It is connection with nature and engagement with natural processes that underpins this very practical reconfiguration of understanding. Nature connection is not just emotional engagement, but a core aspect of shaping systems for resilience and optimal

output, and working with nature moves business operations forward towards financial sustainability.

This process of transformation also involves unlearning of inherited practices, productivist norms and deeply held assumptions about what constitutes good farming. Many participants described changes that involved relinquishing practices associated with control or productivity (e.g. topping, ploughing, routine worming) and developing trust in slower, more relational processes. This reflects what Anderson et al. (2019) refer to as “unlearning industrialism”, a critical component of agroecological transition that often goes unrecognised in practice-focused discussions.

This is one of the key findings that I share in this thesis, that economic resilience does not sit outside the agroecological transition, but it is in fact, reconstituted through nature connection. By deploying an economic reorientation to address cost discipline, reduce dependency on external inputs and mitigate against system shocks, farmers are entering into a relationship with nature to underwrite the business viability. I explain this in more detail later in this chapter.

7.3.3 Transition as Relational

While individual decision-making was central to the changes described, these were rarely isolated acts. Instead, transition was deeply relational, shaped by family dynamics, landlord–tenant relationships, peer influence, and community norms. This aligns with findings from Padel et al. (2019) and Rust et al. (2021), who highlight the importance of social networks and peer exchange in enabling (or on occasion, constraining) transformation.

This research shows that farmers are not only learning from one another but also modelling and legitimising alternative ways of farming within their local contexts. This challenges the notion that transition is solely a matter of personal attitude or knowledge deficit and instead highlights the role of collective validation and symbolic capital, that is the social recognition and legitimacy farmers gain from their peers for adopting practices seen as credible, competent or aligned with local norms of “good farming” (Burton, 2004). Where peer networks support experimentation and offer emotional as well as technical support, they become critical infrastructure for system transformation.

However, relationality also introduces constraints. Farmers often described tensions between their own ecological ambitions and the expectations of others, whether neighbours, landlords, advisors, or family members. These relational dynamics shape what is *possible*, what is *permissible*, and what is *recognisable* as “good farming.” In this way, transformation is not simply a matter of changing practices but involves navigating social legitimacy, identity and belonging, dimensions that, as several scholars have argued, are frequently under-examined in transition literature (Burton, 2004; Shove & Walker, 2007; Sutherland & Burton, 2011).

As the previous chapter has shown, agroecological transformation is enabled when farmers are able to exercise situated autonomy, that is, decision-making grounded in local knowledge, ecological understanding, and personal values, but made possible through enabling conditions such as infrastructure, land tenure security, and access to social support. This resonates with the concept of “embedded autonomy” described by Evans (1995), in which transformation occurs when actors are both embedded in local contexts and have the autonomy to innovate within them. Several farmers described being “left alone” by landlords or their representatives as a key enabler of change, while others relied on community-led knowledge systems to replace external advice. These conditions allow for the kind of place-based experimentation that is central to agroecology (Carlisle et al., 2019). Yet they are unevenly distributed and highly influenced by land access, socio-economic status and geographic context, suggesting that transformation is not simply a matter of motivation or belief, but also of material possibility.

7.3.4 Agroecology as a Messy Middle

Taken together, these findings challenge the assumption that agroecological transition is either a top-down policy project or a radical grassroots movement. Instead, what emerges is a form of “messy middle” (Friedman et al., 2024) a liminal space in which farmers engage with multiple logics, adopt hybrid practices, and navigate institutional and cultural constraints while attempting to reorient their farming systems (Anderson et al., 2020)

This framing is important because it refuses the binary between “conventional” and “alternative,” and instead acknowledges the gradual, overlapping, and nonlinear nature of transformation. It also allows for an appreciation of ambiguity and ambivalence, where

many farmers held simultaneously pragmatic and moral reasons for their choices, and often acted in ways that defy easy classification. Rather than viewing this as a weakness or inconsistency, the discussion here, in line with Abson et al. (2017), understands such multiplicity as a core strength of systems-level transformation, enabling responsiveness, adaptability and creativity in the face of complexity.

The messy middle is also where agency is enacted, not through ideological purity but through relational, iterative action. This understanding is critical for both scholars and practitioners as it shifts the focus from replicability and scaling to supporting conditions, enabling structures, and the relational ecologies that allow transformation to take root.

7.4 Knowledge, Learning and the Role of Peer Networks

Agroecological transition is not only a transformation of practices but also of how knowledge is produced, valued, and shared. It calls into question the dominance of top-down, expert-led extension models and instead highlights the importance of farmer-led innovation, experiential knowledge, and peer-to-peer exchange (Kroma, 2006; Anderson et al., 2019, Rust et al., 2021). This section explores how farmers across the cohorts are navigating learning within networks, clusters and informal relationships, revealing how social learning processes underpin the development of agroecological systems. In this section I answer my third research question “how do farmer-to-farmer knowledge exchange practices contribute to transformation, particularly through shared values, nature relationships, and systems-level learning?”.

7.4.1 Reframing Expertise and Valuing Experiential Knowledge

A foundational insight across the interviews was the growing recognition that farming knowledge does not reside solely in scientific literature or professional advisory services, but is generated through experience, observation, experimentation, and conversation. Many participants expressed scepticism towards conventional sources of advice, particularly agronomists and consultants, not necessarily because they were wrong, but because their advice was often perceived as constrained by input-based paradigms or vested interests. Instead, farmers increasingly turned to peers, cluster groups, discussion networks, podcasts and farm walks as primary sources of learning. As one participant described, “I always think I

learn something... even if it's how *not* to do something". This iterative, field-based learning reflects a different epistemology, one grounded in practice, dialogue, and contextual specificity, rather than abstract generalisation. It also reflects a shift in how expertise is defined: from an external authority to an embodied, collective process reliant on successful contextualisation.

This finding aligns with agroecological literature that critiques the vertical knowledge transfer model and instead advocates for co-learning, horizontal exchange, and farmer-to-farmer knowledge flows (Pimbert, 2006; Méndez et al., 2013; Rust et al., 2021).

Agroecological transition thus requires not just new knowledge, but new knowledge systems, ones that are decentralised, dialogic and inclusive of diverse ways of knowing.

7.4.2 Social Learning and Emotional Legitimacy

Participants emphasised the emotional as well as cognitive dimensions of learning. Several farmers described how peer networks provided not just technical insights but also moral support, affirmation and courage. Transitioning to new ways of farming, particularly those that challenge dominant productivity norms, can be isolating. One farmer described the experience of peer networks as "resetting my learning" and allowing them to "push boundaries" within a supportive group of like-minded others. Another spoke of how participation in farm clusters reduced the feeling of being "an outlier," and created space for different kinds of conversations, including between farmers with contrasting approaches.

This dynamic echoes work on social learning (Reed et al., 2010) and communities of practice (Wenger, 1998), where knowledge is produced through participation, storytelling, and shared reflection. It also speaks to the affective dimension of legitimacy: that doing things differently becomes easier, more plausible, and more durable when it is socially validated.

In these contexts, informal peer learning can serve as a counterweight to dominant narratives, including those propagated by media, industry and policy, by offering alternative visions of good farming that are rooted in ecological care, long-term thinking, and mutual aid, as well as financial sustainability.

7.4.3 Informality, Trust and Non-Linearity

The structure of these peer learning networks was often informal, fluid and overlapping. WhatsApp groups, farm visits and word-of-mouth learning all featured prominently in participants' accounts. This informality was not a limitation, but a strength as it enabled low-barrier access, built trust and allowed knowledge to circulate in non-hierarchical, relational ways. Several farmers described how ideas encountered through casual conversations or farm tours later crystallised into significant practice changes, sometimes years later. Such temporal lag reflects the non-linear rhythms of learning, where insights accumulate gradually until the conditions - ecological, social, financial or emotional - are right for action.

The learning process itself was rarely linear. Instead, it resembled what Schön (1983) called "reflection-in-action": knowledge emerging from doing, failing, observing, and iterating. One farmer noted that cluster groups helped him "evolve his own system" by adapting what he learned elsewhere to his specific conditions. Others described learning by watching what not to do, or by taking small "safe-to-fail" steps encouraged by their peers. This incremental, experimental mode of change highlights the extent to which learning is situated, embodied and relational, rather than a matter of adopting discrete innovations or specific practices.

This mirrors the findings of scholars like Van Etten et al. (2021), who argue that distributed, participatory learning systems are more adaptive and context-sensitive than standardised extension programmes, especially in the face of climate uncertainty and ecological complexity. But it also suggests something more profound. These networks do not simply accelerate a transition by improving knowledge flow; they help cultivate the very capacities needed for transformation, the capacities to notice, interpret, improvise and take risks in the face of uncertainty. As Stirling (2011) argues, transformation arises not from the diffusion of singular "best practices," but from the proliferation of diverse, exploratory pathways through which actors reconfigure their own worlds.

Seen in this light, peer networks are not delivery mechanisms for predefined agroecological techniques. They are *sites of emergence*: spaces where farmers collectively rework assumptions about what farming is, what counts as legitimate knowledge and how humans and landscapes ought to or can relate. In other words, they operate at the level of deep leverage points, shaping values, worldviews, identities and relationships rather than simply facilitating the uptake of new practices.

7.4.4 Collective Knowledge and Distributed Experimentation

The peer networks so widely valued by farmers across the cohorts often functioned as distributed experimentation platforms. Different members tried out different approaches, such as implementing cover crops, adaptive grazing, direct drilling, composting, and shared results with others. This ethos of collective trial-and-error is particularly important in agroecology, where no universal blueprint exists and each farm is shaped by unique ecological and socio-cultural dynamics. Peer networks create the conditions for such experimentation to flourish, offering feedback loops, safety nets, and contextual interpretation. The system as a whole becomes smarter and more resilient through distributed, shared learning.

Such dynamics echo the concept of “distributed cognition” from cognitive science, where intelligence is not located in a single mind but emerges from networks of interaction (Hutchins, 1995). In the agroecological context, this means that innovation is not the property of any one farmer or expert, but an emergent property of a socially embedded, ecologically grounded knowledge system. This redistributes knowledge power to the collective, potentially undermining corporate or academic control. Crucially, this distributed, relational mode of knowing mirrors the “messy middle” of transformation described earlier. Just as the processes of change cannot be neatly contained within the boundaries of agri-environment schemes or policy prescriptions, the collective knowledge that facilitate those changes cannot be proscribed or owned. Formal mechanisms depend on codifiable actions and linear theories of change; yet the learning and experimentation that underpin transformation unfold in ways that are contingent and inherently resistant to simplification. What emerges from these networks, therefore, is not oppositional in any explicit sense, farmers are not positioning themselves as rebels against dominant paradigms. Rather, their everyday practices enact a subtle form of epistemic and practical autonomy: a quiet refusal to allow hegemonic models of farming, expertise, or “good practice” to dictate the horizons of possibility.

In this sense, the peer-driven knowledge ecology documented here resembles a kind of activism without activists, a dispersed, often unintentional reworking of power, legitimacy, and authority. Farmers are not necessarily seeking to challenge the system, yet through their collaborative, place based and experimental modes of reasoning, they participate in

reconfiguring it. Transformation, then, arises not through organised resistance or explicit critique, but through the cumulative effects of many small acts of divergence, improvisation, and locally grounded sense-making that exceed the grasp of formal schemes or curricula.

7.4.5 Boundary Crossing and Generative Tension

While many networks were built around shared values or interests, participants also spoke of the value of diversity and disagreement. Several referenced farm cluster groups where “diehards and hippies” now sit at the same table, discussing everything from soil health to herbicide use. These moments of encounter, where different farming cultures, paradigms, or worldviews collide, were sometimes uncomfortable, but often generative. They represent what Wenger (1998) describes as “boundary encounters”: interactions across lines of difference that can spark learning, reflection, and reconfiguration. Crucially, such encounters do not require consensus to be productive; rather, it is the friction itself that enables what Stirling (2011) terms “transformation as diversity,” where new possibilities emerge through the coexistence, or even creative tension, of multiple ways of farming and knowing.

For agroecological transformation, these moments matter because they create the potential to shift paradigms, not through imposition, but through dialogue, mutual recognition, and negotiated change. This aligns with Pimbert’s (2015) call for agroecology to be a pluralist, democratic practice, open to multiple pathways and co-produced futures. Yet these heterogenous encounters also highlight why transformation cannot be choreographed through prescriptive schemes or uniform policy instruments. They depend on relationality, trust, humour, reciprocity, and the distributed cognition of the collective, all conditions that cannot be mandated or metricised. Again, peer learning and collective knowledge generation operates as a quiet counter-hegemonic force: not through overt resistance, but through the ongoing, often unconscious reworking of assumptions about good farming, how we feel about our peers and assumptions we may have made about others either consciously or not. Here, transformation is enacted not by aligning everyone to the same model, but by sustaining spaces where difference can be held and explored with mutual respect.

7.4.6 Challenges and Limits

While the importance of peer learning is clear, several challenges were also identified. First, access to such networks is uneven. Not all farmers are situated within communities where peer exchange is common or even socially acceptable. Research on agricultural advisory systems consistently shows that participation in learning networks is patterned by class, gender, tenure, geography, and farm type (Ingram, 2008; Phillips et al., 2021). As a result, those most marginal to dominant farming cultures such as tenant farmers, remote upland graziers, new entrants, may be least able to benefit from the social infrastructures that support knowledge sharing. Or conversely, those who are in well-established, traditional farming communities may not be aware of knowledge exchange networks operating on the periphery. As such, network-based innovations may reproduce, rather than disrupt, existing inequalities in access to knowledge (Klerkx and Proctor, 2013).

Second, the proliferation of peer-to-peer exchange, particularly in digital spaces, introduces the risk of information overload, contradictory advice or the rapid circulation of untested claims (Oreszczyn et al., 2010). The contemporary learning landscape is characterised by an excess of information and scarcity of interpretation, which places the burden of discernment on individual farmers (Phillips et al., 2018). Several participants described moments of paralysis or confusion when online discussions generated more uncertainty rather than clarity, echoing wider concerns about the epistemic volatility of social media environments (Carolan, 2016).

Third, peer learning is not immune to groupthink. While many farmers valued the diversity within their learning networks, they also recognised the risk that tightly knit groups can drift towards homogeneity, normative pressure, or “echo chamber” dynamics. Farming cultures are powerful sites of social conformity, where what counts as “good farming” can be collectively policed (Burton, 2004; Sutherland & Burton, 2011). Whilst the general view of participants was that these networks allowed those ideals to be challenged, there is a risk that this can be pushed too far in the other direction where any expressions that are not considered to be regenerative enough are discouraged regardless of relevance.

This means that whilst peer networks can enable transformation, there may be examples where they actively inhibit change or creative thinking. They may encourage radical change

in some contexts, while in others reinforce fashionable trends (e.g., “regen as recipe,” as some participants suggested).

While peer networks can build confidence and creativity they cannot fully substitute for structural support. Many participants expressed frustration at attempting significant changes without secure land tenure, adequate finance, or stable institutional recognition. This aligns with the argument advanced by authors such as Feola (2015) and Anderson et al. (2021), who caution that social learning alone cannot overcome the political-economic constraints that shape agricultural systems. Farmer-led experimentation requires not only knowledge and motivation but also time, resources, and protection from risk, all elements predominantly shaped by policy and markets rather than peer support.

Taken together, these dynamics suggest that while peer learning can catalyse agroecological change, it operates within a wider assemblage of constraints and opportunities. It can nurture the capacities associated with transformation such as curiosity, reflexivity, willingness to experiment, but it cannot fully resolve structural inequities, institutional rigidities, or economic pressures. Indeed, recognising these limits is essential to resisting the temptation to romanticise peer learning as a panacea. Instead, as transition scholars argue (Stirling, 2011; Scoones et al., 2020), transformation requires an enabling environment in which diverse, locally grounded pathways can flourish. Peer networks contribute to this environment, but they cannot compensate for the absence of supportive policy architectures, financial stability, or meaningful security, all conditions that must be addressed if transformation is to take root beyond the most privileged or well-connected.

7.5 Revaluing Animals, Land and Care

A powerful narrative observed across the participant interviews was a reconfiguration of relationships, not only between farmers and other people in the context of communities and networks, but between farmers and the more-than-human world. Agroecological transition, in this context, emerges as not merely a technical or economic process, but an ethical and affective one. This section explores how farmers are reconnecting with nature by rethinking their relationships with animals and land in ways that reflect values of attentiveness, responsibility and ecological reciprocity.

7.5.1 Beyond Utility: Animals as Co-Actors

Livestock undoubtedly had an important role on every farm involved in this research. Even those where livestock were not owned directly, recognised their contribution to nutrient cycling and made arrangements in some way for their inclusion on the land, either through collaboration with graziers or short-term letting arrangements. Their value was universally recognised and explicitly articulated. In addition, many participants described their livestock not simply as production units but as agents within a wider system, collaborators in ecosystem management, nutrient cycling, and land regeneration. One farmer, for example, noted that pigs were used “to create seed beds” or “compost housing,” while chickens were “poo picking” and “spreading dung,” doing work “we’ve either mechanically or physically done over the years”. This reflects a conceptual shift: animals are no longer seen solely as economic assets, but as ecological partners.

This mirrors literature in both agroecology and animal studies that recognises livestock as part of complex socio-ecological systems. Acknowledging animals as sentient and agentic beings reshapes the ethics of animal care, encouraging farmers to engage with them not only instrumentally but relationally (Lorimer and Driessen, 2016). Farmers’ reflections often demonstrated a situated, embodied ethics grounded in observation, responsibility, and reciprocity. “If you’re not using inputs,” one farmer said, “you farm at the privilege of Mother Nature... what nature is doing shapes every single decision we make on the farm”. In this worldview, animals are part of a co-managed ecology, where their wellbeing, behaviour, and contribution are integral to the functioning of the whole. This “entangled care” involved in human–animal relationships on farms reflects an ethical attentiveness that refuses strict separations between subject and object (Rock and Degeling, 2015).

This represents a notable departure from the dominant productivist paradigm, in which animals are valued primarily for their outputs (meat, milk, or fibre) and their roles are narrowly defined by market imperatives. What is emerging instead is a more integrated, systemic view in which animals are once again multifunctional contributors to the farm's ecology and resilience. In several accounts, farmers described animals not just as recipients of care, but as “team players” within a broader network of ecological processes: managing vegetation, cycling nutrients, supporting soil health, and even contributing to pest control or habitat creation. In this framing, livestock are not ancillary to nature but co-workers with it,

helping to deliver a thriving, multifunctional farm ecosystem. This reconceptualisation aligns with agroecological principles that reject input substitution in favour of system redesign (Gliessman, 2016), and it reflects a deeper philosophical shift: one that repositions animals as ecological allies, not only economic units. For many farmers, this felt like a return to older, more holistic understandings of livestock roles, but revitalised within a contemporary context of low-input, ecologically driven management.

7.5.2 Attentiveness, Empathy and the Labour of Care

A more relational understanding of animals and land entails a deep form of attentiveness, not only to ecological signals but also to the wellbeing, needs, and experiential realities of animals. Several farmers in this study described a shift in perception when adopting more responsive grazing systems, such as daily or frequent moves in mob grazing; slowing down enabled them to notice more. What emerges here is an ecological ethic of care: a recognition that agricultural systems function best when approached as holistic, co-constituted networks of human and more-than-human actors. This mode of attentiveness goes beyond instrumental reasoning; it is grounded in an ethical stance that sees animals, soils, plants, and farmers as interdependent beings within the agroecosystem.

This framing aligns with Puig de la Bellacasa's (2017) articulation of care as an affective, situated, and materially embedded practice, one that demands "thinking with care" rather than acting solely for efficiency. Care, here, is not reducible to emotion or sentiment; it encompasses physical, cognitive, and emotional labour in daily acts of observation, adjustment, and attunement. Dimensions of attentiveness, responsibility, competence, and responsiveness materialise in the mundane but vital practices of tending, listening, and coexisting, often resisting dominant logics of industrial farming that emphasise scale, control, and detachment. (Tronto, 1993).

Krzywoszynska (2016, 2019) offers a significant extension of this perspective, arguing that care in agriculture is fundamentally tied to situated embodied knowledge. In her ethnographic work with farmers, she shows how care emerges through relational becoming, a process in which farmers come to know their land and animals not through abstract metrics, but through doing, feeling, and dwelling-with. These themes were reflected throughout the interviews with participants, positioning care as a mode of ecological

practice, one that binds farmers into networks of mutual responsibility and responsiveness with soil life, water cycles, animal health, and plant vitality. This sits in direct opposition to concerns related to the objectification of animals in Precision Livestock Farming (PLF), an alternate sustainable livestock agriculture pathway, where the system itself is objectifying (Bos et al., 2018). By paying greater attention to systems built on or encompassing an “ethics of care” when envisaging new or future sustainable agricultural systems (Thompson, 2022) we may be forced to reconsider what is truly more sustainable.

Such relational ontologies are echoed in feminist and posthumanist thought. Haraway’s (2008) call to “stay with the trouble” and Despret’s (2004) emphasis on situated multispecies listening both support the idea that ethical cohabitation arises from attentive presence. These scholars challenge the abstraction of animals as mere production units and instead propose relationships of ‘response-ability’, in which animals and humans co-produce knowledge and wellbeing. In agroecology, this means recognising animals as subjects of care and the land as a communicative entity, speaking through soil texture, plant resilience, or shifts in animal behaviour.

Farmer reflections reinforce this ethic of responsiveness. One participant noted that learning was “reset” when “you’re really watching, when you’re really listening, when you care about more than just the yield.” This aligns with Carolan’s (2020) work on affective ecologies, which explores how sensory and emotional engagements with the environment produce ethical dispositions, not just empirical knowledge. Participants also spoke of affective moments, the return of migratory birds, the hum of insect life, as affirmations of their approach, reinforcing a sense of shared aliveness. These experiences clearly articulate connectedness to nature, a psychological state correlated with pro-environmental behaviours, ecological stewardship, and enhanced wellbeing (Mayer & Frantz, 2004).

Taken together, these findings suggest that agroecological transition is not simply a technical or cognitive shift, but an ethical and perceptual recalibration, a transformation of how one sees, feels, and relates to the more-than-human world, even if that is not always articulated verbally but only through action. And this shift is not limited to those who self-identify as agroecological or regenerative, it presents in those farmers who are also astute business people, with a keen sense of financial resilience. Within this framework, care is not peripheral to productivity but foundational to the resilience and vitality of agroecosystems.

As Krzywoszynska (2016) asserts, to care well is also to farm well, to be attuned, situated, and implicated in the ecological complexities that sustain agriculture. Agroecological transition is, in this case then, the alignment and balancing of care and financial resilience of the farm system.

7.5.3 Relational Land Ethics and “Working with the Farm”

Shifts in animal relations within agroecological systems were mirrored by profound transformations in how farmers conceptualised and engaged with land. Rather than positioning land as a passive backdrop to production, many farmers adopted a relational land ethic, one that foregrounds dialogue, responsiveness, and co-becoming with more-than-human forces. This reorientation moves beyond traditional notions of land stewardship as management or control and instead aligns with ecologies of reciprocity rooted in both Indigenous and feminist thought (Plumwood, 2006; Shiva, 2016; TallBear, 2017). Here, land is not simply “managed”; it is engaged with as a living actor, an agent that informs, responds to, and shapes human practice.

This perspective challenges the mechanistic and anthropocentric frameworks that have long underpinned modern agriculture. Instead of imposing prescriptive systems, agroecological practitioners described processes of attunement and adaptive iteration, a practice echoed in Despret’s (2004) concept of “asking the right questions,” where knowledge is co-produced in situated relationships. In this framing, land becomes a teacher or interlocutor, guiding decisions through observable ecological feedback: changes in soil texture, forage dynamics, or biodiversity presence. Such knowledge production is situated and experiential, contrasting with dominant models of top-down agronomic expertise.

Farmers’ ways of knowing land emerge through embodied, day-to-day engagements rather than through the application of external expertise. Participants frequently described knowing the land by “walking it,” “reading it,” or “listening to what it needs,” highlighting a performative mode of understanding developed through ongoing interaction rather than detached observation (Holloway, 2002). Rather than responding to externally defined variables, farmers appear to participate in a continual negotiation with soils, weather, plants, and animals, an adaptive process in which decisions arise through attentiveness, experimentation, and mutual adjustment (Mahon et al., 2017). This reframes land care not

as a linear, technocratic exercise, but as a dynamic, relational practice grounded in forms of competence built over time through embodied experience (Holloway, 2007).

These relational understandings offer an important contribution to debates on agroecological transitions. The findings suggest not only a shift in practice, but a recalibration of how farmers *know* land: as a communicative partner in ecological and economic processes. This adds an epistemological and affective dimension to transition scholarship by illustrating how alternative modes of knowing are enacted through lived, improvisational practice rather than through the adoption of codified techniques (Holloway, 2002). Moreover, the study demonstrates that peer support is central to enabling this form of relational land care, with farmers drawing confidence from collective experimentation, shared observations, and the informal validation of intuitive decision-making, an enabling context that strengthens practices of care and supports deeper systemic transformation (Mahon et al., 2017).

7.5.4 Nature Connection as Emotional and Ethical Orientation

Nature connection, for many, was not simply an outcome of agroecological practice but a driver of it. Several farmers spoke about a desire to “farm with nature,” or described how observing natural processes fundamentally reshaped how they understood their work. Long-term engagement with land cultivates ecological identity and deepened ethical concern for nonhuman others (Clayton & Opatow, 2003) and a sense of connection with nature is associated with prosocial and pro-environmental behaviour (Mayer and Frantz, 2004) suggesting that such relational ties can operate as motivational levers within farm system transformation. Nature connection appeared not as a sentimental attachment but as an epistemic and practical resource through which farmers oriented their daily decisions.

Participants often described nature connection as enhancing their capacity to farm well. Several linked ecological attentiveness with increased adaptability, observational acuity, and resilience, capacities that can contribute to resilience and adaptive management, where attunement to environmental cues is central to navigating uncertainty (Berkes & Folke, 1998; Fazey et al., 2007). One farmer suggested that those who care about nature “are generally happier, healthier people,” attributing meaning, joy, and a sense of purpose to the experience of working with, rather than against, ecological processes. These accounts echo

longstanding arguments in environmental psychology that nature-based engagement fosters psychological restoration, cognitive clarity, and emotional stability (Kaplan, 1995; Hartig et al., 2014).

Others framed nature connection as a protective force against burnout, stress, and the isolation that often characterises contemporary farming. Farmers described moments of pausing, noticing, or reflecting in the landscape as essential to sustaining their wellbeing and sense of identity. This aligns with emerging research showing that ecological practices and immersion in natural environments can buffer the mental health challenges associated with agricultural work (Berg et al., 2021). Furthermore, relational and affective engagements with land can counteract feelings of alienation produced by industrial farming structures (Carolan, 2022), offering pathways toward more grounded, emotionally resonant forms of practice.

Taken together, these findings highlight the centrality of nature connection not only as an affective dimension of agroecological transition, but as a practical, epistemic, and psychological resource that supports the skills, resilience, and orientations required for deeper systemic change. In this sense, nature connection functions as both a catalyst and a consequence of agroecological transformation, sustaining farmers as they navigate uncertainty, rework inherited paradigms, and cultivate new modes of relational farming.

7.5.5 Tensions and Trade-offs: Living with Contradiction

Despite this depth of connection, many farmers also acknowledged the tensions and trade-offs involved. Livestock farmers, in particular, described the emotional and ethical complexity of raising animals for slaughter, even within systems of high welfare and ecological care. “We’ve chosen to eat animals,” one said, “but we should do that with responsibility, not denial.” Others noted discomfort with certain practices but justified them on the grounds of “least harm”, arguing that pasture-based, low-input systems were more humane than industrial models.

These tensions are not failures, but signs of ethical engagement. As Haraway (2008) argues in *When Species Meet*, multispecies relationships are always messy, ambivalent and co-constituted. What matters is not purity, but response-ability: the capacity to be present to the realities of entangled life and to act with care and humility, having the headspace for the ability to respond to the complexity of the situation.

Similarly, the land itself was not romanticised. Farmers spoke of hard decisions, ecological trade-offs, and financial constraints. One participant described setting aside a productive field for habitat connection, not because it made economic sense, but because “it was greater than the sum of its parts”. Others described difficult transitions, failed experiments, or balancing conservation and production goals. These reflections ground the discussion in reality, revealing a transformation that is principled but not purist, guided by care rather than ideology.

7.6 Identity, Autonomy and Navigating Agroecological Complexity

Agroecological transitions as transformation, do not occur in a social vacuum. They entail not only shifts in land management or production systems, but also in identity, legitimacy, and power. For farmers, this means navigating a symbolic and practical terrain where notions of “good farming” are deeply embedded in both personal biography and wider agrarian culture. This has already been explored in relation to knowledge and learning, but in this section I will show how identity and autonomy mediate agroecological change, drawing on the concepts of symbolic capital, socio-cultural habitus, and situated agency within transition processes.

7.6.1 The Symbolic Power of the “Good Farmer”

The concept of the “good farmer” is not merely an individual aspiration, it is a socially constructed identity, co-produced through community recognition, institutional signals, and peer-to-peer comparisons (Burton 2004; Sutherland & Burton, 2011; Burton et al., 2020). Across interviews, participants reflected on how their farming decisions were shaped not only by technical constraints, but by the visible and tacit judgments of neighbouring farmers, advisors, family members, and wider rural publics. This reflects what Burton (2004) conceptualises as symbolic capital: the reputational currency accrued through adherence to dominant symbols of agricultural competence: neatly ploughed fields, large machinery, high yields, and a tidy appearance.

However, such symbols are not universal or fixed. Rather, they are socially situated and mutable, and the results in this thesis suggest that they are being renegotiated through peer-led cultural shifts. Within emerging agroecological communities, the “good farmer” is

increasingly defined by attributes such as attentiveness, ecological literacy, biodiversity enhancement, and soil regeneration. These new markers of competence, while less visible or aesthetically celebrated in conventional agriculture, are gaining symbolic traction within alternative networks.

What becomes clear is that peer-to-peer relationships are critical to this redefinition process. Farmers described how informal groups, WhatsApp networks, discussion groups, or field visits offered moral and epistemic validation, beyond knowledge and learning. These were spaces where agroecological “alterity”, practices that diverged from the norm, was not interpreted as incompetence, but praised as innovation, courage, or ethical leadership. Rather than being isolated, many farmers drew confidence from witnessing others experiment and succeed with similarly “messy” or “unconventional” systems. As one participant noted, “when you see someone else do it, and it works, suddenly it doesn’t feel so risky anymore.”

Habitus shifts in farming require not only internal conviction but external affirmation (Sutherland et al., 2014). It is within these peer spaces that new legitimacy is forged, (Ingram, 2018) allowing farmers to hold onto a sense of pride and professionalism even as they break from dominant norms. These relationships function as cultural scaffolding, supporting identity reconstruction and buffering against the stigma often associated with non-conformity, where farmer learning is relational and identity-transformative (Lankester, 2013a).

Importantly, these peer networks do not just reinforce individual behaviours, they actively participate in constructing a new symbolic order. Through shared language (e.g., “soil health,” “mob grazing,” “resilience”), collective storytelling, and affective solidarity, they create a normative landscape in which ecological stewardship is equated with moral competence. This shift is also performative: farm walks, social media posts, and before-and-after photos become new rituals of credibility, where success is shown not through yield metrics, but through signs of ecological recovery.

This emerging culture challenges the traditional mechanisms through which agricultural prestige is distributed. Whereas the conventional good farmer earned respect by conforming to productivist ideals, today’s agroecological practitioner is increasingly valorised for

difference, for resisting dominant logics, re-valuing land, and experimenting on their own terms. In this context, alterity becomes a badge of distinction, not a mark of failure. Legitimacy is no longer granted by formal institutions alone, but co-produced in communities of practice where care, curiosity, and courage are key currencies. This extends Riley's (2016) argument that long term participation in agri-environmental schemes reshapes values among peers and in fact demonstrates this is possible in far less structured settings without practice associated payment outcomes.

7.6.2 Autonomy and the Pursuit of Place-Based Solutions

A key theme across the data was the desire for autonomy, to make decisions based on local knowledge, observation, and experience, rather than external prescriptions. Many participants expressed scepticism towards top-down directives or one-size-fits-all solutions, arguing instead for approaches that are context-specific and adaptive. One described agroecology as “getting on board with how nature is, to help us with our farming”. Another spoke of learning “what works for us, not what someone else says will work”. These accounts highlight autonomy not just as a governance preference, but as a core element of farmer identity: being a “good farmer” meant being able to read one's own land, trust one's judgement, and take responsibility for the consequences of one's decisions. Farming identities are constructed around competence, stewardship, and independence, and are continually evaluated through both self-perception and peer recognition (Burton, 2004). Participants frequently articulated autonomy as a rejection of being treated as a “contractor for policy” or a mere implementer of technical advice. Instead, participants framed themselves as knowledgeable custodians of specific places, whose expertise derives from long-term, embodied engagement with land and livestock. This reflects the idea of “in-place” farmer identities, in which belonging and attachment to particular landscapes underpin both practice and self-understanding (Emery, 2015), and that memory, emotion, and place are woven into what it means to be a farmer (Riley, 2011).

This emphasis on autonomy aligns with broader agroecological principles, which advocate for place-based decision-making, co-learning, and farmer-led experimentation (González de Molina et al., 2019; Altieri & Nicholls, 2020). Rather than being passive recipients of innovation, participant farmers were active agents, selectively adapting practices to suit their soils, livestock, landscape, and values. In doing so, their changes in practice are tied to

shifts in values, worldviews, and self-conceptions (Anderson et al., 2021). For several participants, adopting agroecological or regenerative approaches was not simply a technical transition, but part of becoming a different kind of farmer: one who sees themselves as working with, rather than against, ecological processes.

Yet this autonomy was not framed as rugged individualism. On the contrary, it was often enabled and strengthened through the already discussed social learning networks. The freedom to farm differently depended not only on internal conviction, but on access to knowledge, support, and validation from peers. Farmers described how seeing others experiment, succeed, or fail made it easier to justify their own departures from local norms, reducing the social risks associated with breaking from conventional expectations of “good farming”. Agency in agricultural innovation is fundamentally collective, emerging through interaction, negotiation, and shared sense-making rather than residing solely in isolated individuals (Leeuwis and Aarts, 2011). Resistance to dominant models is often socially mediated: farmers draw on peer recognition, new networks, and alternative communities of practice to sustain identities that diverge from productivist ideals (Sutherland and Burton, 2011)

Taken together, the data suggest that autonomy in agroecological transitions is best understood as relational autonomy: the capacity to act in ways that are faithful to one’s place, values, and understanding of good farming, made possible by being embedded in supportive networks of people, practices, and more-than-human others. Identity is central here. Farmers were not just changing what they did; they were renegotiating who they were, and who they were answerable to, whether markets, landlords, their local farming community, their peers in learning groups, or the land itself as they shifted from extraction to a practice of care.

7.6.3 Navigating Paradoxes: Regenerative Yet Extractive, Conventional Yet Shifting

A defining feature of many accounts was the presence of paradoxes, seemingly contradictory dynamics that farmers were constantly negotiating. Several participants expressed pride in reducing inputs and regenerating soil, while simultaneously acknowledging that parts of their system remained extractive or reliant on industrial tools. One described using regenerative grazing to improve biodiversity but still feeding imported concentrates to meet

market demands. Another questioned whether “500 acres not producing even one Weetabix” could still be called farming.

These reflections mirror what Sutherland et al. (2012) describe as “tensions within transition”, the gaps, inconsistencies, and negotiations that arise when farmers operate between competing logics. Agroecology may be the aspiration, but market structures, tenancy agreements, family expectations, or climatic limitations pull practice in different directions, adding weight to Abson et al.’s (2017) argument that it is the three levers collectively that enable transformation, the restructuring of governance is critical in widespread shift in practice.

However, and importantly, participants did not frame these contradictions as failures. Instead, they embraced a pragmatic, iterative approach: making what changes they could, recognising trade-offs, and staying open to continual learning. This kind of adaptive practice reflects Hinrichs’ (2014) notion of “bounded transformation” change that is partial, negotiated, and contextually constrained, but nonetheless meaningful.

This messiness does not undermine the significance of transition; rather, it reveals its real-world complexity. Farmers are not switching paradigms wholesale, but navigating an uneven terrain of values, constraints, and opportunities depending on and critically informed by a strong cognitive engagement with and awareness of their own specific contexts. Their stories resist simplistic binaries, such as conventional vs. alternative, and instead illustrate what Bell (2004) calls the “hybrid pragmatism” of everyday life.

7.6.4 Identity Work and Redefining Success

Several farmer participants described how their process of transition had required not just technical learning, but identity work: questioning inherited assumptions, reframing what success looked like, and reimagining their role. “It’s not about maximising yield anymore,” one explained, “it’s about working with nature, building health, and leaving the land better than I found it”. Others spoke of becoming “land stewards,” “ecosystem managers,” or simply “good ancestors.” Such narratives reflect a reorientation away from productivist identities and towards forms of identity grounded in care, responsibility, and intergenerational ethics.

This identity work often involved conflict, with family members, neighbours, advisors, or even internalised expectations of what a “proper” farmer ought to do. One participant described “reprogramming” their farming mindset, while another noted how difficult it was to justify ecological practices to more conventional colleagues. Farming identities are relationally produced, shaped by local norms, social expectations, and the need for recognition (Emery, 2010; 2015). As discussed already, departing from established models of “good farming” often requires farmers to negotiate tensions between autonomy and belonging, as they balance a desire to act differently with the emotional cost of appearing deviant within their community (Emery, 2010; 2015; Letourneau & Davidson, 2022).

These tensions underscore that agroecological transition is a transformational process not only of farming systems, but of farmer selves. Shifts in farming practices are deeply entangled with emotional labour, social legitimacy and the symbolic value of competence (Burton & Wilson, 2006; Fischer & Burton, 2014). The “good farmer” identity is not easily relinquished; it must be consciously reconstituted in new terms, often through crafting alternative standards of success rooted in ecological health or care rather than yield or technological mastery (McCracken et al., 2015). Farmers reconstruct identities through new narratives of stewardship, community engagement, and environmental responsibility, narratives that can both challenge and reproduce aspects of agrarian tradition.

Yet in doing so, many participants in this study found renewed meaning in their work. Several described how farming with ecological values rekindled a sense of purpose or connected them to their community in new ways. Others spoke of the joy of noticing more, feeling less pressure, or creating habitats they were proud of. These were not peripheral benefits but motivational anchors, supporting the emotional resilience needed to sustain change. Meaning-making is central to how farmers navigate uncertainty and negotiate new identities (Emery, 2010), transformation is sustained not only by technical outcomes but by the affective rewards of aligning practice with values.

7.6.5 Place, Legacy and More-than-Individual Motivations

Farmers frequently spoke about their land as a place rich with memory, emotion, and intergenerational meaning, describing fields, hedgerows, and waterways as living records of past decisions and future hopes. Several participants talked about particular fields with a

sense of inheritance and obligation, noting how the history embedded in a place shaped their daily choices; such accounts reflect the significance of embodied routines, inherited knowledge, and emotional attachments in shaping farmer–land relations (Riley, 2008; 2011). Participants also described a desire to leave a positive legacy, speaking of the satisfaction of watching restored habitats flourish or of improving soil for the next generation, experiences that demonstrate how visible markers of care, such as thriving hedgerows or healthy pastures, become expressions of ethical and cultural responsibility (Burton & Paragahawewa, 2011). For many, attachment to place was not static sentiment but an active orientation that informed ecological decision-making, suggesting that local rootedness can be a foundation for outward-looking environmental commitments (Wittman et al., 2010).

Several farmers described how their interactions with schemes, monitoring practices, and peer learning networks reshaped their awareness of ecological processes, noting that learning to notice soil structure, pollinators, or water quality changed how they understood their role. These accounts illustrate how environmental subjectivities are formed through everyday interactions with land, institutions, and community norms, as farmers' identities shift alongside their practices (Agrawal, 2005; Sultana, 2011). Across the interviews, place attachment, legacy, and environmental ethics were inseparable, indicating that agroecological transition was experienced not only as a technical change but as an evolving way of being in and caring for place.

Importantly, these motivations often extended beyond individual or financial gain. Farmers described their work in terms of custodianship, social contribution, and ecological care. Several mentioned the desire to create something lasting, not just profit, but ecological and social legacy. In this way, agroecological transition was framed as a collective, intergenerational project, one that demanded both courage and humility and that further enhances the concept of agroecological transition as system transformation.

7.7 Systems Thinking and the Politics of Agroecological Transformation

So far in this chapter, I have shown how agroecological transitions involve shifts in learning, identity, relationships, and values. These changes point to something more fundamental: a transformation in how farming is conceptualised and practiced as a system. In this section of the discussion, I synthesise the findings through the lens of systems thinking, considering the

conceptual, methodological, and political implications of framing agroecological transition as system transformation not as a set of technical fixes or individual practices, but as a deep, relational, and structural change underpinned by a connection with nature. In doing so, this chapter returns to the work of Abson et al. (2017), whose framework of “deep leverage points” has been used throughout this thesis as a structuring device.

7.7.1 Agroecological Transition Depends on System Transformation

In this thesis I have shown that agroecological transition cannot be meaningfully understood through the lens of discrete practice adoption, technological substitution, or policy shifts in isolation. Instead, it must be conceptualised as a system transformation: a multi-dimensional, emergent process that reconfigures the interrelations between cognitive, ethical, ecological, social, and institutional domains.

This is consistent with complexity thinking in sustainability science, which recognises that agri-food systems are complex adaptive systems: non-linear, dynamic, and characterised by feedback loops, thresholds, and co-evolutionary change (Klerkx et al., 2012; Leach et al., 2012). In such systems, interventions in one domain (e.g. practice) reverberate across others (e.g. values, relationships, governance), and change often emerges indirectly or unpredictably.

As articulated by Abson et al. (2017), truly transformative change occurs at the deep leverage points, those related to the design and intent of the system: the worldviews, goals, and paradigms that shape how people understand and act in relation to sustainability. This stands in contrast to shallow leverage points, such as material parameters or policy incentives, which often fail to disrupt entrenched patterns of unsustainability (Meadows, 1999). The participant interviews vividly illustrate how farmers are engaging these deeper levers: redefining what it means to farm well, reconfiguring their relationships to land and animals, and embracing new ecological and ethical imaginaries. Yet these shifts are not uniform or linear. Agroecological transition is situated, negotiated, and contested. It unfolds within historically embedded landscapes, socio-political structures, and biophysical constraints. Farmers from the cohorts in this study are not enacting transformation by following a fixed blueprint. Rather, they engaged in iterative processes of sense-making, experimentation, and re-alignment, guided by observation, peer learning, and emerging

feedback from their farms and environments. This situational complexity is critical, it reveals that transition is not a smooth arc from conventional to alternative, but a messy negotiation involving contradictions, partial changes, and continual recalibration. Many farmers described operating between paradigms, adopting ecological principles while still reliant on industrial inputs, or striving for autonomy while constrained by tenancy or market dynamics. This hybridity is not a sign of failure but an expression of systemic friction, a hallmark of transformation in complex systems (Westley et al, 2011).

Moreover, this thesis underscores that agroecological transformation is not purely ecological or technical. It is also institutional, social, and ontological. It involves shifting how farmers see themselves (e.g. from producers to stewards), how success is measured (e.g. from yield to soil regeneration), and how relationships are valued (e.g. from instrumental control to reciprocity). These shifts require new institutional arrangements, such as farmer-led networks, knowledge commons, and policy frameworks that allow space for contextual experimentation and non-standardised outcomes.

What emerges is a view of agroecological transition as a relational and recursive systems process, shaped by ongoing interaction between actors, ecologies, histories and ideas. This framing helps resist overly technical or instrumental approaches to transition that focus narrowly on innovation adoption or behavioural “nudges.” Instead, it aligns with critical agrarian scholarship that views transformation as political, affective, and situated within relations of power and meaning (Scoones et al., 2020; Anderson et al., 2021). In short, the transition documented here is not about replacing one set of practices with another, but about re-patterning systems of knowledge, values, and practice in ways that are attuned to ecological complexity, social justice, and local experience. It is not a shift from system A to system B, but a deep, iterative process of rethinking what systems are and who they serve with a fundamental economic imperative, shaped by connection to nature.

7.7.2 Refusing Reductionism: Holding Complexity in View

Rather than treating transition as a matter of swapping one set of techniques for another, I show in this thesis that farmers are actively working through what change *feels like* and what it *demand*s of them. Across the interviews, agroecology emerged not as a tidy sequence of steps but as a continual process of re-patterning, of testing boundaries, renegotiating risks,

and recalibrating what counts as a good decision. This goes beyond “adoption” and moves into the territory that Stirling (2011) describes as plural and context-specific pathways: farmers navigating uncertainty with whatever combinations of practices, heuristics and histories make sense to them at the time. Their adjustments rarely resembled a linear model of transition, instead they were indicative of processes of improvisation, grounded judgement, and negotiation under pressure.

This is why technocratic framings of agroecology fall short. The farmers in this study were not implementing external blueprints; they were creating situated responses informed by external observations, shaped by land, family, finances, weather, neighbours, and memory. Such findings echo critical agrarian scholarship that highlights how transition is constrained and enabled by political–economic realities as much as by technical opportunity (Anderson et al., 2021). Yet, rather than paralysis, these constraints prompted partial and adaptive solutions - what Grint (2008) calls “clumsy solutions” - assembled from intuition, experience, institutional opportunity, and ecological observation. What changed over time was not simply *what* farmers did but *how* they understood the system they were working within.

This is where nature connection becomes central. It was not an abstract sentiment but a way of seeing that shifted farmers’ sense of economic possibility. Many described how closer observation, attention, and reciprocity with the land recalibrated their understanding of risk, altered their thresholds for intervention, and legitimised experimentation that previously felt irrational. This is less a paradigm shift than the kind of bounded, materially constrained transformation Hinrichs (2014) describes, incremental but meaningful, shaped by daily encounters with soils, weather, plants, animals, and the limits of their own capacities.

The diagram (Fig. 7.1) that follows distils this dynamic process and provides a conceptual synthesis of the thesis as a whole. It visualises agroecological transition not as a linear progression from one farming system to another, but as a patterned and ongoing reorganisation of relationships, meanings and material practices. At its centre lies nature connection, understood here not as an abstract value or affective disposition, but as a mode of attention and responsiveness grounded in observation, reciprocity and lived engagement with ecological processes. This relational orientation functions as a generative centre of gravitational pull within the system, shaping how farmers perceive land, animals, risk and opportunity.

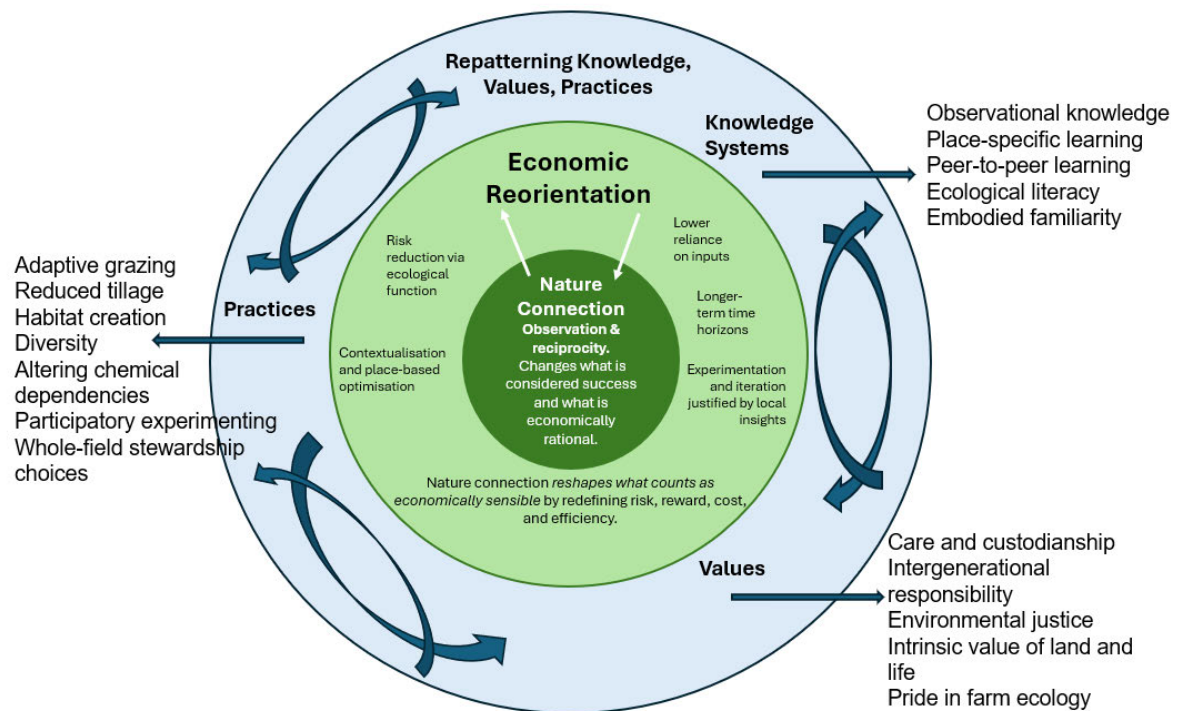


Figure 7.1 A Living Systems Transformation: Economics and Practice Reoriented Through Nature Connection

From this centre, the diagram illustrates a process of economic reorientation that is inseparable from ecological attunement. As farmers deepen their connection to soils, vegetation, animals and seasonal rhythms, they begin to reassess what counts as economically sensible, viable or risky within their specific contexts. Economic reasoning is not displaced by ecological concern, but reworked through it. Risk is increasingly interpreted in terms of dependency on external inputs and ecological fragility rather than short-term yield variability. Efficiency is reframed around resilience, adaptability and long-term system function. Success becomes tied to the capacity of the farm to respond to environmental signals and sustain itself through uncertainty. In this way, nature connection and economic orientation are shown to be co-constitutive rather than competing dimensions of decision-making.

Crucially, the diagram does not present economic reorientation as an intermediate stage or a discrete layer that precedes changes in practice. Instead, it functions as a mediating and relational space through which knowledge, values and practices are continuously

repatterned. Shifts in economic reasoning emerge alongside, and are reinforced by, transformations in how farmers know, what they value, and how they act. Observational and place-specific forms of knowledge gain legitimacy as farmers learn to read ecological feedback and trust experiential insight. Values associated with care, custodianship, intergenerational responsibility and pride in farm ecology become embedded not only as ethical commitments but as practical guides for action. Practices such as adaptive grazing, reduced tillage, habitat creation and participatory experimentation arise through this ongoing negotiation between ecological signals, economic judgement and lived experience.

The circular and recursive structure of the diagram is therefore central to its analytical intent. The arrows do not indicate a sequence of steps but a continual movement of feedback and adjustment. Changes in practice generate new ecological responses, which in turn reshape observation and understanding, further influencing economic reasoning and reinforcing or revising values. Transformation is enacted through this iterative circulation rather than achieved through the adoption of a predefined endpoint. The diagram thus captures the messiness of agroecological transition as it unfolds in practice, characterised by uncertainty, experimentation and ongoing learning rather than linear progress or stable outcomes.

By foregrounding this relational dynamic, Figure 7.1 also clarifies the core argument of the thesis. Agroecological transformation is not adequately understood through models that separate economics from ecology, or values from practice. Instead, it emerges through the co-evolution of nature connection, economic reasoning and systems of knowledge and value, each shaping and being shaped by the others. The diagram provides a conceptual anchor for this argument, showing how farmers enact transformation through everyday acts of attention, interpretation and response within complex living systems. In doing so, it positions agroecology not as a technical alternative to conventional farming, but as a fundamentally different way of organising relationships between people, land and livelihoods over time.

7.7.3 Nature Connection at the Heart of Transformation

As I have shown in this chapter, farmers in this study understood the relationship between nature connectedness, agroecological values, and the transformation of their practices as

mutually constitutive and unfolding through an ongoing process of personal and system-level renegotiation. Nature connectedness functioned as a perceptual and ethical shift that enabled farmers to re-evaluate what mattered in their farming systems, echoing Emery's (2015) observation that farmers' transitions often involve deep identity work and the reorientation of self-understandings in relation to land and community. Many described how heightened attentiveness to soil, bird activity, insect populations, plant diversity, and livestock behaviour altered their interpretation of what was happening on their farms. This mirrors findings from transformation theory that perception precedes action: shifts in how farmers *see* their environments enable ontological adjustments in how farming systems are understood and enacted (Brown & Westaway, 2011; Marshall et al., 2012). As farmers' ecological literacy deepened, agroecological values such as reciprocity, restraint, and care acquired practical force, shaping not only what decisions were made but how those decisions were justified. Relational entanglements with soils, animals, and weather patterns, sometimes termed "response-ability" (Haraway, 2016) made certain choices feel necessary rather than optional, and repositioned nature as an active collaborator rather than a passive backdrop.

These shifts directly shaped motivations, decision-making, and the pathways farmers followed through transition. Nature connectedness acted as a motivational anchor that sustained change through uncertainty. When farmers spoke about reducing fertiliser, altering grazing rotations, creating habitat, trialling diverse leys, or accepting lower-yield outcomes, they rarely framed these decisions as purely technical or economic. Instead, they rooted them in a recalibrated sense of what constituted good farming, an epistemic shift from control to co-creation, and from short-term optimisation to longer-term ecological viability (Ingram, 2018; Kremen et al., 2012). Nature connectedness also influenced *how* transitions unfolded: farmers described incremental, exploratory adjustments rather than wholesale redesign, aligning with conceptualisations of transition as emergent, relational, and "bounded" within material and institutional constraints (Hinrichs, 2014). As perception changed, so did temporal horizons: farmers became more comfortable working with delayed returns, more tolerant of ecological variability, and more willing to experiment at a pace set by land rather than by markets. In this way, nature connectedness reoriented what counted as rational, possible, and desirable, ultimately shaping the diverse, context-specific

agroecological trajectories documented in this study. As depicted in Figure 7.1, nature connection operates as a generative centre, reorganising economic logics, values, knowledge systems, and practices in a living, iterative process of agroecological transformation. Rather than abandoning economic considerations, this shift reframes what is understood as viable, efficient, or risky within the farming system. As farmers attend more closely to soil function, weather patterns, species interactions, and the character of their particular place, they begin to perceive ecological processes as economic assets rather than constraints. Input reduction becomes a form of active risk management rather than sacrifice, diversity becomes a route to stability rather than inefficiency and long-term soil fertility becomes more meaningful than short-term yield. Decisions around livestock breeds, crop choices, field configuration, grazing rhythms, and stewardship uptake are re-evaluated through this lens, generating forms of economic reasoning grounded in ecological observation and reciprocity. In this way, nature connection does not sit outside the financial realities of farming: it actively reorganises them, creating a basis for economic resilience that emerges from the ecological integrity of the farm itself. Whilst Chanarin et al. (2022) reflected that agroecological approaches could offer direct economic benefits to farmers by decreasing reliance on inputs and enhancing production resilience, they modelled that, fundamentally, agroecological farms could not be profitable without improving access to current and future payments for ecosystem services. In this thesis I have shown that the experience of farmers across the five cohorts paints a different picture. By framing agroecological transition as system transformation rather than practice adoption, and recognising that change is iterative, co-produced, relational and complex, economic viability and biodiversity outcomes co-develop in a process of transformative change, even on farms where agroecology is an alien phrase.

Through this framing, agroecology is not presented as an alternative, counter hegemonic approach that is relevant only to smaller farms or those committed to alternative food networks. Instead it is a characterisation for farms that centralise natural processes in their farm business, not as a mode for distinct ecosystem service payments, but as a route through which they navigate change and maintain relevance and resilience in a volatile world.

7.7.4 Tensions and Alignments Between Nature-Connected Farming and Policy/Market Structures

The farmers participating in this research undertake nature-connected practices that sit within a landscape of both alignment and tension with existing policy and market structures. Many participants framed their work in terms strongly resonant with the evolving policy discourse around “public goods” and agroecological or regenerative land management. This reflects a broader shift in the UK’s CAP reforms, where agri-environment schemes explicitly seek to reward biodiversity, soil health and landscape stewardship (Potter & Burney, 2002; Winter & Lobley, 2016). In principle, farmers practising low-input grazing, creating habitat mosaics, restoring hedgerows or improving soil structure are precisely the actors such schemes are designed to support. Yet farmers were deeply sceptical that these frameworks will sustain the kinds of knowledge-intensive, adaptive systems they are developing. This disjuncture mirrors wider critiques of agri-environment policy, which note persistent gaps between ecological ambition and scheme design, such as short contract cycles, restrictive prescriptions and insufficient payments often undermine the potential for long-term ecosystem restoration (Dupraz & Guyomard, 2019; Mills et al., 2021).

These tensions are intensified by the structural forces that shape UK agriculture. Commodity markets continue to valorise volume, uniformity and short-term output rather than ecological integrity, reinforcing what Marsden (2013) calls the “productivist lock-in” of the agri-food system. Farmers described how schemes discourage certain regenerative or nature-connected actions, or fail to compensate for lost productive capacity, reinforcing findings that market and policy institutions systematically undervalue ecosystem services and the relational labour of ecological care (Wezel et al., 2020). Such lock-ins are unevenly experienced. Owner-occupiers, mixed farms and those embedded in conservation networks often had the autonomy to experiment and absorb short-term risk. Tenant farmers, highly leveraged businesses and contract growers reported far narrower margins of manoeuvre. This is consistent with analyses showing that land tenure, capital constraints and path dependency shape who can innovate ecologically and who cannot (Cary & Wilkinson, 1997; Anderson et al., 2021).

Against this structural backdrop, farmers’ nature-connected practices represent forms of alignment with deeper transformative logics of agroecology, particularly where policy goals

gesture towards multifunctionality, resilience and ecological restoration (Lamine, 2012; Gliessman, 2016). The collaborative infrastructures represented in the participant cohorts such as cluster groups, membership organisations, WhatsApp networks, grazing group, embody precisely the decentralised, iterative and participatory forms of innovation that agroecological scholars identify as central to transformation (Warner, 2008; Berthet et al., 2016; Kroma & Flora, 2003). These groups enable farmers to test ecological hypotheses, pool experiential knowledge and embed learning in place-specific conditions. They reflect an ethos of peer-to-peer co-production, aligning with the argument that agroecology requires democratic, context-sensitive knowledge politics rather than top-down dissemination of “best practice” (Cleveland, 2014; Pimbert, 2018).

A significant insight from the research is the epistemic dimension of this tension. Farmers’ knowledge is not only technical or scientific, but also embodied, affective, intuitive and sensory, constituted through observation, memory, failure and attunement to the more-than-human world. These modes of knowing are foundational to nature-connected farming, yet they sit uncomfortably within dominant agricultural knowledge systems that privilege formal expertise and universalised prescriptions (Jasanoff, 2004; Ingram, 2008). Scholars have described this as epistemic injustice in agricultural development, where farmers’ situated insights are undervalued or rendered invisible (Coulson & Milbourne, 2020). In this context, agroecology emerges as not only a set of practices but an epistemological and political proposition: a call for knowledge systems that are iterative, plural and democratised (Rosset & Martínez-Torres, 2012; Mendez et al., 2015).

Interventions that seek to better support transformation at the farm scale must therefore engage with deep leverage points (Abson et al., 2017): reconnecting people to nature, restructuring institutions and rethinking dominant knowledge regimes. At the policy level, this implies long-term, secure and adequately funded agri-environment schemes; flexible, co-designed options rather than restrictive prescriptions; and reward structures that value ecological labour, experimentation and adaptive management. At the market level, interventions might include protected supply chains for agroecological produce, public procurement policies valuing high-nature-value farming, and cooperative marketing infrastructures that buffer farmers from volatile commodity markets (Hinrichs, 2014; Darnhofer, 2014). At the level of knowledge and governance, sustained investment in

farmer-led research, participatory monitoring, landscape-scale co-learning groups and agroecological living labs would create enabling conditions for the kinds of peer-to-peer innovation documented here (Chambers et al., 1989; Levidow et al., 2014; Schiller et al., 2020).

Ultimately, while farmers' nature-connected practices often misalign with current policy and market structures, they also illustrate a powerful grassroots momentum for transformation. Many participants were not waiting for institutional permission: they were already testing alternatives, recalibrating economic reasoning through ecological attunement, and building decentralised infrastructures of support. Such initiatives show how transformation can proceed even within structural constraints, by cultivating new values, knowledge systems and social relationships that reconfigure what farming is, what it is for, and what forms of value it can sustain.

7.8 Chapter Summary

In this chapter I have explored agroecological transition as a dynamic and multifaceted process shaped by values, relationships, identities, and systemic feedbacks. Rather than treating transition as a technical challenge or a linear shift in practices, the discussion has framed it as a form of system transformation, unfolding across interlinked domains of knowledge, care, autonomy, and meaning.

Drawing on the leverage points proposed by Abson et al. (2017), the analysis has shown that deep change requires more than tinkering at the edges of farming systems. It involves rethinking how farmers learn, shifting from passive knowledge transfer to experiential, relational, and place-based learning, reconnecting with the ecological and social worlds in which farming is embedded, and restructuring the relationships, institutions, and knowledge systems that sustain it. These leverage points are not discrete categories but mutually reinforcing dynamics. Change in one domain, such as how nature is perceived and responded to, reshapes economic reasoning and in turn repatterns values, knowledge systems, and everyday practices, reinforcing transformation through continuous feedback.

Central to this transformation is recognising the more-than-human, or in 'farmer-speak', nature, not as a backdrop or a stakeholder, but as a vital member of the team: an active

agent whose processes, signals, and relationships are fundamental to how financial viability, risk, and resilience are understood and enacted within the farming system. In the agroecological systems described by participants, nature is not an externality to be managed or minimised, but a co-creator of value. Farmers spoke of responding to soil, weather, and wildlife as sources of knowledge and indicators of system health; of timing grazing to forage growth, or observing how birds and insects signal ecological balance. This goes beyond symbolic connection, it is a recognition that ecosystem function is not optional, but structurally integral to farm success. Nature's role is dynamic and reciprocal, shaping decision-making as much as it is shaped by it.

The findings highlight that farmers engaged in agroecological transition are not merely adopting a new set of techniques. They are navigating complexity, making situated and sometimes contradictory decisions, and reconstructing their sense of self and place within evolving landscapes. Their work resists binary classifications, between conventional and alternative, extractive and regenerative, and instead exemplifies the messy, creative, and iterative character of real-world transformation.

Central to this transformation is the importance of peer networks, social learning, and epistemic plurality. Knowledge is not transmitted from expert to farmer but emerges through dialogue, experimentation, observation, and trust. The legitimacy of new approaches is negotiated through social interactions and symbolic capital, where being a "good farmer" is redefined in ways that elevate ecological care and systems thinking.

This thesis also argues that care and connection are not incidental by-products of agroecological systems but foundational elements. Relationships with animals and land are reimagined not as extractive but as co-creative, involving attentiveness, responsibility, and reciprocal agency. These values are not imposed by policy or market forces but are cultivated through practice, reflection, and ethical labour.

Yet the findings also make clear that transition is not without limits. Structural constraints, including economic pressures, policy incoherence, tenancy insecurity, and social norms, shape what is possible. Many farmers operate within tensions: between market demands and ecological goals, between inherited norms and emerging ethics, between autonomy and

interdependence. These tensions do not negate transition but reflect its grounded and lived complexity.

In centring farmer voices, this thesis contributes to agroecological theory by grounding high-level concepts in the realities of UK farming systems. It affirms that agroecology is not only a science or a set of practices, but a way of knowing, being, and relating, one that is deeply political and fundamentally hopeful. It is a mode of transformation that does not demand purity or perfection but invites situated action, ethical reflexivity, and collective experimentation.

Ultimately, agroecological transition is a story of relational change: between people and place, between past and future, and between humans and the more-than-human world. The farmers in this study are not only adapting to new challenges; they are co-authoring new possibilities. Their experiences suggest that transformation is not only necessary, but already underway, in the fields, minds, and relationships of those who are reimagining what it means to farm well.

Chapter 8 – Conclusion

8.1 Aims, Scope, and Conceptual Framing

This thesis set out to understand how UK farmers make sense of, and act within, the shifting terrain of agroecological transition, with a particular focus on the role of nature connectedness in shaping values, decision-making, and pathways of change. Rather than treating transition as a technical process defined by the uptake of prescribed practices, the research aimed to explore how agroecological change is negotiated by farmers within the material, economic, and institutional realities of contemporary agriculture (Duru et al., 2015; Lamine, 2011).

Through a multi-sited qualitative enquiry including walking interviews and extended conversations via WhatsApp, this study engaged farmers across arable, upland, lowland grazing, mixed and organic systems. This approach enabled close attention to how meanings, identities, relationships and ontological commitments shape farming practice over time. In doing so, the thesis contributes to a growing body of scholarship that understands agroecology not as a checklist of techniques, but as a process of system transformation involving profound shifts in how people relate to land, knowledge, markets, other humans, and the more-than-human world (Stirling, 2011; Wezel et al., 2020).

The analysis demonstrates that agroecological transition is most productively understood through the lens of deep leverage points for transformation. Drawing on Abson et al. (2017), the thesis has shown how processes of rethinking, reconnecting, and restructuring are intertwined and mutually reinforcing rather than sequential or discrete. Farmers' narratives revealed how new understandings of land and life emerged through experience, experimentation, and reflection; how emotional and sensorial relationships with nature informed everyday decisions; and how structural conditions such as tenancy arrangements, supply chain pressures, and financial precarity shaped whether alternative futures were perceived as viable (Burton, 2004; Emery, 2015). These domains formed a dynamic leverage system in which changes in thinking catalysed changes in practice, shifts in institutional or economic structures opened space for different ways of relating to land, and embodied encounters with nature fed back into farmers' motivations and commitments.

8.2 Nature Connection, Meaning, and Agroecological Practice

In addressing the first aim of the research, this thesis makes an original contribution by illuminating how farmers understand the relationship between nature connectedness, agroecological values and changes in farming practice. Participants did not describe nature as an external backdrop to production, but as an active presence that teaches, responds and thrives when conditions allow. Nature was experienced as something that could be read, learned from and worked with, rather than controlled or overridden or even sidelined to the 'hedges and edges' (Ingold, 2000; Hinchliffe, 2007).

For many farmers, nature connection emerged through everyday encounters rather than explicit environmental agendas. These included watching skylarks rise from margins, noticing how hedges sheltered livestock, observing insects return following changes in spray regimes or feeling shifts in soil structure as tillage was reduced. Such experiences were subtle, sensory, and deeply situated, yet they functioned as powerful sources of feedback and ethical orientation. Farmers described these encounters as sharpening attentiveness, and reinforcing why ecological care mattered even when market signals pushed in other directions. This supports relational accounts of environmental knowing that emphasise practice, embodiment, and place-based learning (Oreszczyn et al., 2010; Emery, 2015).

By foregrounding these lived experiences, the thesis responds directly to the research question concerning how farmers understand the relationship between nature connectedness and agroecological values. Nature connection was not articulated as an abstract belief or environmental attitude, but as a form of embodied, place-based knowing that shaped how farmers interpreted change, evaluated outcomes, and justified decisions (Agrawal, 2005).

8.3 Nature Connection, Motivation, and Pathways of Transition

The thesis also addresses how nature connectedness shapes motivations and decision-making within agroecological and regenerative systems. For some participants, connection took the form of stewardship and intergenerational responsibility, expressed through concern for soil health, biodiversity and the future viability of the farm. For others, it was articulated through more reciprocal relationships in which ecological action was guided by

the understanding that nature pays back through pest regulation, healthier soils, reduced inputs or greater system resilience (Gibson-Graham, 2011; Wittman et al., 2010).

Many farmers described affective attachments to particular places on their farms, including feelings of ease, pride or grounding associated with certain fields, hedgerows, or views. These attachments were not peripheral emotions, but structuring influences on decision-making. They informed choices such as reducing hedge cutting, extending grazing rest periods, establishing wildflower margins, leaving unproductive corners uncultivated or even entering whole-field stewardship options. Even among farmers who described themselves as conventional, nature connection surfaced in decisions to avoid sprays unless necessary, tolerate non-crop species, or retain landscape features valued by previous generations. These findings resonate with research on environmental subjectivities and place-based ethics in land management (Agrawal, 2005; Burton et al., 2008).

8.4 Economic Reorientation Through Nature Connection

A central and distinctive contribution of this thesis lies in its analysis of the relationship between nature connection and economic sustainability. Rather than treating ecological practices as something undertaken once financial security is achieved, the findings show that nature connection actively reshapes what counts as economically rational within farming systems.

Farmers described how close observation of soils, plants, livestock behaviour, and seasonal patterns altered their understanding of risk, cost, reward, and efficiency. As they began to rely more heavily on the regulating functions of their ecosystems, they came to see that healthier soils reduced input dependency, structural habitat moderated pest pressure, and longer grazing rests enhanced pasture resilience. These insights redefined what it meant for a system to be financially robust. Profitability became associated not with maximising short-term output, but with reducing vulnerability, avoiding unnecessary costs and building systems capable of withstanding climatic and market variability (Pretty, 2018; Duru et al., 2015).

Nature connection therefore recalibrated farmers' internal economic models. What initially appeared risky under conventional assumptions became sensible within a nature-connected framework. This reorientation underpinned farmers' willingness to experiment, trial new

practices, and iterate based on local feedback. Experimentation, in turn, deepened ecological understanding, reinforcing an iterative loop between observation and adjustment (Lamine, 2011). Over time, many farmers described a shift in how they defined success, placing greater emphasis on stability, resilience, and intergenerational viability rather than yield maximisation.

Crucially, this thesis shows that this economic reorientation is neither abstract nor ideological. Ecological practices were understood as foundational components of an economically resilient system, not optional add-ons. Nature connection emerges here as a driver of agroecological transition because it alters the economic logic through which decisions are justified. When farmers see their land differently, they farm differently. When they farm differently, the economics of their system change. In this sense, nature connection functions as a deep structural leverage point, redefining the parameters within which farming decisions are made (Abson et al., 2017).

8.5 Constraints, Structure, and Uneven Capacity for Change

The thesis also explicitly addresses the constraints that limit farmers' capacity to act on ecological values, even when nature connectedness is strong. Structural barriers such as insecure tenancies, limited cashflow, policy volatility, weak market incentives, and labour pressures were widespread across the dataset. Tenanted farmers in particular described narrow margins for experimentation, with ecological improvements requiring upfront investment often beyond reach (Burton & Wilson, 2006). Upland farmers operating under harsh climatic conditions and facing reduced access to post-Brexit payment schemes highlighted acute vulnerability, describing a sense of operating at a policy-driven cliff edge.

These findings demonstrate that nature connection alone does not generate transformation. Instead, it interacts with material conditions, institutional arrangements, and political-economic pressures in ways that can amplify or constrain farmers' intentions. This reinforces the argument that agroecological transition must be understood as system transformation rather than individual behavioural change (Stirling, 2011).

8.6 Identity, Knowledge, and Transformation

Extending transformation theory, this thesis demonstrates how agroecological transition involves identity work, ontological reorientation, and shifts in epistemic practice. Many

participants described how changing their farming practices required changing how they saw themselves, moving away from identities centred on yield maximisation towards roles as caretakers, collaborators with ecological processes, or learners within dynamic systems (Emery, 2014; Burton, 2004). Some expressed discomfort with labels such as regenerative or agroecological, noting that these terms risked imposing rigid ideological boundaries.

Yet their narratives revealed deep engagement with systemic thinking, including a willingness to accept complexity, uncertainty, and trade-offs between ecological and financial outcomes. Practices such as reduced tillage, cover cropping, mob grazing, or habitat creation were embedded in webs of personal meaning, social influence, and historical memory. These findings challenge narratives that portray farmers as resistant to change, instead positioning them as active agents navigating contradiction and uncertainty within structurally constrained systems (Duru et al., 2015).

8.7 Social Learning, Policy, and Methodological Contributions

This thesis highlights the importance of social learning and peer networks in shaping agroecological transitions. Farmers consistently emphasised the role of discussion groups, WhatsApp forums, clusters, field days, and online platforms in providing support, inspiration, and practical knowledge. These networks countered isolation, legitimised experimentation, and enabled farmers to witness change in comparable contexts, reinforcing findings from studies on networks of practice and farmer learning (Oreszczyn et al., 2010; Rust et al., 2021).

Policy was experienced as both enabling and destabilising. Stewardship schemes provided essential financial scaffolding for ecological work, yet post-Brexit volatility, especially in England and Wales, generated uncertainty and risk. These findings underscore the need for policy approaches that support long-term, place-based system transformation rather than short-term compliance (Padel et al., 2017).

Methodologically, the use of walking interviews enabled access to embodied and place-based insights, while sustained WhatsApp engagement extended the temporal depth of the research. Limitations include sample composition and lack of representativeness, with participants skewed towards farmers already engaged in learning networks. The thesis therefore offers depth rather than generalisability.

This thesis has addressed each of the research questions through an iterative and reflexive process, in which empirical engagement with farmers continually reshaped the analytical framing. Initial assumptions about agroecological transition as a practice-based or value-led shift gave way to a more relational and systems-based understanding, in which nature connection, economic reasoning, and structural conditions are dynamically intertwined. The following section draws these strands together, explicitly reflecting on how the research questions have been answered, and what this reveals about the prospects for agroecological transformation in the UK.

8.8 Agroecology as a Living Systems Transformation

This thesis has shown that agroecological transition is not simply a matter of adopting alternative practices, nor of persuading farmers to care more about nature. It is a living systems transformation in which ways of knowing, valuing and making a living are fundamentally reconfigured through ongoing relationships with land, people and the more-than-human world.

In answering the research questions, the findings demonstrate that farmers' relationships with nature are central to how agroecological transition is understood and enacted as well as sustained. Nature connection emerges not as an abstract environmental value, but as an embodied and experiential form of knowing that shapes how farmers interpret feedback from their land, assess risk and make decisions over time. This directly addresses Research Question 1, which explored how farmers understand the relationship between nature connectedness, agroecological values, and the transformation of their farming practices, by showing that agroecological values are grounded in lived, place-based relationships rather than externally defined principles.

In relation to Research Question 2 which asked in what ways does nature connectedness shape farmers' motivations, decision-making processes, and pathways of transition within agroecological or regenerative farming systems, the thesis shows that nature connection plays a critical role in motivating change and shaping transition pathways. Farmers described how working more closely with ecological processes altered their sense of purpose, responsibility, and possibility, often leading to incremental but cumulative shifts in practice. These changes were not linear or uniform, but emerged through cycles of observation,

experimentation, and reflection, highlighting the importance of reflexive learning within agroecological transition.

The findings also address Research Question 3 by demonstrating the central role of farmer-to-farmer knowledge exchange in enabling agroecological transformation. Across the dataset, peer networks, including discussion groups, clusters, WhatsApp groups and informal exchanges, provided critical spaces for sharing experience, validating change and collectively navigating uncertainty. These forms of exchange were not limited to the transfer of technical knowledge, but involved the co-development of values, the normalisation of alternative ways of farming and the articulation of new relationships with nature. Through these interactions, farmers were able to make sense of their own observations and experiments within a wider social and ecological context, supporting systems-level learning. Seeing similar practices work in comparable environments reduced perceived risk, while shared narratives of working with natural processes helped reframe both ecological and economic decision-making. In this way, knowledge exchange functioned as a key mechanism through which rethinking and reconnecting processes were reinforced, enabling farmers to move beyond isolated experimentation towards more coherent and sustained pathways of agroecological transition.

However, in addressing Research Question 4, the thesis reveals significant tensions between these nature-connected practices and existing policy and market structures. While there are areas of alignment, such as stewardship schemes that support habitat creation or soil management, these interventions are often partial, short-term or poorly aligned with the lived realities of farming systems. More fundamentally, dominant market structures continue to reward yield, standardisation and scale, limiting the extent to which agroecological approaches can be economically realised.

This creates a disjuncture between the alternative economic logics emerging through nature-connected practice and the prevailing economic frameworks within which farmers must operate. As shown in this thesis, working more closely with ecological processes can enhance economic resilience by reducing input dependency, stabilising production and improving adaptive capacity. Yet these forms of value, resilience, reduced risk, and long-term system health, are rarely recognised or rewarded additionally within existing market and

policy systems. Instead, farmers are often required to translate these benefits into short-term financial returns, reinforcing conventional metrics of productivity.

Farmers described navigating these tensions pragmatically, often adopting hybrid strategies that balance ecological intentions with financial necessity. In doing so, they operate within, rather than fully beyond, dominant economic structures, selectively integrating agroecological approaches where they are economically viable while maintaining elements of conventional practice to manage risk. This highlights the need for policy and market interventions that more fully recognise and support the economic contributions of nature-connected farming systems, particularly in relation to resilience and public goods provision.

These findings suggest that current policy and market frameworks are insufficient to support agroecological transformation at scale. Interventions that focus on discrete practices or environmental outcomes fail to engage with the deeper relational and systemic shifts identified in this research. Instead, there is a need for approaches that recognise and support the co-evolution of rethinking, reconnecting, and restructuring processes. This includes long-term, place-based policy frameworks, market mechanisms that reward resilience and ecological function, and institutional support for farmer-led experimentation and learning.

Reflecting on the research process itself, this thesis has involved a reflexive learning journey in which engagement with farmers reshaped the conceptual framing of agroecological transition. The Re-think, Re-connect, Re-structure framework emerged not as a predefined model, but as a way of making sense of the complex, interdependent processes observed in practice. This highlights the importance of methodological approaches that remain open to emergence, and that centre farmers' own narratives and experiences in understanding transition dynamics.

Looking forward, the findings point towards a future research agenda focused on transformation for resilience. This includes the need to better understand how nature connection develops over time and across different farming contexts; how economic and policy systems can be redesigned to support resilient agroecological systems; and how collective forms of organisation, such as cooperatives or place-based supply chains, might enable farmers to capture more value from agroecological production.

Ultimately, this thesis argues that the future of agroecology in the UK depends not only on changing practices, but on reshaping the conditions within which farming takes place. Nature connection, as revealed in this research, is a critical driver of this process, linking ecological understanding with economic resilience and long-term commitment to change. Recognising and supporting this connection offers a pathway towards agricultural systems that are not only more sustainable, but more adaptive, meaningful, and capable of responding to the uncertainties of the future.

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Appendices

Appendix A - Semi-structured Interview Guide

Purpose of interviews

To explore how farmers understand agroecological transition, how they relate to nature within their farming systems, and how these relationships shape decision-making, motivations, and pathways of change.

Interview approach

Interviews were semi-structured and conducted as walking interviews where possible. Question order was flexible and responsive to the farm context, with prompts adapted to participants' experiences, system type, and emerging themes.

Section 1: Farm Context and Background

1. Farm overview

- Can you tell me a bit about the farm / estate and what you're farming here?
- What is the size, system type, and main outputs?
- Is the land owned, tenanted, or a mixture?

2. Farming history

- How long have you been farming here?
- Has the system changed over time? If so, how and why?

Prompts (used as needed):

- Previous management approaches
- Family or intergenerational influences
- Key moments of change or disruption

Section 2: Understanding Agroecology and Farming Change

3. Meaning of agroecology

- When you hear the term *agroecology*, what does it mean to you?
- Are there other terms you use instead (e.g. regenerative, sustainable, conventional)?

4. Farming approach

- How would you describe your own farming approach?
- Has this changed in recent years?

Prompts:

- Soil management
- Inputs and outputs
- Livestock–land relationships
- Production versus resilience

Section 3: Nature Connection and Personal Relationship with the Farm

5. Nature connection (personal)

- What does *connection with nature* mean to you, if anything?
- Is this something you notice or think about in your day-to-day farming?

6. Embodied and emotional dimensions

- Are there aspects of the farm that you particularly enjoy, notice, or feel attached to?
- Has your relationship with nature changed over time?

Prompts:

- Sensory observations (birds, plants, soils, animals)
- Emotional responses (pride, frustration, care, concern)
- Wellbeing and mental space

Section 4: Nature and Decision-Making on the Farm

7. Influence on decisions

- Can you give examples of where nature or ecological processes influence decisions you make on the farm?
- Are there things you now do differently because of what you observe in nature?

8. Trade-offs and constraints

- How do economic pressures affect your ability to act on those values?
- Where do you feel tensions between production and ecology?

Prompts:

- Inputs, timing, stocking decisions
- Habitat management
- Financial risk and security
- Schemes, markets, or policy drivers

Section 5: Wider Farming Culture and Social Learning

9. Perceptions of the wider farming community

- How do you think other farmers view nature and environmental change?
- Do you think this is shifting? Why or why not?

10. Learning and influence

- Who or what has influenced how you farm?
- Are you part of any discussion groups, clusters, WhatsApp groups, or informal networks?

Prompts:

- Peer learning
- Advisors, agronomists, ecologists
- Online content or farm visits

Section 6: Favourite Place on the Farm

11. Place-based reflection

- Where is your favourite place on the farm?
- Why is that place important to you?

Prompts:

- Views, shelter, wildlife, memories
- Practical versus emotional significance

- Past, present, and future meanings

Section 7: Looking Forward

12. Future trajectories

- How do you see the farm changing in the future?
- What would make it easier to farm in ways that align with your values?

13. Final reflections

- Is there anything important we haven't talked about?
- Is there anything you'd like to add?

Appendix B Participant information sheet



COUNTRYSIDE
AND COMMUNITY
RESEARCH INSTITUTE



UNIVERSITY OF
GLOUCESTERSHIRE



Economic
and Social
Research Council

Agroecological Transitions: How Farmers' Relationships with Nature Shape Farming Systems

You are being invited to take part in a PhD research study that is being conducted by Nikki Yoxall, a PhD researcher at the Countryside & Community Research Institute (CCRI) at the University of Gloucestershire. CCRI is the largest specialist rural research centre in the UK (<http://www.ccri.ac.uk/>). Before you decide whether to take part, it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully and then decide whether or not you wish to participate.

WHAT IS THE PURPOSE OF THIS RESEARCH?

This research aims to explore how farmers and other agriculture sector stakeholders understand the concept of agroecology and the extent to which farmer connection with nature plays a role in that understanding and subsequent decision making. Findings will aim to inform wider policy and market intervention and support mechanisms by recommending approaches to overcome barriers to transition. Participants must be 18 or above to take part.

WHY AM I BEING ASKED TO PARTICIPATE?

You are being invited to participate because you have vital experience and insight relating to the agroecological transition, and are an active participant in knowledge exchange activities, either formally or informally. Understanding farmer motivations for change are key to supporting the transition to sustainable agriculture, and by involving you and other livestock farmers in this research I hope to get a more thorough understanding of how those motivations can be best supported in the future.

WHAT IS THE PROCEDURE IF I TAKE PART?

If you take part, I will come to visit you at your farm at a time that is convenient for you and arranged by email or telephone beforehand. When you are visited you will have the opportunity to ask any questions about the research, before signing a consent form.

The 'interview' will resemble a normal conversation, in which we will cover topics including your farming system, how you have participated in knowledge exchange activities, your views on nature and biodiversity, and the role of farmers more generally. I will record the interview to allow me to analyse our conversation.

I would be grateful if we could walk around some of the farm while we talk, as this will help me to understand how it operates. The length of the interview is likely to be around 1 hour, possibly a bit longer or shorter depending on how far we walk. At no time will you be obliged to discuss anything you are not comfortable discussing nor to disclose anything that you don't wish to. I will telephone you within two weeks after the interview for a short debrief.

You will also be invited to join a group discussion with other farmers to explore concepts and actions relating to your connection with nature as part of your farming practice. You will have the opportunity to record audio reflections and send them to me over a period of 6 months to capture how nature is reflected in your farming practice.

WHAT WILL BE DONE WITH MY DATA?

The audio recordings will be transcribed (turned into a written document) using a professional, confidential audio transcription app (see footnote). I will check the transcription against the recording to correct any errors. All data will be stored on my secure University of Gloucestershire OneDrive with identifying data (like name and contact details) removed.

I would like to use some of the audio diary entries as part of a podcast to share the role of nature in farm decision making more widely. If you consent to having your audio included in a public podcast, you will be able to select a level of anonymity you feel comfortable with and will be able to withdraw your consent up until one week before the podcast is released.

WHAT WILL HAPPEN IF I DON'T CARRY ON WITH THE STUDY?

Remember that even if you do decide to take part in this study, you are still free to withdraw at any time during the interview or afterwards without giving a reason. However, please let me know within 30 days after I visit you so any data already collected from you can be removed before publication of the results.

WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?

The information you provide will contribute to valuable evidence that will enhance researchers and policymakers' understanding of the challenges facing livestock farmers, and how they can best be supported. You may also wish to be involved in the podcast I will be creating to share stories of farmers' connection with nature.

WHAT MIGHT GO WRONG?

As the research effectively constitutes a conversation with a researcher on your farm, no undue effects are anticipated. I will perform regular Covid-19 risk assessments, with the option to change to an online interview if appropriate. If following the research you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study then you can contact Damian Maye of CCRI via email at dmaye@glos.ac.uk or telephone on 07808170448.

WILL MY TAKING PART IN THIS STUDY BE KEPT CONFIDENTIAL?

All information that is collected about you during the course of this study will be kept strictly confidential. Any information about you will have your name and personal details removed so that you cannot be recognised from it. Any data used in research outputs (such as academic papers, project reports etc.) will be anonymised and individuals will not be identifiable. If you wish to be involved in the podcast, we can discuss the level of anonymity you wish to maintain and this will be respected at all times.

See <http://www.ccri.ac.uk/data-protection/>

WHAT WILL HAPPEN TO THE RESULTS OF THIS STUDY?

Along with other data gathered for my PhD, the results of this research will be written about in my PhD thesis, which I expect to complete in late 2024. In addition, findings from the research will be used to inform scientific papers which will be published in relevant academic journals, and presented at academic seminars and conferences. Scientific papers will also be summarised for the general public to read in the form of blog posts or public presentations. The voluntary podcast will be shared publicly.

WHO IS ORGANISING AND FUNDING THE RESEARCH?

My PhD is funded by the Economic and Social Research Council, part of UK Research and Innovation. It is also partly funded by the Soil Association within their policy team. My academic supervisors are Professor Damian Maye and Professor Julie Ingram, both CCRI.

WHO HAS REVIEWED THIS STUDY FOR ETHICAL CLEARANCE?

This study has been reviewed and granted clearance by the University of Gloucestershire.

WHAT IF I WANT TO CONTACT THE RESEARCHER TO ASK ABOUT THIS STUDY OR MY PARTICIPATION IN IT?

Contact me by email at nikkiyoxall@connect.glos.ac.uk or telephone on

Appendix C - Thematic Analysis Codes

Code Group	Code Name	Definition	Illustrative Example (Paraphrased)
Meanings of Agroecology	Agroecology as farming “with” nature	Agroecology framed as working alongside natural processes rather than controlling them	Farmer describes relying more on soil biology and ecological interactions than chemicals
Meanings of Agroecology	Agroecology as a spectrum	Agroecology understood as a continuum rather than a fixed category	Participant positions their farm “somewhere in the middle” rather than fully regenerative
Meanings of Agroecology	Discomfort with terminology	Unease or scepticism towards labels such as “agroecology” or “regenerative”	Farmer rejects buzzwords and prefers talking about what works locally
Meanings of Agroecology	Rejection of rigid binaries	Resistance to strict divides between conventional, organic, and regenerative	Participant argues organic systems can still be highly disruptive
Meanings of Agroecology	Pragmatic interpretations	Agroecology shaped by financial, environmental, and practical constraints	Farmer supports reducing inputs but only where the business remains viable
Meanings of Agroecology	Principles over prescriptions	Agroecology understood as guiding values rather than fixed rules	Participant follows principles like soil cover rather than set instructions
Nature Connection	Emotional connection to landscape	Expressions of affection or emotional attachment to land	Farmer describes a sense of calm in a particular field or viewpoint
Nature Connection	Nature as restorative	Nature framed as supporting mental wellbeing or perspective	Participant explains farming outdoors helps manage stress
Nature Connection	Intrinsic value of nature	Valuing nature beyond economic usefulness	Farmer argues wildlife has value even when it provides no farm benefit
Nature Connection	Nature as functional partner	Nature recognised as contributing to farm performance	Farmer links bird populations to reduced fly pressure on cattle
Nature Connection	Reciprocity and symbiosis	Mutual benefit between farming practices and ecological responses	Participant describes nature “paying back” when given space
Nature Connection	Belonging within nature	Humans positioned as part of ecological systems	Farmer reflects on feeling embedded in the landscape

Code Group	Code Name	Definition	Illustrative Example (Paraphrased)
Nature Connection	More-than-human awareness	Recognition of soils, animals, and ecosystems as active agents	Participant talks about “listening” to what the soil is telling them
Place & Identity	Intergenerational legacy	Past and future generations shaping decisions	Farmer discusses responsibility to leave land improved
Place & Identity	Stewardship narratives	Farming framed as custodianship rather than ownership	Participant describes themselves as a caretaker of the land
Place & Identity	Responsibility to future generations	Ethical concern for long-term impacts	Farmer worries about passing degraded soils to successors
Place & Identity	Favourite places on the farm	Specific locations imbued with meaning	Participant identifies a hilltop or hedgerow as their favourite place
Place & Identity	Landscape aesthetics	Tensions around tidiness and mess	Farmer learns to accept scruffier fields as healthier
Place & Identity	Identity shifts	Changes in self-understanding as a farmer	Participant describes moving away from yield-focused identity
Place & Identity	Farm as home vs business	Tension between emotional and economic logics	Farmer struggles with financially sensible but emotionally difficult choices
Decision-Making	Trade-offs	Balancing ecological principles and profitability	Farmer continues some inputs despite environmental concerns
Decision-Making	Incremental change	Gradual, experimental transitions	Participant trials practices on small areas first
Decision-Making	Financial precarity	Decisions shaped by risk and insecurity	Farmer explains inability to afford multiple failed experiments
Decision-Making	Input reduction	Deliberate reduction of fertilisers, sprays, fuel	Participant cuts nitrogen due to cost and soil health
Decision-Making	Soil- and grazing-led decisions	Management guided by land condition	Farmer adjusts stocking based on ground conditions

Code Group	Code Name	Definition	Illustrative Example (Paraphrased)
Decision-Making	Observing ecological feedback	Decisions informed by visible ecological change	Farmer notes improved soil structure after reducing inputs
Decision-Making	Negotiated compromises	Balancing competing priorities or actors	Participant describes ongoing negotiation with contractors
Learning & Knowledge	Experiential learning	Learning through practice and reflection	Farmer says mistakes taught more than advice
Learning & Knowledge	Learning through observation	Attentiveness to land as a knowledge source	Participant notices gradual pasture changes over time
Learning & Knowledge	Trial-and-error	Iterative experimentation	Farmer abandons a practice after poor results
Learning & Knowledge	Peer-to-peer learning	Learning through other farmers	Participant gains confidence from discussion groups
Learning & Knowledge	Social learning networks	Clusters, discussion groups, informal networks	Farmer values clusters for shared problem-solving
Learning & Knowledge	Distrust of prescriptive advice	Resistance to top-down recommendations	Participant criticises “one-size-fits-all” guidance
Learning & Knowledge	Non-institutional knowledge	Use of YouTube, podcasts, informal media	Farmer learns more from online videos than training
Social Context	Farming norms	Awareness of peer judgement	Farmer worries neighbours will judge untidy fields
Social Context	Generational differences	Contrasts between older and younger farmers	Participant sees younger farmers as more open to change
Social Context	Public scrutiny	Feeling misunderstood or blamed	Farmer expresses frustration with media narratives
Social Context	Moral pressure	Feeling judged against environmental ideals	Participant describes guilt over certain practices
Social Context	Pride and defensiveness	Emotional responses to critique	Farmer defends their system strongly
Social Context	Changing ideas of “good farming”	Shifts in success criteria	Participant prioritises margins over yields
Policy & Structures	Schemes as enablers	Policies enabling ecological change	Stewardship payments support habitat creation

Code Group	Code Name	Definition	Illustrative Example (Paraphrased)
Policy & Structures	Schemes as constraints	Policies limiting flexibility	Scheme rules prevent grazing where desired
Policy & Structures	Land tenure	Ownership shaping decisions	Tenant hesitant to invest without security
Policy & Structures	Policy uncertainty	Anxiety caused by changing policy	Farmer unsure how future support will work
Policy & Structures	Public goods framing	Engagement with policy narratives	Participant debates whether food is still valued
Policy & Structures	Visibility of action	Being seen to act sustainably	Farmer discusses signalling responsibility through schemes
Economics	Financial precarity	Farming close to financial limits	Participant describes farming as “on a precipice”
Economics	Cost of experimentation	Financial risks of trialling practices	Failed trials have long-term impacts
Economics	Yield vs margin	Reframing success around profitability	Farmer accepts lower yields with better margins
Economics	Diversification	Non-core income streams	Participant relies on tourism or education income
Economics	Resilience over growth	Preference for stability	Farmer avoids expansion for predictability
Economics	Paying the bills	Economic survival as justification	Participant explains compromises as unavoidable
Transformation	Identity questioning	Reflecting on what it means to farm	Farmer no longer recognises former self
Transformation	Letting go of assumptions	Challenging inherited norms	Participant rejects family farming traditions
Transformation	Redefining success	New measures of achievement	Farmer prioritises soil health indicators
Transformation	Non-linear pathways	Uneven, reversible transitions	Participant describes progress and setbacks
Transformation	Rejecting labels	Practices without identities	Farmer avoids labels but adopts principles
Transformation	Living with uncertainty	Acceptance of complexity	Participant learns to tolerate unpredictability

Code Group	Code Name	Definition	Illustrative Example (Paraphrased)
Tensions	Loving nature vs production	Conflict between values and necessity	Farmer regrets damage but feels constrained
Tensions	Hypocrisy and conflict	Awareness of inconsistency	Participant jokes about liking clean crops
Tensions	Desire vs fear	Wanting change but fearing loss	Farmer hesitant to reduce inputs
Tensions	Control vs letting go	Managing versus trusting nature	Participant struggles with variability
Tensions	Order vs complexity	Neatness versus biodiversity	Farmer contrasts tidy fields with ecological richness