

## Submission of Evidence to Agriculture Bill Committee

### The need for and potentials to support ecological food production in England

This submission is based on the findings from the Transitions to Agroecological Food Systems research initiative, in which the authors participated. The authors are a mix of academics and farmers from the Institute of Development Studies at the University of Sussex and the Land Workers' Alliance. The initiative entailed a wide range of research, consultations with diverse stakeholders, and in-depth deliberative processes from 2016 to 2018.

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#### Summary and Recommendations

Agroecology, an approach to farming and food systems, has the potential to contribute to addressing food and agriculture needs in a way that integrates ecology, food and nutrition, rural communities and economies, yet is currently unsupported in the Agriculture Bill. With high yield potentials, agroecology has the potential to meet the UK's domestic food needs while also enhancing, rather than depleting, our ecosystems.[1-4] As it provides meaningful employment, and numerous employment opportunities per area of land, it also shows promise of revitalising rural communities and ensuring that our food sector does not disappear with an end of, or a reduction to, the availability of migrant workers.[3]

At present, little to no support for agroecology is provided by Defra, or any other part of the government, and there is little evidence of support to come from the *Health and Harmony* Policy Statement and White Paper. The Agriculture Bill also fails to indicate that it will support farming that simultaneously enhances the environment and produces healthy food. Without this integration between food and the environment, Britain is likely to see more, not less, environmental degradation. In the face of Brexit, this could also undermine food security and nutrition in Britain.

While *Health and Harmony* can be applauded for its recognition of the environment as an entity worth supporting, Defra's proposed policies are unlikely adequately to address England's pressing environmental and food security issues. Public money for public goods on its own is unlikely to result in more ecological farming approaches, and evidence demonstrates that farm margins and

areas set aside for conservation are not enough to protect biodiversity and mitigate harmful farming practices.[5]

The removal of area-based payments, on its own, is unlikely to address a lack of availability of suitable land for agroecological farming, or the high land prices which make land inaccessible to new entrants.[6] Land speculation and farm consolidation will continue to prevent new entrants and agroecological farmers from accessing land unless measures are taken to address this constraint.

There are questions about whether and how the proposed policy framework will support the production of sufficient healthy food that is accessible to all people in the UK. If imports become less reliable and/or more costly after Brexit,[7] there will be even more need to ensure that the production of healthy food in Britain increases rather than declines.

Support for fairer, more direct markets can help ensure that agroecologically produced food is not limited to a niche market. Market linkage initiatives such as Public Procurement, Community Interest Intermediaries and Cooperatives can also enable existing farmers to convert to more ecological practices by increasing their security and their share of the retail value of food. They can also help ensure that farmer livelihoods, and the sustainability of their farming methods, are not undermined by commodity price volatility.[8],[9],[10]

To support agroecology, which can contribute to better ecological outcomes, food security and farmer livelihoods, we support the following amendments to the Agriculture Bill:

- **Amendment 41:** Amend Clause 1, page 2, line 6, at end insert:  
(2A) The Secretary of State shall also give financial assistance for, or in connection with, the purpose of establishing, maintaining and expanding agro-ecological farming systems.
- **Amendment 51:** Clause 1, page 2, line 3, at end insert—  
“(h) supporting agriculture and horticulture businesses to ensure public access to healthy, local, sustainably produced food.”

These amendments would help to better ensure that there is support for food production that is ecologically sound and that it is also more oriented towards public health.

The rest of this paper provides evidence for why agroecology is needed, why it is being under-practiced in England, and how the barriers to agroecology can be feasibly addressed in England.

## What is Agroecology?

The term ‘agroecology’ is relatively new and its usage and interpretations have developed as a growing number of practitioners and academics engage with the concept and practices.

Agroecology first began as ‘ecology as applied to agriculture’ [11] with a focus primarily on farm-based techniques. While some proponents continue to focus narrowly onto on-farm issues [12], others have extended their understanding of agroecology to incorporate the social context and the consumption of food [13].

Agroecological production adheres to the following broad principles which are generally accepted across contexts:

- ‘Recycling nutrients and energy on the farm, rather than relying on external inputs;

- Enhancing soil organic matter and soil biological activity;
- Diversifying plant species and genetic resources in agroecosystems over time and space; and
- Integrating crops and livestock and optimizing interactions and productivity of the total farming system, rather than the yields of individual species' [14]
- Produces healthy food that is accessible to all; and
- Supports society (e.g. rural livelihoods, community, etc.) [13]

This emphasis on healthy food production differs from our current mainstream food system, which is not oriented towards food, but rather towards marketable commodities. These commodities are produced in a way which does not maintain the resource base on which their production depends, but rather 'externalises' the adverse consequences of the degradation of resources. Agroecological approaches seek to reorient farming towards the production of healthy foods, while simultaneously ensuring that the way that these foods are produced supports communities, livelihoods and ecologies.

There is significant overlap between organic farming and agroecological farming, but there can be some divergences. While organic certifications standardise certain environmental practices, some organic farms use monocultures or low functional biodiversity, and may simply substitute chemical inputs for 'organic' ones (sometimes at levels which result in ecological problems),[15],[14] thus diverting from principles of agroecology.<sup>1</sup> Further, organic certifications do not necessarily focus ensuring healthy food is available to all consumers.

## Why agroecology is needed

### *a. The effects of and trends in England's food system*

The current food system in England is unsustainable and dysfunctional ecologically and socially. Despite a recent shift in the focus of EU and UK governments from production incentives to 'agri-environment schemes', the ecologies and landscapes of England are deteriorating. Changes in pesticide usage have resulted in a sixfold increase in potential kill of honeybees from 1990 to 2015. [16] Pollinator, bird and other wildlife populations have declined dramatically [17]; water is contaminated with high levels of nitrates and other diffuse pollutants from farms [18], [19]; cropping patterns are increasing the severity of flood impacts,[20] and soils are degrading at alarming rates.[21]

Food poverty and the numbers of people affected by diet-related diseases are high and rising, leading to premature deaths and high costs for the NHS.[22, 23] A recent study indicated that households in the UK are consuming large amounts (up to 50.4% of dietary energy) of ultra-processed foods, for which the agricultural commodity crops are produced.[24]

Currently, 80 percent of adults and 95.5 percent of young people<sup>2</sup> in Britain consume less than half of the recommended daily intake of vegetables and fruits, based on the Eatwell Guide recommendation of 7 portions per day.[25] The Food Foundation estimated that the UK relies on

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<sup>1</sup> The difference between organic and agroecological practices has been documented in California (Guthman 2000) and anecdotally elsewhere (Altieri and Nicholls 2003). To the authors' knowledge, no similar inquiry has been undertaken in the UK.

imports for all or part of the year for 40 out of the top 43 fruits and vegetables currently purchased,<sup>3</sup> and of these imports, 75% come from the EU.[26] There is an opportunity, and arguably a need, even in the absence of Brexit, to address this gap between consumption and imports by agroecologically improving domestic production of these essential foods. A 'no deal' Brexit would make this even more urgent if access to imports decreases and prices increase for fruit and vegetables coming into the UK.

Not only do the health and environmental effects of the current food system in England merit attention in their own right, they also have enormous economic consequences. A study conducted by The Sustainable Food Trust estimated in 2017 that the annual costs to the UK from intensive farming approaches, including soil degradation, pollution and biodiversity loss amount to £60 billion, with another £45 billion in health costs related to poor diets (£23 billion for type 2 diabetes, cardiovascular disease and diet-related cancers; £17 billion in malnutrition; £3.95 billion for obesity, £1 billion for hypertension).[27] Those annual estimated ecological and health costs, while not exhaustive, dwarf the annual £3.6 billion spent annually on farm subsidies.

### ***b. The structure of England's food system***

England's food system is primarily oriented towards foods as commodity commodities – the economic value of food is the primary concern, above rather than its contribution to human health and or the necessity of producing food in ecologically sound ways and ensuring that rural communities can thrive.

In recent years, Defra has supported farm consolidation, justified by assumed economies of scale and competitiveness.[28] The majority of farms in England now sell into long supply chains, where small numbers of large traders, processors and retailers hold sway in terms of price setting, production standards and indeed the foods ultimately available to consumers. With a large share of the food economy 'captured' by these intermediaries, the overall effect of these intermediaries is to 'extract' value from the food chain.[29] The value extracted is often not just financial but also nutritional. They typically transform cheap and plentiful agricultural products into relatively scarce and expensive processed commodities, capturing the value added when it is sold at relatively high prices to consumers.

Primary producers in this model have to accept low prices and are locked in to producing small numbers of products at large volumes, and at low unit cost. For example, in the intensive poultry farming sector, Cargill sells businesses the feed for chickens, owns the hatcheries, the feed mill and the factories and also buys the chickens.[30] This makes 'farmers' into price takers for both inputs and outputs, restricts their autonomy and creates a strong dependence on large businesses. It also limits the number of products produced and traded, inevitably reducing the resilience of the prevailing food system to shocks such as commodity price volatility and extreme weather events, as has been demonstrated during recent food price crises.

Large amounts of waste are created at many stages along the food chain, either through 'outgrades' or spoilage. Overpackaging and over-processing are often linked to the distances and times over which produce travels. Nutrition, freshness, provenance and consumer sovereignty are also diminished at multiple points throughout these industrial food chains.

Due to the low returns for agricultural commodities, many farmers have left the business or have retired without successors.[31] In an attempt to stay on their farmland, many farmers have

diversified into other businesses, which are not directly related to farming, such as camping, wind energy or simply keeping their land clear of ‘dense scrub’ in order to receive subsidies.[32] While business diversity in itself is not negative, decreasing incentives to produce food increases the country’s reliance on potentially-unreliable imports. This is important in the context of Brexit, because a ‘hard-Brexit’ or a ‘no-deal Brexit’ would probably result not only in increasing prices for imported foods, but prices could also become increasingly volatile.

Some farmers avoid having to produce using economies of scale by focusing on niche markets for their survival. This can include producing high-end products, such as specialty meats, salads, and ‘superfoods’ or obtaining an organic certification to receive premiums. While many—though not all—niche farmers produce in agroecological ways, their customers tend to be confined to a small, typically wealthy group of people. Of course these markets exclude the majority of consumers. They also have size limits and are precarious for farmers. Some farmers – agroecological or not – sell direct to consumers, which enables them to sell at prices comparable to conventional markets, but these are the minority.

In short, the majority of farmland in England is either used to produce intensively for global commodity markets, or is more or less maintained as a farm but without producing much in the way of nutritious food. A small number of farmers produce for exclusive niche markets, but these are inaccessible to the majority.

What is needed—and what is possible—is farming that produces healthy, affordable and accessible food for all, in ways that restore the ecosystems on which we depend. As the next section details, agroecology offers potential to provide that integrated set of outcomes.

### *c. How agroecological food farming can help address public health and ecology challenges*

An agroecological approach to food systems offers potential to help address the public health and environmental challenges currently faced in the UK:

**Yields:** International evidence collected across 37 million hectares indicates that the adoption of agroecological approaches can result in a significant increase in yields, compared with mainstream production methods, while simultaneously conserving ecosystems.[1],[33] While rigorous research on agroecological yields has yet to be conducted in England or the UK, anecdotal case studies in England have indicated that productivity for some agroecologically produced crops, including beetroot, kale, cabbage, carrots, broad beans, calabrese, French beans and spinach match or outperform the yields per hectare of the average farm.[3],[4] Another case study demonstrates how even small amounts of land could meet the fruit and vegetable needs of people living in food poverty when converted to agroecological production.[34]

**Nutrition:** The diversity of agroecological food production – at genetic, crop and ecosystem levels – contributes to increased dietary diversity.[35] Further, a feature of agroecology is that its production is oriented towards healthy foods. This often means less processing of foods to retain nutrients. Agroecological products can also have higher nutrients to begin with.[36, 37] While studies have not been conducted on agroecologically produced foods specifically, they have been conducted on organic foods. While not all organic farming would be considered agroecological, and not all agroecological production would pass organic certification [15], the emphasis of both systems on reducing agrichemical usage, building soils, improving the diet of animals (e.g. pasturing, conserved forage and low use of concentrate feed for ruminants) and rearing traditional breeds, indicates that nutritional content in organic would similarly hold for agroecological production.

While the Food Standards Agency (FSA) concluded in 2009 that there is no nutritional difference between organically and conventionally produced foods, more comprehensive research conducted by Newcastle University concluded the opposite in 2014. The FSA meta-review only considered 55 studies (across crops, meat and dairy)[38], while the 2014 Newcastle University meta-review considered 343 studies on crops and 196 studies on meat and dairy.[36],[37] In crops, the Newcastle review found a 60% difference in beneficial antioxidants in organic foods compared to conventional crops. This equates to 1-2 extra portions of fruit and vegetables per day in terms of antioxidants if consumers switched to eating organic.[36] The Newcastle study also concluded that organic and non-organic meat and dairy had significant differences in nutritional composition. The review found that organic milk and meat contain a better fatty acid profile (including 50% more omega-3 fatty acids) than those produced via conventional methods [37].

**Ecology:** By integrating, rather than separating out, ecology and food production, agroecological farms tend to enhance, rather than deplete their ecosystems. Agroecological techniques on farms include polycultures (resulting in a diversity of crop and non-crop plants), push-pull techniques for pest management (reducing or removing the need for pesticides), improving soil fertility through bio-fertilisers and green manures (reducing harmful impacts of nitrate-based fertilisers and enhancing rather than depleting soils), and integrating animal and plant production such as through agroforestry, rotational grazing and other synergistic approaches. Agroecological farming actively builds on-farm biodiversity at both genetic and species levels.[11]

This differs from the *status quo* in England in which 'ecology' and biodiversity is separated out to the borders, margins or different areas of land holdings. This system of separation does not work for ecology for several reasons. First, it does not enable a reduction in inputs such as nitrates, herbicides or pesticides. Secondly, ecosystems at field margins, while important, can be insufficient for maintaining healthy populations of pollinators. Recent research has found that pesticides accumulate in perennial plants around the margins of farms, which can be detrimental to pollinators.[39]. Third, recent research has indicated that it is the entire 'matrix' of a landscape which determines biodiversity. In order to maintain viable populations, species need to be able to traverse landscapes, but this is greatly hindered if a landscape contains pesticides and monocultures or is occupied by concrete and large-scale buildings such as in many meat and dairy operations.[40],[5]

**Resilience:** Agroecological farms have been shown to achieve higher levels of resilience to climate change and natural disasters compared to conventional farms. For example, following Hurricane Mitch in Central America, a study encompassing more than 1,800 farms across three countries found that agroecological farms had 20 to 40 percent more topsoil, greater soil moisture and lower economic losses than conventional farms.[14] Similar studies in Mexico and Cuba have also concluded that agroecological farms are more resilient to climate shocks (Ibid). In the face of the latest IPCC report forecasting an increase in extreme climate events,[41] agroecological farming could help to mitigate risks to farmers, food security and farm ecosystems.

### **To what extent is agroecology practiced in England?**

Currently, evidence is lacking about the amount of land and number of farms under agroecological production in England or the UK. Using the figures from organic farming or from farm scales could give a broad estimate, but has significant drawbacks as a proxy.

According to Defra, 517 thousand hectares of land were farmed organically in 2017 across the UK. The area under organic management has declined by about one third since 2008 as indicated in the Figure 1 below [42]. In contrast, the amount of organic farmland in Europe has increased by 18.7% between 2012-2016.[43].

Currently, land under organic management represents only 3 percent of the utilised agricultural area in the UK.[42] The low proportion of organic farmland in the UK indicates that organic and agroecological farming is trapped in the niche market. The sharp decline in 2008 indicates it is largely dependent on consumer incomes, and largely unsupported by public policies.

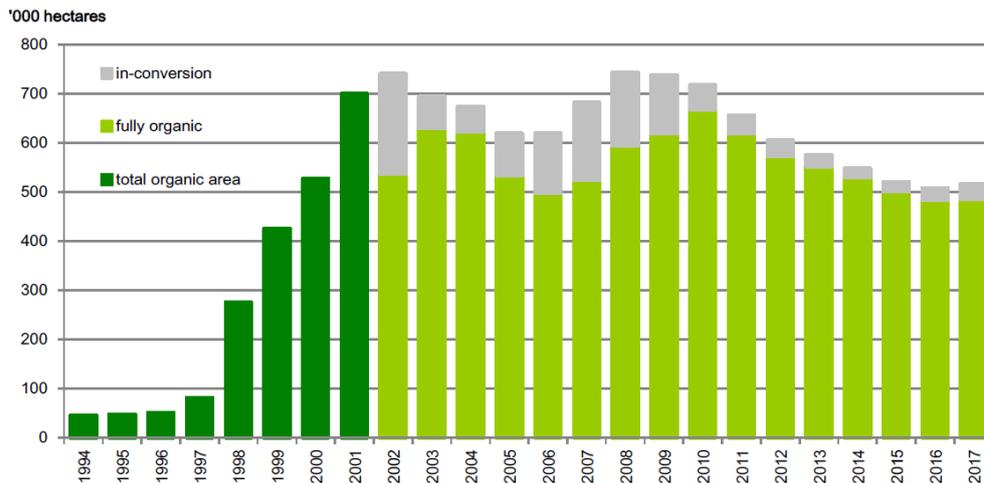


Figure 1: Total number of hectares of organic and 'in-conversion' farmland in the UK, from [42]

Using organic farmland as a proxy for land managed in an agroecological way is problematic, for reasons given above and because organic certification is often too expensive for many small farms. Some farms find that short supply chains render it unnecessary given that their customer bases know and trust their practices.[44]

Attendance of farmers at events such as the Oxford Real Farming Conference (ORFC), an annual event which generally aligns with agroecological principles, is testament to the fact that there is a growing number of agroecological farmers in England and the rest of the UK. In 2018, the event sold out at 980 attendees with 250 people turned away.[45] The Land Workers' Alliance (LWA), a members-based organisation of people who produce or harvest from the land using ecological methods, has approximately 1,000 members, most in England though some also in Wales in Scotland.<sup>4</sup> It is likely that others practicing agroecology are not involved in this organisation<sup>5</sup>. It is also important to acknowledge that there is no clear boundary between agroecology and non-agroecology. Thus, there may be many farmers practicing some aspects of agroecology alongside non-agroecological practices, and these farmers may not necessarily identify with a social movement related to agroecology.

<sup>4</sup> Only a handful of members are in Northern Ireland, though there are plans to begin an Ireland-based members organisation focused on agroecology

<sup>5</sup> Other member-based organisations with agroecological trends are the Organic Growers Alliance and Scottish Crofting Federation

## The main barriers to agroecological farming becoming more prevalent

The main barriers which are preventing agroecology from becoming practiced in the mainstream include access to land, access to capital, knowledge and skills, and supportive markets. All of these obstacles need to be addressed for agroecology to successfully spread in this country. For example, creating markets or offering capital without also increasing access to land or developing skills will be unlikely to address the current problems in our food and farming systems.

### 1. Access to land

Access to land has been cited as the top barrier for aspiring new entrant agroecological farmers in England (and Wales and Scotland)<sup>6</sup> far above concerns about profitability of farming.[46],[3] As the population of farmers declines rapidly across the UK, supporting new entrants needs to be a priority. Access to land for agroecological farming includes four key issues: availability, appropriateness, affordability and accommodation.

**Availability:** Farmland ownership and control across the UK is highly concentrated, and relatively little land is available on the market for new entrants. The total land area in the UK utilised for agriculture is 17.36 million hectares (representing 71% of all land in the UK), and it is owned or managed by some 290,000 farmers, business partners, directors and spouses, which represents just 0.44% of the population.<sup>7</sup>

Investment in land as a commodity (for speculation) is a significant factor keeping land out of access for many (and also taking land out of agricultural use). Freehold parcels of land are often purchased by people wishing to keep horses and others who are not engaged in productive farming, or by developers and investors wishing to bank the land in pursuit of eventual 'planning gain'.

Defra's proposed phasing out of area-based payments may not necessarily increase the availability of land for agroecological producers. While some land owners might be incentivised to downsize, making more land available, there is a risk is that this land will be purchased by land speculators, and/or added to existing farms (many of which are already large). Policies which give preference to agroecological producers when land comes on the market could help to address this risk. Defra should also coordinate with other government departments to curb land speculation if it is serious about ensuring that land becomes available for new ecological farmers.

County Farms could be one way in which new entrant agroecological farmers could get better access land, at least while starting out. The County Farm network is being depleted, as farm estates are being sold off by many councils. From their peak in 1938, the area of county farms has declined by 40 percent, and the number of holdings—and by extension the number of farmers supported by these schemes—has declined from approximately 32,000 holdings to less than 5,000.[47] However, some councils, such as Norfolk, Suffolk and Pembrokeshire, have recently reinvested in their county farm estates in an effort to explicitly support new rural enterprises, local food systems and also provide affordable housing for farmer tenants. Defra has indicated that it will 'consider how to help Local Authorities who want to invest in their Council Farms'. This welcome support for County Farms should include specific support for agroecological farming.

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<sup>6</sup> No information was available for Northern Ireland at the time of writing

<sup>7</sup> Based on Defra 2016 data, available from

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/616865/AUK-Chapter2-01jun17.ods](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/616865/AUK-Chapter2-01jun17.ods). We are indebted to Robin Grey for these calculations.

**Appropriateness:** Land that is appropriate for agroecological farmers, and particularly new entrants, must include considerations of size, location and amenities. Agroecological farmers tend to need land in parcels that range from approximately 0.5 hectare to 50 hectares. This is a broad range without hard boundaries, but generally agroecologists are not in the market for several hundred or thousand hectares of farmland. Farmland which is located near to towns or cities is important both for access to markets as well as for social networks, which can be important for young farmers.[48] In terms of amenities, agroecological farmers need adequate road access and typically access to water.

**Affordability:** Commodification of land has resulted in its treatment as an investment vehicle, rather than a common asset to be used in the public interest, including the production of food and regeneration of ecosystems. Farmland prices in England have increased by 400% over the past twenty years.[49] Even accounting for general inflation, this rise in prices has been higher than that of equities and of London residential property. While the removal of area-based payments could help to reduce this high rate of inflation, CAP payments are not the only factor which affects land prices. Land speculation and investment and general pressure for development have significant impacts on prices. In France, the state ties farmland rental prices to agricultural prices, and limits the amount of profit that landlords can make from renting out land.[50] Defra could learn from this model to reorient land prices toward farming incomes.

**Accommodation and other buildings:** In England, the National Planning Policy Framework is supposed to preserve the availability of agricultural land through its separation between agricultural, woodland and development land. However, this distinction makes it difficult for farmers in England to obtain planning permission to live onsite, and particularly agroecological farmers who are producing at smaller scales and using more hands-on approaches to their conventional neighbours. The barriers to living onsite are problematic for agroecological farmers, who often require frequent contact with the land and responsiveness to changeable weather conditions. This is most feasible – economically and logistically – when living on site. In addition, new farm businesses rarely generate enough income to secure a mortgage on a home nearby. While some farmers do succeed in attaining planning permission at appeal, this process is costly for both applicants and the government.[51]

Similar challenges are faced by agroecological farmers when they apply for permission to erect polytunnels, sheds or other structures for their farm businesses. Opposition often comes from a NIMBY (not in my back yard) approach of neighbours who do not want ‘plastic tat’ in their countryside, despite consuming many products grown under plastic in Spain and other countries. It also comes from nearby farmers who have a hard time believing that anyone could make a living from a small piece of land.<sup>8</sup> More could be done to educate planning officials and existing farmers about agroecological production and how to distinguish it from hobby farming. It could also be useful to sensitise the general public about the importance of domestic food production and what food production abroad entails.

Land Cooperatives such as the Ecological Land Cooperative<sup>9</sup> have experience in identifying suitable farmland for agroecological producers and equipping it with essentials such as water access. They provide support to farmers ranging from farming techniques to marketing to connecting to other

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<sup>8</sup> ‘Horsiculture’ is a colloquial term for those using agricultural land for horses.

<sup>9</sup> See <http://ecologicaland.coop/> for more details

farmers through their networks. However, these cooperatives are limited by inflated farmland prices. Support for these cooperatives in combination with curbing land speculation, could expand the number of farmers served by these entities.

**Ability to invest and security of rights:** For farmers, secure right to remain on farmland is a prerequisite for significantly investing in their land holdings. Agroecological production arguably entails higher levels of investment in the land (soils, perennial plants, hedges, trees and infrastructure) as well as in social relationships (to build local and more direct markets). The Health & Harmony policy statement indicated that Defra would revise agricultural tenancy laws. For those revisions, England could learn from other countries, including Scotland and France, about different models for secure tenancies. In the crofting areas of Scotland, tenure is secure for smallholders, rents are regulated and crofters receive compensation for improvements [from whom?]. While they have the right to buy their crofts if they wished, many crofters opt out of buying the land they farm because there is little advantage in the context of these provisions for security. Similarly, in France, tenancies are for a minimum of 9 years and automatically renew. French farmland rental prices are tied to agricultural commodity prices, ensuring farmland is affordable for farmers and discouraging the ownership of land primarily for speculation.[6]

Without appropriate checks, long tenancies could enable poor practices to continue uncontested. For example, tenancies under the Agricultural Holdings Act can prevent landlords (including councils) from intervening in tenant farming practices of tenants until the tenancy runs through several generations.<sup>10</sup> However, existing models in England and elsewhere are demonstrating ways this can be overcome. In Scotland, oversight from the Crofting Commission for appropriate upkeep of crofts ensures some degree of accountability while still providing the security of long tenures.

## 2. Poor access to capital

Aside from the obvious barriers caused by the high price or rental costs of land, there is also the cost of investment in infrastructure and machinery. Such infrastructure could range from polytunnels to farm tools to small tractors, packing sheds and milk processing equipment.

Defra's Countryside Productivity Small Grant scheme in England has offered reasonable sized grants for small farms, of £3,000 to £12,000, but grants only cover 40% of costs. Securing match funding for larger items is out of reach for many farmers. England's Young Farmers' Scheme entails a boost of 25% to the area-based payments received by farmers under 40 years of age. However, given that the majority of agroecological holdings are under or near the limit for basic payments, this scheme excludes many young agroecological farmers.

England could learn from Scotland's popular support schemes for new entrants and young farmers. Such a scheme could be modelled on Scotland's New Entrants and Young Farmers Start-Up schemes, which provide grants of £15k - £70k. That money can be used for the purchase of land, infrastructure, or cover other start-up costs. The New Entrants Capital Grant Scheme couples grants for people new to farming with consultancy advice and mentoring from experienced farmers.[52] The £14 million earmarked was spent long before the projected end of the scheme as demand outstripped supply.[52] Scotland had until recently been running a New Entrants Capital Grant Scheme for people new to farming, which covered materials (such as for deer fencing, polytunnels, drainage, etc.), costs of contractors and labour costs. This was also coupled with one to one consultancy advice and mentoring from experienced farmers. Unfortunately, in August this year the

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<sup>10</sup> The inability to influence farming practices due to AHA tenancies was referenced in a study of the Brighton & Hove Council's Farmland Estate. See Wach and Ely 2018 for more details.

Scottish government decided to end the scheme abruptly.[53] However, this scheme, as well as the New Entrants and Young Farmer Start Up Scheme, was supportive of smaller scale new entrants to farming and had been used by agroecological farms.[54]

### **3. Lack of skills and training**

While some agroecological techniques are traditionally used in England, such as the rotation of animals and crops and the use of windbreaks, the majority of existing conventional farmers and aspiring agroecological farmers are potentially unaware of the viability of many useful agroecological approaches such as polyculture for a diversity of crops, push-pull techniques for pest management, soil fertility building through bio-fertilisers and green manures and more.[55] While the *Health and Harmony* White Paper and Policy Statement heavily emphasized the need for technology, a high-tech approach is unlikely to support agroecology. Developing skills and knowledge of farmers is indispensable to producing food in ecologically sound ways. Agroecology is highly knowledge intensive, both in terms of the broad range of practices, but also in terms of the location-specific knowledge required to practice agroecology effectively. Support for ongoing knowledge development—particularly related to agroecological approaches—needs to be emphasized as much as or more than investment in the latest tools and technologies.[56]

Training opportunities in agroecology do exist, but there is a need for more training courses to supply the knowledge and skills required to operate an agroecological holding. Most formal agroecological trainings occur outside of mainstream agricultural and horticultural colleges.

If considering organic trainings as agroecological, then trainings include those provided by the Soil Association, Biodynamic Agricultural College, School Farm CSA, Schumacher College and Garden Organic. Scotland's Rural College is the only mainstream college which provides an organic farming MSC and other trainings to the authors' knowledge. Shorter trainings include those offered by the Kindling Trust (a 4-day commercial grower course), the Agroecology Land Trust, Bridgewater college (Level 5); and an Organic Gardening Course at the Horticulture Correspondence College.

The Soil Association runs a 'Future Growers Scheme'. While this was previously a 2-year paid apprenticeship with mentoring from the employing farm, it has unfortunately been reduced to a series of 6 weekend courses and farm visits with fees upward of £1,500. This significant cutback is largely due to a continuing problem with finding host farms that can afford to pay apprentices year round.

There are several informal traineeships are run by existing farmers and growers, which provide on farm education, and experience. These schemes are generally very positive in outcome, but more formal training that include classroom-based learning could enhance student learning. The LWA is currently investigating expanding and enhancing the present system of informal traineeships with additional peer to peer learning, farm walks and better information sharing between farmers, and trainees.

It is essential that Defra supports existing 'conventional' farmers to engage with agroecological practices to accelerate improvements to farming practices. Many conventional farmers are unaware of ways in which they could reorient their farms to better integrate food production and ecology. Initiatives implemented by Natural England to support farmers to reduce nitrate usage and improve wildflower margins are a great start but much more is needed. Further support could be offered to enable farmers to reduce pesticide use, introduce polycultures, regularly use cover crops and integrate livestock and crops where appropriate.

DEFRA's *Health and Harmony* White Paper states: "Making sure that our agriculture, horticulture, forestry and food supply chain industries have access to sufficient and suitably-skilled labour is essential to industry growth and competitiveness. We will take the opportunity to stimulate a forward-thinking agricultural industry that invests in the future through innovative practice and automation." (p10). It is essential to recognise that the innovations needed are not necessarily high-tech. Defra needs to support the innovative agroecological skills that are already being developed: skills mentioned above which make farming enjoyable and rewarding to the next generation of farmers, as demonstrated by recent research.[3] Unfortunately, in its section about 'a skilled workforce' the Policy Statement only referred to plans to allow in migrant seasonal workers, leaving questions about whether and how it might improve the skills of its existing farmers or new domestic recruits.

#### **4. A need for supportive markets**

The structure of mainstream food markets is largely prohibitive for agroecological production. High levels of consolidation in trade, processing and retail, as well as a just-in-time supply chains demand high volumes, high uniformity and high flexibility, while reducing the monetary value received by producers.[57] These structural barriers to agroecology need to be tackled through, for example, strengthened regulation to break up oligopolies and other regulatory mechanisms, at both national and global levels. Parallel to this, markets which support agroecological production should be encouraged at local and national levels, as described in this section.

Given that agroecological farms tend to be smaller, there are inevitably challenges around economies of scale. Logistics (including transport) and market access (e.g. insufficient quantities to sell to certain purchasers) can make certain markets – including those of large retailers and public procurement schemes—inaccessible, particularly in the absence of cooperative-like structures that could enable producers to aggregate their goods, processing and/or transport.

Prices received for products are an issue for all farmers, who receive a small percentage of what consumers pay for food products. According to Defra 2017 statistics, total consumer expenditure on food, drink and catering services in the UK was £220bn.[42] The total income from farming was only £5.74 billion,[58] of which £3.7bn came from subsidies.[42] Thus it appears only 1% of consumer spending contributed to farm incomes in Britain.

Agroecological farmers have to compete with cheap food, sold at prices which do not reflect the true costs of producing food. These costs are still paid for, but through taxes (e.g. to address obesity, flooding, water pollution, etc.).[27] Prices are largely dictated by large-scale commercial traders (e.g. ADM, Bunge, Cargill & Dreyfus), processors and retailers [59], and consumers' perceptions of reasonable prices for fresh produce are influenced by the prices that consumers see in the supermarket.

The *Health and Harmony* White Paper states, "...we will adopt a trade approach which promotes industry innovation and lower prices for consumers." While it is essential that food is affordable, it is questionable as to whether lower prices are needed or even feasible without further ecological degradation at home and/or abroad. Defra should not champion cheap food instead of affordable food. 'Cheap food fundamentally tends to reinforce<sup>11</sup> social inequalities, rather than addressing food poverty'.[60] Cheap food also tends to disregard (or externalise) environmental impacts of production, meaning it is unsustainable in the long term.

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<sup>11</sup> Or concretise

While the Defra September Policy Statement and *Health and Harmony* White Paper mention improvements in the collection and sharing of data and information for increased transparency and communication, it is unlikely that this will, in itself, change the structure of supply chains so that farmers can earn a living wage while covering the costs of sustainable production. While conventional farmers receive a very small percentage of the retail price of food in mainstream supply chains, examples of other types of supply chains indicate that it does not need to be this way.

Shortened supply chains can help ensure that a reasonable monetary return can be made from the producer's labours. It is working through these shorter supply chains that most agroecological farmers make a living. A number of 'alternative' marketing models, and food distribution networks, which are operating successfully at present using short supply chains. These tend to be based on relatively local markets, with 'local' being defined differently by different actors and varying across different foods. Four models, community interest intermediaries, public procurement, cooperatives and community supported agriculture (CSA) are discussed below.

#### **a. Community Interest Intermediaries**

Most of the retail value of food is currently captured by intermediaries, rather than accruing to farmers. Farmers markets and veg box schemes developed in part as a response to this as they offer a way for farmers to retain most more of the retail value of their foods. However, not all farmers have the capabilities, resources or desire to sell directly. Community-interest intermediaries can play a role in these situations. Tamar Grow Local<sup>12</sup> (TGL) is a not-for-profit Community Interest Company in Plymouth. With a mark-up of only 18% between the producers and consumers, TGL offers producers fair prices based on the cost of production, rather than global commodity market prices. TGL's offerings to producers have been, at times, up to 150-275% higher than average farm gate prices.[61] TGL also creates new marketing outlets for producers through shared label schemes and processing units. TGL's 'Grow Share Cook' scheme procures buys vegetables from local farmers and distributes them to people living in food poverty. The programme has achieved a healthier diets for 85% of participants.[61]

TGL provides support to 60 producers, has reached 200 low income households and even more general consumers. With a required external support of £40k per year from donors, Tamar Grow Local is economically efficient in its support to producers while also generating important social and health outcomes for Plymouth's population.[8] Without support, however, it is possible that TGL and other successful models would have to scale back or shut close down.

#### **b. Public Procurement**

Public procurement offers potential to create steady and reliable markets for farms and to support farmers to produce sustainably, while also providing access to healthy foods for the public, including people experiencing food poverty or other challenges. The UK public sector spends £2.4 billion annually (£1.2 billion of which is spent in England) procuring food and catering services, of which £1.2 billion is spent in England).[62]

'Sustainable Public Procurement' (SPP) has the potential to address many environmental and social concerns.[9] Taking into consideration 'production methods' of suppliers is well within the remit of current WTO and EU regulations: Article 67 in Directive 2014/24/EU allows for Sustainable Public

Procurement, in that the ‘most economically advantageous tender’ can allow for not only cost but also ‘delivery conditions such as delivery date, delivery process and delivery process...The weighting of the award criteria further allows for achieving the best combination of price and quality’.[63] This can allow for prioritising local suppliers in sourcing.

Within Europe, many local and regional authorities, have altered their tendering procedures to source from small and medium sized producers who are based in their locality and/or producing using ecological approaches. Examples include the school sectors in Malmo (Sweden), Rome (Italy), Lens (France), Munich (Germany), and Bath (England); as well as municipalities of Zagreb (Croatia), Tukums (Latvia), and Podravje (Slovenia).[9] However, one of the best examples of public procurement which supports ecology and family farms has been that of Brazil.

Brazil’s school feeding and public procurement programmes operate at national scales and are run through local municipalities. They explicitly aim to benefit both food producers and consumers, particularly small-scale farms and consumers who are living with food and nutritional insecurity. To achieve this, food is procured using a simplified and smallholder-friendly procurement model which has substituted the traditional bidding procedure’, thirty percent of funding for school meals must be used to source food from family farms in the municipality, and agroecological and organic farms (certified through a Participatory Guarantee System) are given a price premium and preferential access to contracts.[64]

While Defra commissioned *A Plan for Public Procurement* in 2014, its recommendations rely on voluntary action by caterers and procurers and does not include provision to ensure contracts do not simply go to large scale suppliers.[62] England could learn from Brazil and other countries to leverage the potential of its public procurement.

### **c. Cooperatives**

As noted in the Health and Harmony White Paper, cooperatives are ‘a powerful way for farmers to benefit from economies of scale and lower the costs of buying inputs or hiring services such as storage and transport. Agricultural cooperatives also enable farmers to access new markets and reduce risks.’ (p57) Supporting more producer cooperatives, through offering grants and technical support, could help address the aggregation and economies of scale problem faced by many agroecological producers.

### **d. Community Supported Agriculture (CSA)**

In Community Supported Agriculture (CSA), consumers subscribe to, or become a member of, a farm scheme, often for one year at a time. This creates a direct link between producers and consumers and gives farms a degree of certainty about their customer base. In some schemes, consumers share a degree of risk, for example, accepting that they may receive less food from the scheme if a harvest fails, while nonetheless paying their monthly or annual share. CSAs can also involve members working on the farm for a certain amount of time to contribute to the production. CSAs can be arranged by individual farmers or through collective groupings of farmers.

CSAs often provide consumers with a high wide variety of foods. Quality is guaranteed partly through the ability for members to come to the farm and witness production processes, and partly through the accountability that comes with a direct connection with the producers. ‘Rather than a distant, anonymous production of food grown with chemical inputs certified ‘safe’ by a government bureaucracy, CSA members not only know where and when their food is grown, they know who

grows it.’[65] CSAs also reduce distance between producer and consumer, leading to less environmental impacts from transport.

The two main reasons why people become members of a CSA is to access quality food and/or affordable food.[10] A study of CSAs in England found that, ‘Although CSA members are more likely to enjoy middle class incomes, all income brackets are represented: 12% of members have annual household income under £15,000. For 37% of initiatives, providing a service for those at risk of social exclusion is a high or medium priority aim. A handful of initiatives offer discounts to the low waged or accept Healthy Start vouchers, though more are planning to do so and several offer free or discounted shares in return for work.’ (Ibid, p30)

CSAs can offer an entry into farming for those who do not want to follow a ‘conventional’ approach or who find the status quo inaccessible. CSAs have been demonstrated to create employment in agriculture: an average of 2.6 full time equivalent employees per initiative (Ibid, p31)

At present, there are approximately 100 CSAs in England, serving an average of 40 households each.[66] While this is not insignificant, there is certainly scope for its expansion.

## Conclusions

A small but growing number of farms in England are already demonstrating the potential of agroecology—which has been well documented globally and in England—to produce healthy and nutritious foods while regenerating (not just sustaining) the ecosystems on which they depend. Agroecology has also demonstrated potential for better supporting farming livelihoods and rural communities. However, at present, little to no support for agroecology is provided by Defra, or any other part of the government, and there is little evidence of support to come from the *Health and Harmony* Policy Statement and White Paper. Without this support, it is unlikely that agroecology will become widely practiced in England.

While *Health and Harmony* can be applauded for its recognition of the environment as an entity worth supporting, the proposed policies are unlikely adequately to address England’s pressing environmental and food security issues. Public money for public goods on its own is unlikely to result in more ecological farming approaches, and evidence demonstrates that farm margins and areas set aside for conservation are not enough to protect biodiversity and mitigate harmful farming practices.

The removal of area-based payments, on its own, is unlikely to address a lack of availability of suitable land for agroecological farming, or the high land prices which make land inaccessible to new entrants. Land speculation and farm consolidation will continue to prevent new entrants and agroecological farmers from accessing land unless measures are taken to address this constraint.

There are questions about whether and how the proposed policy framework will support the production of sufficient healthy food that is accessible to all people in the UK. If imports become less reliable and/or more costly after Brexit, there will be even more need to ensure that the production of healthy food in Britain increases rather than declines. Agroecological farming can produce nutrient dense food, often at yields which are comparable to current farming practices, though not yet at lower prices. Support for fairer, more direct markets as discussed in this paper, can help ensure that agroecologically produced food is not limited to a niche market. It can also help ensure that farmer livelihoods, and the sustainability of their farming methods, are not undermined by commodity price volatility.

Mounting evidence demonstrates the harmful effects of policies which have failed to link healthy food, agriculture, the environment and producer livelihoods. The Health and Harmony policy statement and white paper do not acknowledge, or explain how, this dis-integration of policy will be adequately addressed. This briefing has outlined practical, feasible strategies for Defra to support approaches that integrate rather than separate, ecology and the production of healthy food which is accessible to all.

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