

Stocktake Of Progress Towards Agroecology in UK Food and Farming

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UK food, farming, and land use is navigating a period of dramatic change post-Brexit. The government's 2018 Health and Harmony vision outlined ambitious goals for sustainable and resilient agriculture, prioritising public money for public goods. However, progress on its implementation remains slow, complicated by conflicting policy intentions and uncertainties. New trade agreements could undermine local sustainable farming practices by favouring cheaper imports. Energy policies prioritising fossil fuels in response to global crises undermine long-term sustainability and climate objectives.

Amidst this backdrop of turbulence and uncertainty, businesses striving to make informed decisions increasingly seek a clear, nationally endorsed direction for the agricultural sector. UK food and farming is at a critical juncture as it grapples with the urgency of reforming agriculture policy post-Brexit and enabling resilience in the face of climate change, geopolitical insecurity, and energy price volatility.

The sector faces opportunities to transition towards more sustainable and just practices, yet substantial systemic barriers persist. The risks farmers perceive in adopting new practices point to deeper economic and political challenges that shape decisions, access, and transition support. Evidence of progress is emerging on agroecological farming practices, supply chain commitments, and policy mechanisms. The area is growing, but faces systemic inertia and remains a marginal part of a system focused on industrial agriculture.

System-wide changes to the policy and economic context are essential to managing the transition, alongside shifts in agricultural practices to unlock the potential for a thriving, sustainable and resilient food and farming sector. This stocktake report assesses the UK farming sector's alignment with agroecology, identifying hurdles alongside opportunities for innovation that ease transition risks.

Agroecology Definition

Agroecology is a holistic approach to agriculture that combines ecological, economic, social, and cultural principles. It includes farming practices and scientific principles while emphasising social and economic justice.

The concept has been around since the early 20th Century, but it has become much more prevalent in the last 20 years, with different definitions that have evolved over time (Wezel et al 2020). In 2019, the FAO approved a set of 10 elements of agroecology, and the High-Level Panel of Experts (HLPE) of the Committee on World Food Security (CFS) defined 13 principles of agroecology, which are widely used to support policy and practice worldwide (Barrios et al. 2020). The approach balances economic viability for farmers with agronomic and ecological principles in line with the UN Sustainable Development Goals (FAO 2018a).

Agroecology is a paradigm distinct from industrial agriculture. Yet it is inclusive of and complementary to other progressive agricultural approaches like organic and regenerative agriculture.² These practices prioritise ecological principles such as enhancing soil health and avoiding synthetic chemicals, yet they represent points on a continuum towards sustainable agriculture.³ Agroecology broadens this scope by not only targeting environmental sustainability but also aiming to empower communities, respect traditional knowledge, and reshape power dynamics in the food system. This stocktake considers progress across interconnected approaches, including organic and regenerative agriculture, while recognising that agroecology goes further, bringing together ecological, social, and

economic sustainability to transform food systems from farm to fork.

Progress Towards Agroecology

The status and prospects for agroecology in the UK can be considered across three main dimensions: policy, farming and supply chains, and farmer sentiment. This section reviews recent policy developments, emerging evidence on agroecological farming adoption, supply chain commitments, remaining challenges, and opportunities to support an agroecological transition aligned with sustainability principles.

POLICY PROGRESS AND PROSPECTS

The status of agroecology is nascent in UK agricultural policy. This section describes the current state of agroecological integration and assesses how well recent policies follow agroecological principles. It also addresses the challenges of an agroecological transition considering the wider political and economic context and the financial and legislative support that it receives.

Post-Brexit, the UK faces a unique opportunity to redefine its agricultural policy.

Agroecology is gaining traction in the UK, reflecting a growing interest in more sustainable and fairer farming practices. Yet recognition for agroecology remains nascent in UK policy, particularly compared to countries such as Argentina, Brazil, France, and India, which are among the top agricultural producers worldwide¹ and where specific national-level agroecology policies have been implemented (Place et al 2022; Lampkin, Schwarz & Bellon 2020; Lampkin & Schwarz 2022). Although not enshrined in policy frameworks, the EU has also considered the potential for agroecology to support Green Deal priorities (DG INTPA 2021).

The 2020 Agriculture Bill laid the groundwork for the future of UK agricultural policy post-Brexit and marked a significant shift towards a 'public money for public goods' approach to foster more environmentally friendly farming practices. Despite this, agroecological principles received limited acknowledgement (Lampkin, Schwarz & Bellon 2022). Indeed, the term itself is entirely absent from the bill. The UK's Agricultural Transition Plan 2021-2024 builds on the Agriculture Bill and provides a roadmap for transitioning away from the EU's Common Agricultural Policy, emphasising sustainability and incentivising environmentally beneficial practices. In doing so, the Plan also reflects a gradual, albeit fragmented, integration of agroecological principles.² The Environmental Land Management scheme, as the main mechanism for delivering the Plan's policy objectives, focuses on soil health, habitat creation, and support for small farms, supporting approaches consistent with agroecological principles. Notably, the scheme highlights agroforestry and organic agriculture, with agroforestry recognised for high-priority action and premium payment rates.³

The devolved nations have the opportunity to develop distinct agricultural policies post-Brexit. Scotland's Agriculture and Rural Communities Bill focuses explicitly on regenerative practices. The Good Food Nation (Scotland) Act 2022 brings farming practices together with related social and economic concerns that are at the heart of agroecological approaches.⁴ In Wales, efforts are being made to align disparate food policies under a national strategy, leveraging legislation like the Well-being of Future Generations Act. The Explanatory Memorandum of the Agriculture (Wales) Act 2023⁵ refers to agroecology for the first time in Welsh law.⁶ Despite these advances, UK policies lack explicit references to agroecology, although they align with some of its

¹ <https://www.statista.com/statistics/1332343/the-leading-producers-of-agricultural-goods-worldwide/#statisticContainer>

² <https://www.gov.uk/government/publications/agricultural-transition-plan-2021-to-2024>

³ <https://www.gov.uk/government/publications/agricultural-transition-plan-2021-to-2024/agricultural-transition-plan-update-january-2024>

⁴ <https://parliament.scot/bills-and-laws/bills/agriculture-and-rural-communities-scotland-bill>

⁵ <https://www.gov.wales/agriculture-wales-act-2023-explanatory-memorandum>

⁶ <https://www.iwa.wales/agenda/2023/07/agroecology-in-action-the-land-of-our-future/>

principles in promoting environmental sustainability and public goods.

The UK's new commitments under the UN Convention on Biological Diversity include a pledge to halt and reverse biodiversity loss by 2030, protect 30% of land and oceans, and end species extinctions, alongside launching a new fund to support habitat and ecosystem restoration in England.⁷ These targets, in conjunction with the UK's 2050 Net Zero Strategy, which aims to decarbonise all sectors of the UK economy,⁸ highlight the need for a multifunctional approach to land use that simultaneously addresses biodiversity, climate and sustainable food production goals. Agroecology offers an integrated framework for achieving these multiple objectives. The FFCC's proposed Land Use Framework for England embodies this multifunctional, agroecological approach to land management.⁹

Despite these opportunities, the UK's approach to agroecology remains fragmented and underdeveloped.

The UK government has supported agroecological research through initiatives like the Farming Innovation Programme.¹⁰ Nevertheless, existing support comes primarily through approaches like organic farming.¹¹ Funding for agroecology and allied approaches remains a fraction of the total agricultural budget, which is predominantly allocated to conventional methods. For example, in 2018, the UK had the lowest average financial support for organic production amongst European countries (53 EUR/ha compared to an EU average of 207 EUR/ha, including combined EU and national co-financing) (Lampkin & Sanders 2022). UK development aid to agroecological projects in the period 2010-2017 was less than 5% of all UK agricultural aid and less than 0.5% of the total UK aid budget (Pimbert & Moeller 2018).

⁷ <https://www.gov.uk/government/news/new-deal-to-protect-nature-agreed-at-cop15>

⁸ <https://www.gov.uk/government/publications/net-zero-strategy>

⁹ <https://ffcc.co.uk/news-and-press/a-land-use-framework-for-england>

Part of the reason for this is that agroecology, in its fullest sense, encompassing ecological, social, and economic aspects, presents a challenge for consistent policy support. While attracting interest from scientists and policymakers, its holistic nature complicates policy formulation (Lampkin, Schwarz & Bellon 2020). More fundamentally, agroecology represents a challenge to the existing political economy because it seeks to disrupt entrenched power structures within the food system and questions the underlying values of industrial agriculture, such as reliance on external inputs and prioritisation of short-term profit over long-term sustainability. The agroecological focus on farmer self-regulation and self-organisation with respect to production scale, types of practices used, and economic diversification, amongst other features, suggests that changes are needed to existing power dynamics (van der Ploeg 2021).

The crises we face in the food and farming sector have led to a growing interest in sustainable agriculture. This has translated into policies aligned with agroecology, with particular reference to certain agronomic practices. However, these fall short of the unified approach that would be needed to fully pursue agroecology as a policy directive. For now, explicit references and a unified approach remain elusive.

FARMING AND SUPPLY CHAIN PROGRESS AND PROSPECTS

This section examines the implementation and impact of practices aligned to agroecology in the UK agricultural sector. It reviews existing research on the environmental and economic outcomes of agroecology, investigates the challenges in quantifying its adoption, and highlights emerging indicators of its integration in UK farming. The role of financial instruments, research, and training in facilitating the agroecological transition is also discussed.

¹⁰ <https://farminginnovation.ukri.org/>

¹¹ <https://defrafarming.blog.gov.uk/wp-content/uploads/sites/246/2023/06/Defra-SFI-Organics-Leaflet-June-2023-1.pdf>; <https://www.gov.uk/guidance/organic-farming-how-to-get-certification-and-apply-for-funding>

Specific practices are becoming more common, while others less so, but the extent of agroecological farming in the UK is unknown, and the UK organic sector lags behind other European countries.

The agroecological transition in the UK is taking place in a context in which the industrial farming paradigm dominates. Most UK land - 97% - is farmed conventionally (Defra 2022). Intensive farming, characterised by a focus on increased productivity by using more inputs on the same area of land, is high in the UK and growing (Robinson & Sutherland 2002; Environment Agency 2019). Intensive livestock farming of poultry and pigs has increased by 20% from 2016 to 2023. The number of UK farms that meet the US definition of a concentrated animal feeding operation (CAFO), also referred to as 'mega-farms,' has also increased, with 1,099 such farms recorded in 2021 across poultry, pig, beef and dairy production.

Numerous studies assess the impact of agroecological approaches, both in terms of conventional productivity metrics (e.g. yields, profitability) and environmental effects (e.g. greenhouse gas emissions, land use, air and water pollution, etc.) (e.g. Albanito et al. 2022, Mayer et al. 2022, Boeraeve et al. 2020, Landert et al. 2020, Tamburini et al. 2020). Modelling studies for the EU (Poux & Aubert 2018) and the UK (Poux et al. 2021) have shown that adopting agroecological practices would maintain export capacity, support farmer livelihoods, deliver positive GHG emissions reductions and biodiversity benefits, and support the adoption of healthier diets.

However, there are very few assessments of the extent of agroecological farming (e.g., the number or types of farms and the land area under cultivation). Several factors contribute to the lack of research in this area. There is no universally accepted and standardised definition of agroecology, which makes classifying and measuring farms that practise this approach difficult. The highly diverse and context-specific nature of agroecological practices poses significant data collection challenges. Agroecological farms tend to be small and

widely dispersed, complicating large-scale data gathering. Research in this field is often based on qualitative methods, focusing on in-depth case studies, which offer a rich picture of specific farming contexts but cannot provide quantitative estimates of the prevalence of agroecological production.

One indicator of the incorporation of agroecological approaches in the UK comes from data on organic farming, as it shares many practices similar to those of agroecology. Organic certification provides a standardised set of criteria that farms must meet to market products as such. Audit and inspection systems collect and produce data, which supports quantification of the total land area being managed organically, providing a consistent, verified benchmark for what counts as organic production. Organic production also offers the largest volume of data and represents the most widespread and longest-running application of agroecological approaches (Chanarin et al. 2022).

The UK market for organic products grew by 1.6 per cent in 2022, marking 11 years of consecutive growth, and achieving its highest ever value at more than £3.1 billion, although the share of domestically produced organic products is not available, nor the drivers of higher value (e.g. by product category, and particularly non-food organic products). Although the value of the organic market has increased in the UK, it is still far below that of many other European countries. In 2021, the UK ranked 16th amongst European countries in terms of average spend per capita on organic food, at 52 euros per person—about half the European average. In 2022, Defra statistics show that three per cent of the total farmed area in the UK was organically farmed, a slight increase from 2021 but an overall decrease of about 32 per cent compared to the historic peak in 2008 (Defra 2023).

A 2022 rapid evidence review on UK agroecological farming produced for the Climate Change Committee assessed 19 agroecological farm practices in arable and livestock systems and their impacts on GHG emissions, vegetation and soil carbon stocks, and changes to yields (Albanito et al. 2022). Most of these practices were found

to have a low or medium level of implementation in the UK. However, some were found to be already well-integrated into UK agriculture, including rotational cropping, cover crops, legume crops, and permanent pastures. A 2022 study found that 60% of Scottish farmers surveyed (N = 143) were using agroecological or allied approaches (e.g. organic, regenerative), although this is unlikely to be representative of the Scottish farming sector overall (SEFARI-FFCC 2022).

The findings from UK-focused studies are supported by a global assessment of sustainable intensification practices, which focused on seven types of sustainable intensification redesign allied to agroecological approaches (e.g. integrated pest management, conservation agriculture, integrated crop and biodiversity redesign). The assessment found that 29 per cent of farms worldwide used some of these practices, representing 9 per cent of all agricultural land (Pretty et al. 2018). These results indicate that agroecological farming practices have been adopted across the UK and internationally, even on farms that are not certified organic or may not identify as ‘agroecological.’ This suggests that elements of agroecology are being implemented more widely than certified organic production figures alone would indicate.

Specialist lenders and financing mechanisms for agroecological transitions are emerging but scarce.

Access to financing is another area with emerging signs of progress for an agroecological transition. Bank lending is the primary source of capital for UK agriculture and access to capital and financing is often essential for implementing new farming practices (Padel et al. 2017).

Whilst most lending, even amongst specialist lenders in the sector, focuses on conventional, industrial agriculture (NEF 2021), banks are increasingly offering preferential terms for farmers adopting more sustainable practices (WWF 2024). Triodos Bank has established dedicated lending teams for organic and agroecology (NEF 2021). NatWest Group has launched a Green Loans and Green Asset Finance initiative, which is designed to support qualifying SMEs in acquiring

sustainable agriculture-related assets. This includes financing for renewable technology, conservation, and low-emission management, among other activities.

Lloyds Bank, in collaboration with Soil Association Exchange, is supporting a service for UK farmers to identify more sustainable practices and related financing mechanisms (WWF 2024).

The development of assessment frameworks like the Global Farm Metric reflects a growing recognition that agroecological transitions require multi-dimensional evaluation tools. The Global Farm Metric framework provides a structure for a more comprehensive evaluation of agroecological practices, encompassing environmental, social, and economic dimensions. This shift from purely carbon-centric measurements signals a wider understanding of sustainability in agriculture, acknowledging the complex and interconnected nature of agroecological systems. Initiatives like the Sustainable Food Trust and the Anthesis digital platform, which utilises the Global Farm Metric framework, aim to integrate diverse stakeholder perspectives and establish a common language for evaluating farm-level sustainability.

The Real Farming Trust's loans for Enlightened Agriculture Programme (LEAP) supports agroecological production methods and prioritises ventures with the potential for significant social and environmental benefits. Through LEAP, mixed loans and grants, as well as business mentoring, are made available to agroecological and community-focused food and farming enterprises. Bright Tide's Regenerative Farming Accelerator Programme supports sustainable farming ventures by connecting them with potential investors, offering coaching and collaboration opportunities, as well as pro bono advice.

More recently, the establishment of venture capital firms like Bramble Partners focused on investing in businesses that enhance environmental restoration, public health, and food security indicates a growing interest amongst investors in supporting a ‘farm to fork’ transformation towards sustainable, healthy, and secure food practices.

Agroecology research and training opportunities are increasingly available.

Downstream indicators of progress towards agroecology can also be observed in UK food and farming research and training. The Farmer Cluster initiative in the UK is one important example (Pretty et al. 2018). These public and privately funded groups of farmers and land managers work towards landscape-scale change to deliver greater benefits for soil, water and wildlife. The initiative has evolved from a pilot of 5 clusters in 2013, to more than 120 in 2024.

Coventry University has a dedicated agroecology research centre, going beyond the traditional natural science and economics focus on agricultural research, with a transdisciplinary team across the natural and social sciences, and involving citizen-generated knowledge and participation from farmers, water users, and others. The James Hutton Institute also supports an agroecology group. The University of Leeds has established the Global Food and Environment Institute, supporting food systems transformations that are environmentally sustainable and socially just, in line with agroecological principles.

Over the last 20 years, the number of peer-reviewed scientific publications on agroecology has increased dramatically, from almost zero to nearly 600 articles per year (Ewert, Baatz & Finger, 2023). The number of publications for other types of sustainable agriculture that overlap with agroecology, such as organic farming or sustainable intensification, has also increased (Ibid). The UK is amongst the top three European countries in terms of the number of research papers produced on agroecology (Olliver & Bellon 2021).

Supply chain support for agroecological approaches is growing.

Signs of progress are also emerging upstream from operators along the supply chain, with an increasing number of major UK supermarkets and food companies committing to source more sustainably grown ingredients. Notably, supply chain support is for agricultural practices that align with agroecology, such

as regenerative and organic agriculture, rather than for agroecology per se.

The WWF Retailer's Commitment for Nature brings together seven UK food retailers representing more than 70 per cent of the UK grocery market to take action across seven areas of environmental impact and provide annual data to support public reporting on progress (WWF 2021; WWF 2024). The commitment itself is a positive sign of interest, and there is a growing understanding from retailers of the actions needed across a range of issues to facilitate a sustainable food systems transformation. Results to date have been mixed, with some retailers demonstrating greater progress than others. Nevertheless, after two years of reporting, the results indicate significant efforts will be needed overall to meet its 2030 targets (WWF 2023).

Major multinational food companies, including Danone, Nestle, and Unilever, have made explicit commitments to regenerative agriculture, although rarely referring to agroecology as such. All three are members of the Sustainable Agriculture Initiative (SAI) Platform, a non-profit organisation that brings together more than 170 member companies and organisations to support sustainable agriculture worldwide. In 2023, the SAI Platform established a global framework for regenerative agriculture in collaboration with industry, farmers, academia, and NGOs to support measurable outcomes focused on soil health, biodiversity, water retention, and climate impact across crop, dairy, and beef farming sectors.

The Food and Land Use Coalition (FOLU) supports the SAI Platform's regenerative agriculture definition for its outcome-based approach whilst urging the inclusion of socio-cultural and economic factors, alongside environmental ones, to ensure a comprehensive and inclusive perspective, which would be more in line with an agroecological approach. An IPES-Food report (2022) observes that definitions of and practices associated with regenerative agriculture and other recently popularised approaches, such as nature-based solutions, may be diluted in their translation to corporate sustainability schemes. This is consistent with

broader and long-running concerns that agroecology may be co-opted by industrial agriculture (Dunn 2015), as expressed in the 2015 Nyelini Declaration.

FARMER SENTIMENT TOWARDS AGROECOLOGY

Farmer sentiment towards the adoption of agroecological practices in the UK is complex. This section examines the economic and psychological factors influencing farmers' decisions, how social and informational networks shape these attitudes, and the practical realities of transitioning to agroecological approaches.

While improving long-term resilience, adopting agroecological practices may pose short-term risks that UK farmers are poorly positioned to absorb.

Farmers perceive the adoption of agroecological practices as riskier than conventional agriculture in terms of income stability in the short term (Ewert et al., 2023; Iyer et al., 2020). Interviews with UK farmers reveal related concerns about unpredictable crop pricing, short-term contracts, costs associated with waste and loss management, and environmental reporting burdens (Forum for the Future 2023). Unprecedented risk levels in UK agriculture, in general, have been reported in interviews with farmers and growers (OFC 2024), forcing producers to question the profession altogether. The Defra Farmer Opinion Tracker for England found that farmers on only 39% of holdings felt positive about their future in farming (Defra 2023).

The initial cost of transitioning to agroecological practices can be high (Bartosz et al. 2023, Forum for the Future 2023), and there is often uncertainty about the return on investment. In the short run, there may be lower yields as a result of switching to low-input production systems and using fewer pesticides, which can reduce revenue initially (van der Ploeg et al. 2019). Transition costs can be particularly challenging without sufficient financial incentives or support from the government and industry (Padel et al., 2019). Farmers may also face difficulties in accessing markets for their

agroecologically produced goods, impacting their profitability.

Furthermore, existing debt levels and investments in infrastructure designed for conventional agricultural systems (i.e. 'stranded assets') pose significant barriers to change. Farmers with high debt burdens may be particularly hesitant to adopt practices that could lead to short-term income fluctuations, even if there is potential for long-term benefits. Additionally, the cost of replacing or retrofitting existing machinery and infrastructure for agroecological approaches may be prohibitive for many farmers.

Agroecological practices are often assumed to increase value-added and profitability in the long term, however (D'Annolfo et al. 2017, van der Ploeg 2021, van der Ploeg et al. 2019). Farmers are motivated by potential cost savings from reduced inputs or access to premium prices (e.g. from organic certification) (Padel et al. 2019).

The economic implications of agroecology on farms have been shown to be positive in the long term. An evidence review of the economic performance of agroecology found that adoption of agroecological practices results in higher profits in two-thirds of the reviewed cases (D'Annolfo et al. 2017). European farms with organic or low-input farming systems are more economically viable than conventional ones (van der Ploeg et al., 2019). Organic production on European dairy farms is associated with higher gross margins (Grovermann et al. 2021) and pasture-fed livestock farms in the UK with higher gross value added per animal (van der Ploeg 2019). Farming at the level of Maximum Sustainable Output (MSO), by focusing on margins and input costs rather than output, can support nature recovery and farm profitability (Wildlife Trusts 2023; Chanarin et al. 2022). Analysis of 165 UK farm businesses indicates that MSO farming is more profitable and sustainable (Wildlife Trusts 2023).

UK farmers who have transitioned to agroecological practices generally report positive experiences, especially in terms of soil improvements, reduced weed problems, better animal health, and enhanced landscape and biodiversity value (Padel et al. 2018).

These farmers have noted that agroecology can offer a long-term economic perspective on future-proofing their farms. Indeed, there is strong evidence that agroecological farm diversification supports climate adaptation, including pollination, pest control, nutrient cycling, water regulation and soil fertility (Snapp et al. 2021). Alongside this, there is some emerging evidence of the benefits arising from agroecology for farmer mental health (Yunker & Radunovich 2022).

The transition to agroecological practices involves a learning curve and adaptation.

Farmer sentiment towards, and willingness to adopt new production practices are critical to the potential for a wider transition to agroecology. While economic factors are important, a wide range of determinants contribute to farmer attitudes and decisions (Ewert et al. 2023). These include access to information and knowledge exchange, policy and institutional support, social and cultural norms and practices, as well as environmental factors.

Dessart et al. (2019) review 20 years of research findings on behavioural factors that influence farmers' decisions to adopt environmentally sustainable practices. Dispositional factors like extraversion and openness to new experiences, as well as moral and environmental concerns, are associated with farmers adoption of sustainable practices, while resistance to change makes them reluctant to convert. A meta-analysis found that a high percentage of farmers systematically reject change (Barreiro-Hurle et al. 2018), and this is likely to be a major reason wider adoption of sustainable practices is not happening (Dessart et al. 2019).

This is in a context in which more than 40% of farmers are aged 60 years or older, highlighting an ageing population with few young people entering farming, raising concerns about the future sustainability and productivity of the sector. The lack of young farmers also implies succession issues for family farms as older farmers retire without prospect of the next generation taking over operations. UK farming also faces ongoing economic pressures from volatile market prices, input costs and weather - all of which affect earnings and farm

viability. Average farming incomes in England in 2022 were about half that of the national average household.

The diversity of agroecological farms can help to mitigate some of the risks, as well, through reliance on a broader range of farm activities and income sources (Bartosz et al., 2023; Ewert et al., 2023). More diverse production systems can lower yield-related risks over time, facilitating production and profit stability in the long-term (Ewert et al. 2023; Schaub et al. 2020). Agroecology also creates new alliances between producers and consumers that can support more stable market conditions and thereby lower price risks (Ewert et al. 2023, van der Ploeg 2019). Viable farm households in turn contribute to wider social, economic, and environmental resilience (Finger & Benni 2021)

Social factors like peer-to-peer learning, observing neighbours' actions and the extent of a farmer's social networks positively influence the adoption of sustainable farming practices (Dessart et al. 2019). Interviews with 14 farmers in England and Wales who had transitioned to agroecology found that most farmers in the study were inspired to change practices after contact with other farmers who had adopted agroecological approaches, either in the UK or abroad (Padel et al. 2019).

Likewise, cognitive factors such as having sufficient knowledge of new practices, combined with anticipation of environmental or financial benefits with limited risks also positively shape adoption of specific sustainable practices (Dessart et al. 2019). UK farmers who have successfully adopted agroecological practices report a sense of achievement in contributing to environmental sustainability and enjoying the tangible benefits of improved farm health and productivity (Padel et al. 2018).

Transition often requires a significant shift in mindset and cultural practices (van der Ploeg 2019). Farmers need to adopt new ways of thinking and operating, which can be challenging, especially in communities where traditional farming methods are deeply ingrained. This challenge is compounded by the need for knowledge sharing and collaboration among farmers,

which is crucial for successfully adopting agroecological practices. The rise of organisations like the Nature Friendly Farming Network and Pasture-Fed Livestock Association,

The agroecology platform, Groundswell Festival and Oxford Real Farming Conference indicate growing recognition of these needs.

Agroecology also often requires a deep understanding of local ecosystems and how to work within them. This can be a barrier for farmers who may not have the necessary knowledge or resources to effectively implement these practices. Advisory services may not be well enough equipped to support regenerative production systems given the complexity of practices involved (Forum for the Future 2023). Additionally, agroecological practices may require more labour-intensive methods (Ewert et al. 2023, van der Ploeg et al. 2019, D'Annolfo et al. 2017), which can be a challenge for farmers with limited labour resources.

Several initiatives aim to address these issues. For example, Innovative Farmers is a farmer-led membership network facilitating field labs to trial and research agroecological practices, offering practical insights and solutions. Farming Connect provides government-funded, tailored support and knowledge to farmers in Wales, aiding the adoption of sustainable methods; since its launch in 2015, the programme has supported 12,615 businesses. Farming & Wildlife Advisory Groups (FWAGs) in England and Wales offer advice to farmers, promoting agroecological practices that align with local wildlife and landscape conservation. The Royal Countryside Fund is a UK-wide charity that provides resources and training for sustainable agriculture.

Alternative Narratives and Common Ground

Many sustainable agriculture narratives have emerged in recent years that intersect with agroecology in policy and practice. This section considers how emerging global agreements are converging on the need for

sustainable and equitable food systems, the approaches being promoted to achieve these goals, and how they fit into the broader discourse on sustainability and food security.

Increasingly, sustainable alternatives to intensive industrial agriculture are being recognised.

The landmark International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) report in 2009 highlighted the limitations of the conventional approach and advocated for a wider, more agroecological approach. There is now widespread and growing recognition in the UK and worldwide that conventional intensive industrial agriculture does not adequately address the challenges confronting our food systems. These multifaceted challenges encompass environmental sustainability, public health and nutrition, economic viability, social equity and inclusion, and animal welfare.

At an international level, the UN FAO (2018b), the Intergovernmental Panel on Climate Change (2019), and the Food Systems Summit (2021) and subsequent stocktake (2023) have highlighted the limitations of intensive agriculture and the need for more sustainable and equitable approaches, including agroecology (Niggli, Sonneveld & Kummer 2021). Following its primarily supply-side focus on emissions reductions, the UNFCCC has traditionally limited itself to addressing improvements to agriculture. However, COP28 represented a pivotal change in perspective. The Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action signals the importance of a food systems approach to addressing climate change – incorporating consumption and waste as well as production. As of January 2024, the Declaration has been endorsed by 162 heads of state and government, representing 83% of food systems emissions, 77% of production (kcal), 75% of the global population, and 68% of farmers (Camp 2024).

In the UK, the Health and Harmony statement (2018) outlined a post-Brexit future for a more environmentally sustainable, innovative, and efficient agricultural sector, which has since been updated with the Agricultural

Transition Plan 2021-2024 (2020). UK leadership at COP26 influenced commitments towards nature protection and the reform of public policy and support for agriculture and aligns with domestic commitments to protect nature, including the UK's 25-Year Environment Plan (2018), Agriculture Act (2020) and Net Zero Strategy (2021). The European Green Deal and its related Farm to Fork Strategy set similar priorities for the EU.

UK leadership in promoting a Just Rural Transition is a significant step toward recognising the social dimensions of the agroecological transformation. The Just Rural Transition framework emphasises the need for policies that support farmers, rural communities, and workers and aligns directly with many core principles of agroecology.

These policy developments are supported by a robust body of scientific research and a notable shift in public opinion, with citizens expressing growing concern and advocating for change (FFCC 2023). Together, these changes in emphasis highlight the importance of viewing food as an interconnected system, moving beyond a singular focus on productivity, with its narrow emphasis on yield, and considering how to internalise negative externalities through policy and practice. However, there are varying schools of thought on the path to sustainable and just food and farming.

Agroecology shares common ground with many sustainable agriculture approaches.

As already noted, approaches such as organic and regenerative agriculture align closely with agroecological principles. Sustainable intensification has also gained significant traction, reflecting the underlying principle that existing farmland should maintain or increase productivity while reducing environmental impacts (Fraanje & Lee-Gammage 2018). Conceptually, the term sustainable intensification does not specify agronomic practices but rather prioritises increased agricultural inputs, whether knowledge, technology, or labour, to maintain or increase yields sustainably (Benton & Harwatt 2022; Garnett & Godfray 2012).

Climate-smart agriculture and ecomodernism share a similar vision to sustainable intensification but place a greater emphasis on climate change mitigation and adaptation in the first case and the role of science and technology in shaping food production in the second. These approaches do not necessarily align with agroecology, but they can lead towards agroecological outcomes, for example, where they prioritise nature-friendly approaches, indicate a move away from chemical inputs and do not involve the use of genetically modified organisms (Carlile & Garnett 2021).

Agroecology, however, emphasises a whole-systems approach to food and farming that explicitly addresses the socio-economic and power inequalities of the food system and goes beyond an emphasis on production practices. Unlike other sustainable agriculture approaches, agroecology recognises that enhanced production and technological solutions alone will not resolve food systems challenges and acknowledges the need for adjustments in consumption patterns to meet human needs within planetary boundaries. Local knowledge and indigenous management systems are regarded as equally effective as scientific knowledge (Pimbert 2018). A Just Transition is emphasised, in which farmer livelihoods and the need to mitigate short-term risks associated with the shift away from intensive industrial agriculture are considered alongside sustainability principles (Anderson et al 2019; Anderson 2019).

Where different approaches consider these wider concerns beyond a narrow focus on agronomic practices or top-down technological solutions, there is significant common ground and alignment for systemic change. For example, the concept of Maximum Sustainable Output (MSO) shifts the focus from maximising yields towards maximising sustainable productivity over time by working within natural limits, prioritising ecological health and farm profitability (Wildlife Trusts 2023).

By contrast, the land-sparing movement advocates for separating land for nature conservation from land used for agriculture. It suggests intensive farming on a smaller land area can leave more space for natural habitats. This

narrative often aligns with large-scale, intensive agricultural practices and runs counter to agroecological practices, which are often referred to as ‘land sharing’ in contrast to ‘land sparing’ (Fraanje 2018).

The global energy crisis and food price rises, partly due to the war in Ukraine and other factors, along with farmer protests, have shifted some attention away from sustainable food and farming. In response to these immediate pressures, there has been a renewed emphasis on fossil fuel use and energy-intensive inputs to maximise yield for a small number of commodity crops to mitigate food insecurity risks. However, this short-term approach jeopardises long-term goals for more sustainable and just food systems in the UK and globally. Agroecology offers a viable long-term solution to both the energy and food crises by reducing dependence on fossil fuels, enhancing resilience to climate change, and promoting diverse, locally adapted food systems. However, the current political economy often prioritises immediate solutions over the systemic transformation that agroecology represents.

Conclusions

This stocktake reveals that, while progress is being made towards agroecological farming practices and sustainable supply chain commitments in the UK, significant challenges remain in supporting farmer livelihoods and facilitating a just transition. Farmer concerns about adopting new practices point to larger issues in the political economy of food and farming. The agricultural policy and economic context influence farmer decisions, access to information, markets, and transition assistance.

The transition to agroecological systems in the UK is hindered by a policy environment that prioritises short-term interests and lacks a cohesive, long-term strategic vision. Existing policies and economic structures often favour piecemeal approaches rather than comprehensive system-wide changes. While reforms, supply chain initiatives, knowledge-sharing, and financial support are essential tools, their impact will be

limited without political will and cross-sector coordination.

A fundamental shift is needed, recognising that equitable transformation of UK food and farming requires systemic changes, not just isolated farm-level practices. Agroecological approaches offer a promising path forward, but significant policy and economic reform are needed to fully leverage their potential. Only through a concerted effort to align incentives and policies with a long-term vision can we build a system that consistently delivers environmental sustainability, climate resilience, community health, and animal welfare for the common good.

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