ENGLISH ORGANIC FORUM

RESPONSE TO DEFRA CONSULTATION - HEALTH AND HARMONY: THE FUTURE FOR FOOD, FARMING AND THE ENVIRONMENT IN A GREEN BREXIT

This response to the consultation is a joint response from the English Organic Forum (EOF). The Forum represents the broad range of organic farming, food, certification, trade, research, information and civil society organisations working in the UK and specifically in England, including:

- Abacus Agriculture Ltd.
- Biodynamic Association
- Daylesford Foundation
- EcoS Consultancy
- Future Sustainability
- Garden Organic
- Institute of Organic Training & Advice
- Land Workers' Alliance
- Organic Arable
- Organic Farmers and Growers CIC
- Organic Food Federation
- Organic Growers Alliance
- Organic Milk Suppliers Co-operative
- Organic Research Centre
- Organic Trade Board
- SA Cert Ltd.
- Soil Association
- South Devon Organic Producers Ltd.
- Triodos Bank
- UK Organic Certifiers Group

EOF welcomes the opportunity to contribute to the debate about the future of agricultural and environmental policy in England and the UK. The organic sector supports Defra's ambition for a policy that delivers the highest standards, one where the delivery of environmental, health and other public goods is very much centre stage, closely integrated with sustainable food production.

The future system for environmental land management will need to ensure that farmers can continue to manage the land sustainably, including being able to make a good living. The English Organic Forum strongly supports the concept of public money being directed towards public goods, with a new environmental land management system as the cornerstone of this approach. This will enhance the environment upon which food production depends, provide much greater access to nature and the outdoors (which we know promotes physical and mental wellbeing), and open up new opportunities to farming to build a more sustainable and financially viable sector. A better future for the nation, one which includes a fair deal for our farmers as well as citizens, and is founded on a rich, healthy environment, is possible. Public funding can continue to be justified, if it is linked to the delivery of these public benefits. We believe that organic farming and food can make a significant contribution to this as a systems-based approach that successfully integrates farming and the environment and delivers both public goods and economic benefits.

The government's "Health and Harmony" paper is a positive step in the right direction towards a land management system that will deliver environmental and health benefits. We hope that this will be reflected in the Agriculture Bill. However, more detail is urgently needed (both for the environment and for farmers) on the level of funding post-2022 and there are several key elements we believe would strengthen the emerging agricultural policy framework and any new environmental land management system. These are detailed in the points below.

Summary and conclusions

1. Government policy should recognise both **the environmental and economic benefits of the organic sector** and support the growth of the organic sector to at least 10% of UK food and farming within the next 5-10 years. This scale of development is consistent with progress in other countries, and complementary to other policy initiatives envisaged in the consultation.
2. **Multi-objective, systems-based approaches** such as organic farming have the potential to deliver a wide range of public benefits and overall can be more effective than targeted, single-objective schemes. There is a need to prioritise and pilot the wider adoption of such schemes.
3. **Public health, sustainable resource use and animal welfare** should be considered as priority public benefits alongside the ones identified in the consultation.
4. Specific **organic conversion and maintenance support options** should be maintained and expanded, in recognition of the environmental benefits. The payments should reflect these benefits, be developed in partnership with the organic sector, and provide a stable background against which market initiatives can be developed.
5. **Research evidence, certification schemes and sustainability assessments** can be used to demonstrate the delivery of public benefits at lower cost that the direct measurement of outputs, particularly in the context of multi-objective approaches.
6. The **productivity of organic farming** is comparable with or better than non-organic when considered in a broader sense than yields along, including financial and natural capital outputs, and resource use efficiency.
7. The **organic market in the UK** requires further development to underpin the benefits provided by organic land management, meet growing domestic demand, substitute for imports and exploit export opportunities.
8. **Ecological innovation, participatory knowledge exchange** and dedicated organic advisory, training and information services need to be developed to improve system performance and public benefit delivery.
9. **Citizen and community engagement** should form a core part of future food policy, integrated non-commercial recreational horticulture, allotments, Community Supported Agriculture, public procurement and other initiatives.
10. **Society's investment in agriculture and the environment** should be maintained, not only to support current producers, but to reduce the costs of major issues such as obesity, climate change and flooding.
11. The **English Organic Action Plan** currently under development and scheduled for publication in the autumn provides for a range of actions, some industry led, others that require government support, to address these points. The key actions contained in the plan should be supported as part of future policy.

1 Delivering public benefits and economic productivity – the contribution of organic food and farming

1.1 Organic delivers for the environment and the economy

We believe that there is great potential for organic farming to contribute to the delivery of both public benefits and economic productivity goals within the new policy framework. There is now significant research evidence that organic farming delivers environmental and other public benefits, including soil health, water quality, biodiversity, climate change, animal welfare, food quality and public health (Box 3). These benefits are widely recognised through the inclusion of organic farming in agri-environment programmes and as part of the greening component of the current Basic Payment scheme. While the restrictions on inputs and practices that deliver these benefits may lead to yield reductions, the regulated, specialist organic markets and consumer demand help to ensure that organic farms in the UK and internationally are economically productive, delivering competitive financial returns to their non-organic counterparts. There are few other examples where significant public benefits are generated in combination with dynamic market support, reducing but not eliminating the need for public funding to support the delivery of public benefits.

1.2 Organic is a mainstream policy option in other countries

The potential of organic farming to deliver both public goods and economic benefits and to become mainstream is increasingly recognised in other countries. For example, in Austria nearly one quarter of land is now managed organically, with organic farming recognised as the primary systems-based approach to delivery environmental outcomes. Several other EU countries, including Italy, Sweden, Estonia, France and Germany, are either approaching or aiming for at least 20% of land area under organic management.

1.3 Organic can grow in the UK to achieve similar status

We believe that the UK could achieve at least 10% of land under organic management (currently less than 3% compared with an EU average of 6.7% in 2016) within a five- to ten-year period, and that the UK should aspire to be a global leader, not a laggard, in organic food and farming.

This would make a substantial contribution to addressing the misperception held by some in the UK that organic food is somewhat elitist and exclusive. This is not a view shared in other countries where organic is now an everyday normality. Several countries, including Austria, Denmark, Sweden and Switzerland, are close to 10% organic shares of the total food market, with organic also a high proportion of public catering. The UK organic market has been growing for several years, but has some way to go to reach the levels now being achieved by our competitors in countries which also have a more supportive policy framework.

1.4 Organic needs dedicated support in recognition of benefits

For these reasons, a dedicated organic support scheme, which recognises the multiple benefits delivered by this systems-based approach, and the market potential, but does not expect a minority of consumers to take full responsibility for paying for the public benefits delivered to all, is fully justified and needs to form a core part of future UK policy, both in England and the devolved administrations.

We recognise that organic is not for everyone, but it is an opportunity for many farmers and consumers alike. The expansion of the organic sector can deliver the policy outcomes sought by government, given a fresh vision for what can be achieved. The government should take a positive approach to organic growth in its future policy, including specific organic support to reward and encourage the public and economic benefits that can be delivered.

BOX 1: ORGANIC IS MAINSTREAM

Organic food and farming has growing significance in the UK and globally. In 2016, there were 3,560 organic farmers in the UK, managing 508,000 hectares of organic land, and 2,800 organic food businesses supporting an organic market growing at over 6% per year and now worth £2.2 billion retail sales value. This is part of a European organic market of £30 billion, itself part of a global organic marketworth £70 billion. Consumer trends and producer engagement indicate that organic production is scalable. In other countries in Europe and beyond, organic represents a far greater proportion of the production base and food market, with 10-20% of land area organic and 5-10% of food sales organic increasingly typical.

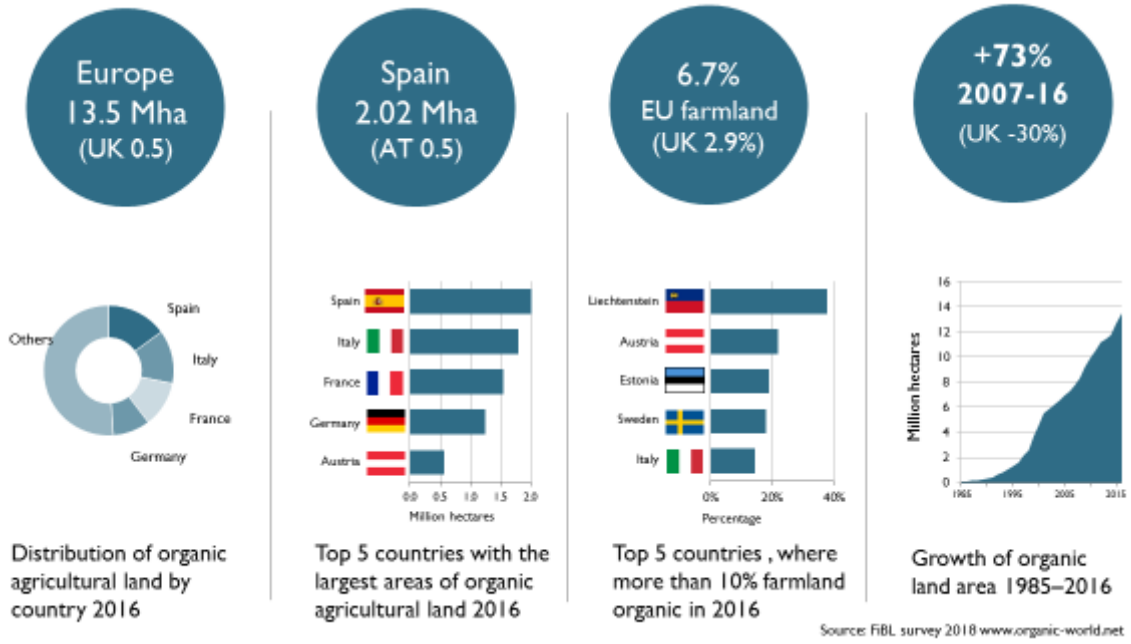

Figure 1.1: Organic land area in Europe, 2016

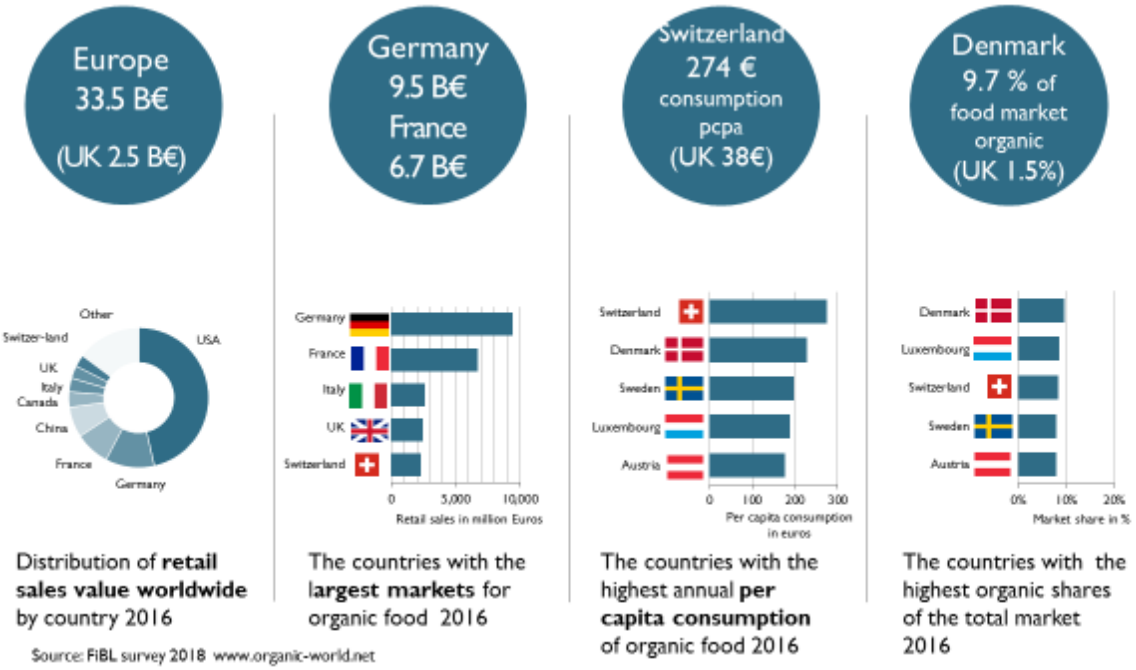

Figure 1.2: Organic food retail sales in Europe, 2016

2 Delivering multiple public goods and natural capital regeneration through integrated, systems-based approaches

2.1 All the key public goods identified, and more, are important

The consultation document identifies a range of relevant public benefits that agriculture should help deliver, ranging from soil health to water quality, air quality, biodiversity, climate change mitigation and landscape. There is a serious risk that prioritising one of these over others, or addressing specific benefits in isolation, could lead to unintended consequences, conflicts and trade-offs. However, we do recognise that in different regions, there may be different priorities, reflecting specific geographical/environmental circumstances.

In addition to the public goods identified, the following are also important:

a) Public health including access to a healthy environment in which to live and access to safe, quality, affordable food (food security). Pesticide reduction has a key role to play in this;
b) Sustainable resource use encompassing closing nutrient cycles (in particular carbon, nitrogen and phosphorus); use of renewable energy in place of fossil energy; waste reduction and the associated conservation/regeneration of natural capital

Animal welfare should be recognised as one of the key public goods supported by policy intervention. The consultation focuses on animal health and welfare in terms of absence of disease; there is no mention of policies to eliminate stress, promote natural behaviour patterns or enhance wellbeing. A positive approach to the promotion of animal health and welfare is required.

2.2 Multi-objective, systems-based approaches can deliver more

There is strong evidence that integrated, agroecological, systems-based approaches, including conservation agriculture, integrated farming, organic farming, agroforestry and permaculture, can all help deliver multiple benefits. An ecological approach to the design and management of farming systems, relying on biological nitrogen fixation, organic matter and the recycling of nutrients (at farm and regional levels) to feed the soil, crops and animals; habitat management to encourage beneficial insects for pest control; free-range, pasture-based livestock production complementing human needs for grain and other crops, helps to deliver farming systems that are sustainable, resilient, regenerative and welfare-friendly, producing quality food and other products.

It's not only about ecology – care for fellow organisms, species and ecosystems; welfare of human beings and animals; social justice through the whole food chain, from producers to consumers; and human health as well as that of soil, plants, animals and the environment, are all important.

There is nothing unique about the individual practices that organic producers adopt – any farmer or business could do this, and Defra is currently funding research to help demonstrate this[1]. What is unique is the combination of multiple practices, ideas and objectives in complex, inter-connected systems, where trade-offs between goals, such as land use for biodiversity and food production, need to be accommodated, not ignored. Actions to benefit wildlife on farms don't just benefit wildlife – they also support the generation of ecosystem services, including pollinators and biological pest control, that benefit agriculture in return. A land-sparing strategy, sacrificing biodiversity for intensive food production is not appropriate in this context.

Organic and other agroecological approaches may not deliver on an individual benefit to the same extent as single-issue focused schemes might, but the synergies arising from a systems-based approach, and the delivery on multiple benefits, can lead to greater overall delivery of public

[1] Led by Organic Research Centre, due to be completed by July 2018.

benefits (Box 2). Achieving this requires creativity and innovation on the part of producers and food businesses, finding solutions often at variance with conventional thinking. Government policy needs to create the space for this to happen.

2.3 Organic is legally-defined, frequently inspected and has consumer confidence

Many of these systems-based approaches are well defined in the literature, but only organic farming is defined in legal terms in the EU and elsewhere, which is set to continue in UK law post-Brexit. Organic regulations define core principles and practices that are not permitted as well as recommended practices, and they exclude most fertiliser, plant protection and other inputs unless specifically authorised. The annual inspections of all organic farms provide consumers with confidence that they are getting what they pay for. Organic food and farming businesses are pioneers, not only in environmentally-friendly farming but also in marketing and citizen engagement.

2.4 The polluter pays principle

The English Organic Forum supports a full and ambitious implementation of the 'polluter pays' principle, not least as a way to level the playing field for organic producers who are internalising externalities by restricting the use of certain inputs and practices. Taxing the use of inputs associated with negative environmental impacts, such as artificial fertilisers and pesticides, could help address this, but it would be necessary to ensure that the revenues generated are reinvested in payments for environmental and other public benefits, especially through the adoption of organic and agroecological food production, to avoid a negative impact on agricultural incomes overall. This principle is not, however, limited to agriculture and should also cover recreational horticulture/ gardening; textiles, cleaning and industry generally. The principle could also be reinforced through more transparent labelling to highlight the environmental costs associate with intensive production, reversing the burden of certification to the polluter instead of organic producers.

2.5 Prioritise and pilot systems-based approaches

The government should prioritise systems-based approaches to securing environmental outcomes as public goods via agriculture.

We agree that the transition period should include testing out the new environmental land management system to understand the opportunities and challenges of new approaches, including how these are assessed and valued for their natural capital contribution.

The proposed pilots of environmental land management schemes during the agricultural transition period must include whole systems, agroecological approaches such as organic farming, including group approaches for example in catchment sensitive areas. The organic sector can continue to serve as a testbed for innovative and sustainable food production coupled with the delivery of social and environmental outcomes.

BOX 2: ORGANIC DELIVERS MULTIPLE PUBLIC BENEFITS AND BUILDS NATURAL CAPITAL

There is an extensive body of research from the UK and many other countries evidencing the benefits of organic farming and other agroecological system-based approaches, a recent summary of which can be found in: *The Role of Agroecology in Sustainable Intensification* https://www.snh.gov.uk/docs/A1652615.pdf. Organic systems deliver benefits for:

Soil health *by*

- building soil fertility using legumes to fix nitrogen and low-solubility mineral fertilisers
- supporting more biological activity, including earthworms and mycorrhizae
- building organic matter levels, sequestering carbon and reducing erosion levels
- supporting water infiltration, reducing flood risks

Water quality *by*

- reducing nitrate leaching and phosphorus losses to water courses and eutrophication
- reducing pesticide and nutrient contamination of water supplies
- reducing stocking rates to levels equivalent to Nitrate Sensitive Area limits

Water companies in many countries are recognising these benefits by encouraging organic management in catchments to deliver better water quality.

Air quality *by*

- reducing spray drift, ammonia and other emissions

Biodiversity *(soil organisms, plants, insects e.g. pollinators, mammals, birds and habitats) by*

- avoiding most pesticides and all herbicides, which impact directly and indirectly on biodiversity
- retaining non-crop plant species within fields as well as field margins, supporting insect life
- including refuges and other habitats to encourage beneficial organisms and wildlife
- diversifying crops grown, both in rotations and mixtures and integrating crops, livestock and trees
- alternating autumn and winter sown crops for weed control, with benefits for farmland birds

Climate change *by*

- avoiding synthetic nitrogen fertilisers with their associated NOx emissions and fossil energy use
- increasing soil organic matter in the fertility-building phase of organic rotations, sequestering carbon
- reducing reliance on purchased feeds for livestock

Research suggests that the conversion of 50% of EU land to organic farming by 2030 could mitigate 23% of agricultural GHG emissions through increased soil carbon sequestration and reduced use of mineral fertilisers. Energy savings in production of synthetic fertilisers would reduce emissions by a further 9%.

Landscape *by*

- Diversifying species grown, including flowering legumes and integrating crops, livestock and trees
- Encouraging mixed farming in preference to monocultures

Resource use sustainability *by*

- using natural cycles and processes to capture atmospheric carbon and nitrogen (in some cases supported by carbon and nitrogen budgets as a management tool)
- reducing other mineral fertiliser use, avoiding waste and closing cycles, including returning nutrients like phosphorus from urban areas avoiding losses to the sea following sewage treatment

Initial estimates suggest that if 10% of UK land area were to be managed organically, the use of synthetic pesticide active ingredients would be reduced by ca. 1,600t, and synthetic nitrogen fertiliser by ca 160kt.

Public health *by*

- Encouraging greater awareness of food production methods, quality and dietary choices
- Improving institutional catering, in schools, hospitals and prison
- Increasing the uptake of recreational gardening and domestic fruit and vegetable production
- Engaging citizens on farms through Community Supported Agriculture initiatives
- Encouraging the public to interact with the wider environment for their own health

3 Measuring public benefits and the role of sustainability assessments and farm assurance/ certification schemes

3.1 Need to avoid excessive bureaucracy and administration costs

The focus on public benefits is welcome, but the challenge is how to assess and ensure delivery without adding significantly to transaction or other administrative costs and the bureaucratic burdens faced by farmers. Particularly in the case of schemes including system-based approaches delivering multiple benefits, precise measurement of outputs delivered could be very costly.

3.2 Proxy indicators may reduce costs, but use with caution

The selection of appropriate indicators for assessment is part of the challenge – there is a trade-off between precision and relevance on the one hand and potential costs and administration on the other. There are positive experiences relating to farmer self-assessment, freeing farmers up to find creative solutions to delivering specific outcomes, but these still have a cost in terms of training and monitoring time. A focus on specific farming proxies that are known to result in disbenefits, such as the use of antibiotics and pesticide use, may also be relevant but are also a potential focus for regulatory restrictions. Proxy indicators, which may be lower cost to implement, need to be used with caution as they can also lead to inappropriate conclusions concerning actual achievements and future priorities.

3.3 Rely on existing research evidence where possible

A robust and practical alternative approach, particularly relevant to defined systems-based approaches such as organic farming, is to rely on the now extensive body of scientific research as evidence of benefits, in combination with the certification procedures that ensure that the approaches are adhered to. In doing this, it is acknowledged that delivery may not be guaranteed to the same extent on every holding, due to the wide variations in geography, farm type and farmer skill/experience that exist, but the overall expectation should be that the sector as a whole can deliver. It also needs to be recognised that while some benefits occur directly as a result of compliance with the regulations, such as the restrictions on synthetic nitrogen, pesticide and herbicide use, others may be indirect consequences of the practices that are adopted, for example the impact on bird populations of the increased reliance on spring cropping to help non-chemical weed control.

3.4 Potential of certification/farm assurance schemes

Certification schemes, such as the legal requirement for organic farms and food businesses to be inspected annually, provide a mechanism by which delivery of public benefits may be checked and confirmed. In addition, a significant amount of data is collected by certifiers, which with some thought and development could be used to provide a measure of the sustainability and other public benefits of the organic sector.

Given the existing certification schemes in place, it is questionable whether the development of any new 'Gold Standard' schemes is necessary or desirable, although there may well be scope for improvement in these schemes. We understand that it is not intended that there should be a new scheme replacing existing initiatives, more an aspiration for the UK to be able promote its high standards of production. But it should be noted that there are significant differences between farm assurance schemes, such as Red Tractor, LEAF, RSPCA assured and organic, both in terms of practical requirements and legislative integrity, resulting in different levels of delivery of public benefits, which needs to be rewarded appropriately.

Using the organic certification model could be a cost-effective means by which to monitor and verify the delivery of public goods, as organic standards deliver more benefits in a regulatory

framework implemented by experienced control bodies. We would welcome the opportunity to work with the Government on this.

There is also a need to avoid multiple inspections in such cases. The aim should be for a single inspection system that ensures organic regulation and policy support compliance. The organic control bodies are ready to engage in discussions as to how this may be implemented.

BOX 3A: UK ORGANIC CERTIFICATION SYSTEM

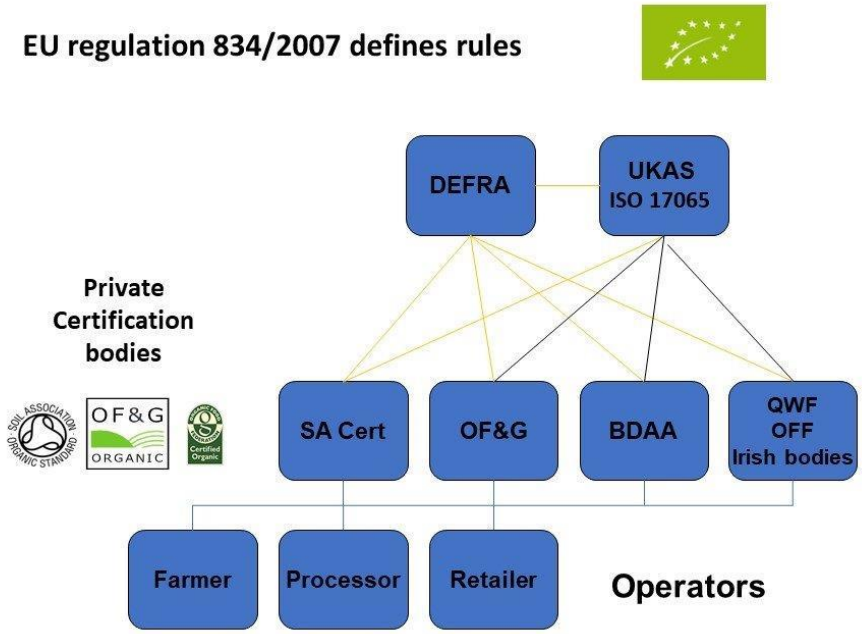

Figure 3.1: UK Organic Regulations set by EU, overseen by Defra with support from UKAS, implemented by multiple control bodies controlling a range of operators annually

3.5 Sustainability assessment

Sustainability assessment tools, such as the Cool Farm Tool, RISE, SMART and ORC's Public Goods Tool (Box 3B), also have a role to play in helping secure public good delivery. This could be relevant at a number of levels:

a) as an advisory tool, to help farmers identify areas needing action
b) as an implementation tool to support individual farm agreements on priority public benefit actions
c) as a monitoring and evaluation tool, to help identify improvements compared with baseline data.

There is a need for further work to define the purpose of such tools in a policy context, and to encourage greater coherence between the different tools that are currently available.

BOX 3B: SUSTAINABILITY ASSESSMENT TOOLS and ORGANIC CERTIFICATION

3.1 Comparison of sustainability assessment tools

Concerns over long-term sustainability within the food and farming sectors have led to a increased interest in the development and application of sustainability assessment tools such as the Cool Farm Tool, RISE, SMART, the Soil & More 'flower' and ORC's Public Goods Tool. Although the various tools can differ widely, there are considerable similarities in terms of the type(s) of data collected.

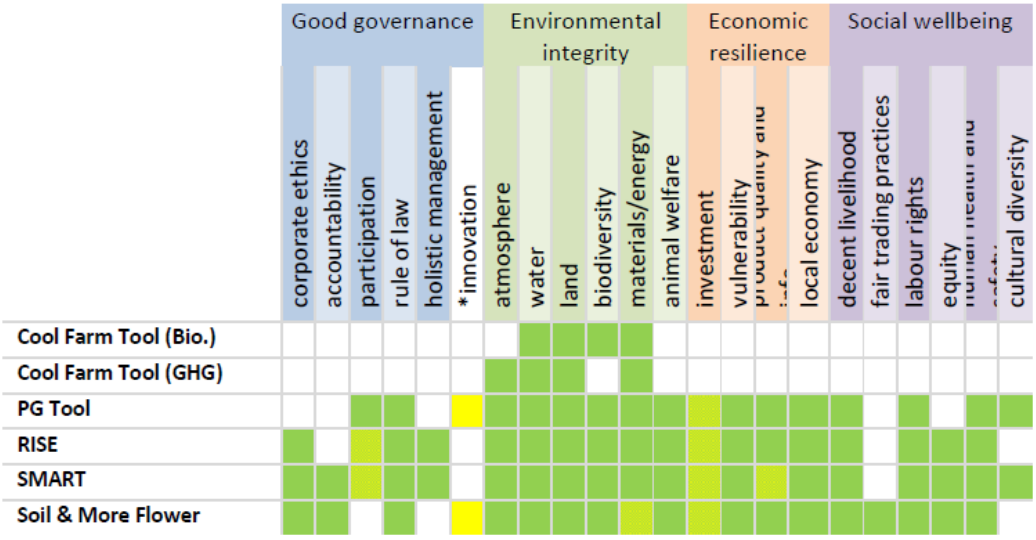

Figure 3.2: Scope of different sustainability assessment tools compared in SFT study

At the same time, farmers operating in the UK are already providing information that could feed into sustainability assessments for statutory reporting (e.g. as part of certification, basic payment or agri-environment scheme participation). Recognising the inefficiency of this approach, a group of farmers and land managers aimed to determine the opportunities for making farm-level sustainability assessment processes as efficient as possible through a comparison of established tools and frameworks. The comparison was undertaken by the ORC as part of the Sustainable Food Trust and the Rothschild Foundation's Sustainability Metrics initiative, with a report published in 2018: http://sustainablefoodtrust.org/wp-content/uploads/2013/04/Sustainability-Assessment.pdf.

The study concluded that although there is a general agreement in the areas that should be covered across a range of tools and frameworks, there is much opportunity for further alignment. Several initiatives addressing the 'interoperability' of tools are already underway (e.g. by the Cool Farm Alliance with the SAI platform). If interoperability could be achieved between an almost-universal tool (e.g. providing data required for subsidy applications) and other, optional sustainability assessments, uptake and use of these optional assessments could conceivably increase and allow for a consistent and efficient evaluation of the public goods delivered by UK agriculture.

3.2 Use of sustainability assessment in a policy context

The potential for the application of sustainability assessments as part of a 'public money for public goods' framework is also being debated at the EU level with respect to future CAP reform. A new report from FIBL and the IFOAM EU Group: *Towards a new public goods payment model for remunerating farmers under the CAP Post-2020 Potential of sustainability assessment tools for improving the effectiveness, efficiency, and acceptance of the CAP,* explores in detail how sustainability assessment tools might underpin a focus on public benefits. The report focuses on further developing voluntary robust measures under pillar II of the CAP, while increasingly mainstreaming sustainability measures in pillar I with a scheme to replace the current greening measures. In addition, it introduces the underlying principle of a results-oriented CAP, where objectives are clear, and a farm's performance is assessed by objective agricultural sustainability assessment tools. This results-oriented approach bases payments on performance, allowing farmers to develop their potential as 'sustainable entrepreneurs'.

4 Organic farming and productivity

4.1 What does productivity mean?

The evidence for the public benefits from organic farming is extensive, but yields are often lower, in particular for crops grown with high nitrogen intensity conventionally. Where crops are traditionally grown with low nitrogen applications, the yield differences are much reduced. These yield reductions are part of the trade-off for the environmental and other benefits delivered. However, productivity is not just about yields – it also addresses the efficiency of resource use, including labour, capital and natural resources/natural capital. Most policy attention is focused on total factor productivity, or the economic returns to land, labour and capital, which does not focus sufficiently on the environment, rural employment or rural development. In terms of natural resource use and natural capital regeneration, organic is more productive in many circumstances due to its restricted input use and reliance on biological/ecological processes, circular flows of nutrients (in particular carbon and nitrogen) and renewable energy (in particular from photosynthesis).

4.2 In economic and public benefit terms, organic is productive

When combined with the premium prices in organic markets, and the policy support for conversion to and maintenance of organic management recognising the public benefits generated, the economic productivity of organic systems and their rural development/employment potential is similar to or greater than that of non-organic systems (Box 4). Detailed analyses of the Farm Business Survey data in England and Wales and other studies have shown both higher employment and higher financial returns to labour on organic farms. Organic farming also exhibits a better demographic profile, with more women and younger people involved.

4.3 The role of the organic market and international trade

The organic market has been developing for more than 50 years and is now global in its reach. The market plays a key role in ensuring the financial viability of organic businesses and provides an opportunity for non-organic farmers adopting organic practices to gain additional financial benefit. While the organic market supports the proposed public benefit policy agenda, it should not be seen as substituting entirely for public support for the delivery of public benefits. Once converted, to organic production, there is an ongoing justification for maintenance support in terms of public benefit delivery – benefits accruing to society as a whole should not be paid for by a minority of consumers. However, the organic sector's experience with developing markets for products with environmental and social attributes can contribute to future discussions on greater business involvement in payments for environmental services.

Organic markets in many countries are experiencing double digit growth, ahead of the growth in the UK experienced in recent years. There is a significant opportunity for the UK to catch up with growth elsewhere, given appropriate support and recognition, including greater emphasis on the development of local/regional markets and shorter supply chains.

The UK organic market currently remains heavily reliant on imports, and exports only limited quantities of products. As organic markets in other countries grow more rapidly, the competition for imports from third countries is growing more intense and there are new export opportunities, but this also represents a threat to the development of domestic markets, with the risk of supply gaps for key products.

Meeting more of current and future demand from domestic organic production rather than imports should be seen as a priority, alongside exploiting the export potential, but this needs to be linked to retaining and strengthening consumer demand, and investments in supply chain development and infrastructure.

BOX 4: ORGANIC IS COMPETITIVE

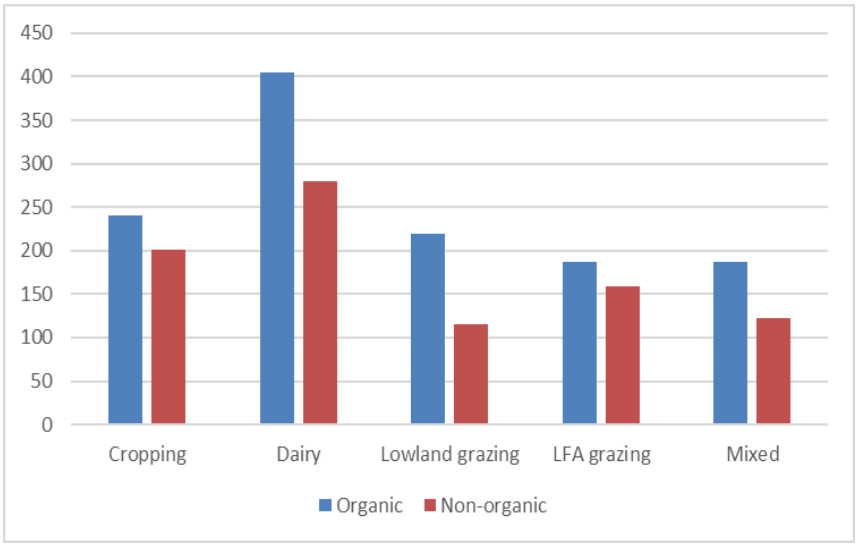

Figure 4.1 **Organic and non-organic Farm Business Incomes in England (£/ha, 2015/16)**
Source: Farm Business Survey, Newcastle University

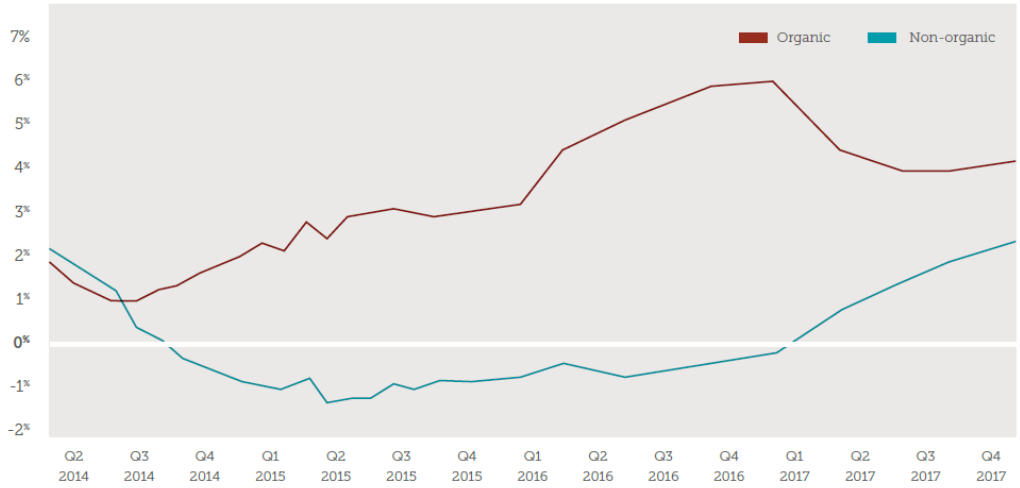

Figure 4.2 **Trends in UK food and drink sales (% change in value, 2014-2017)**
Source: Nielsen Scantrack total coverage food & drink (supermarkets and convenience stores)

5 Ecological innovation and participatory knowledge exchange

UK research and innovation funding is strongly focused on marketable technologies rather than farming systems, and this is reflected in the consultation document. There is very little discussion about ecological solutions which are knowledge-intensive and farmer-focused, core parts of the agroecological approaches including organic farming that can deliver public benefits. The consultation document also says little about the future role of genetic modification and novel breeding technologies, which have been the subject of significant concern and debate. Given that GMOs cannot be used in organic production, there is a need to consider GM coexistence issues if current restrictive policies are to be relaxed. The government needs to be transparent about such a major consumer concern. Indeed, we believe that by keeping Britain GM free, this could provide a market opportunity for both domestic and overseas trade, benefiting both organic and non-organic producers.

5.1 Balancing ecological and technological innovation

Solving production problems and improving productivity, profitability and environmental performance is only partly about developing and adopting new technologies, helping to increase resource use efficiency and substitute potentially damaging technologies and practices with more benign ones. The experience of decades of development in organic and other agroecological approaches has shown that system redesign based on ecological understanding and principles is also a key component of success. An emphasis on system redesign requires more research into the ecology of agricultural systems, as well as improved knowledge exchange and farmer-led practical experimentation to improve farmer skills and understanding. This can enable farmers to find creative, innovative solutions suited to their specific circumstances. A focus on ecological innovation alongside technological innovation, and on low-tech as well as high tech solutions, should be a core part of any research, innovation and knowledge exchange strategy. However, such work is essentially public domain, as there is a less immediate link to marketable technology and therefore less corporate interest in promoting it.

In the last decade, there has been very little UK support for applied ecological research and innovation, in contrast to the funding available through the EU's Horizon 2020, ERANET and other programmes and the investment by countries such as Denmark, Germany and Switzerland. There is no sign from either the consultation document, or the Industrial Strategy, or current AHDB priorities, that this gap will be addressed. At the very least, there is a need for the UK to stay engaged with European funding streams so that international collaborations can be maintained. But it would be much better if funders like Innovate UK (now part of UK Research and Innovation) and AHDB could adapt their funding strategies to specifically address ecological innovation and farmer-led, participatory research and knowledge exchange.

There are also emerging technologies for ecology, playing a supportive role in ecosystem management (e.g. non-chemical weed control; apps for recording soil structure; technology to encourage direct selling and short supply chains). There is still considerable room for development of these technologies, including big data and sensor-based solutions (in areas like soil, crop and animal health, scheme requirements or market intelligence). Digital technologies also have a considerable role to play in knowledge exchange, and we would wish to see government recognising and supporting initiatives like Agricology (web-platform, social media and offline knowledge exchange – see Box 5).

5.2 Novel approaches for participatory knowledge exchange

There is at present no joined up flow of advice, focussing on organic farming. Many different initiatives exist that cover aspects of organic farming, including I0TA, FWAG, industry-led benchmarking groups (e.g. for organic milk and arable production), organic control bodies as well as independent advice. Innovative Farmers and Agricology are initiatives that have developed from within the organic sector in a non-exclusive approach to help the development of agriculture in general, emphasising the role of participatory knowledge exchange. There are further opportunities to develop these and similar initiatives which could be supported by the AHDB and other mechanisms. The dedication of 10% of the total agricultural R&D budget to farmer-led innovation and participatory knowledge exchange would make a significant difference.

5.3 Better access to organic information and market data

Farmers considering conversion to organic agriculture, or the adoption of organic practices, will not necessarily know who to turn to for advice and training, if it is available at all. There is a need for the development of a widely available Organic Information Service, supported by peer to peer mentoring and farmer discussion groups. The former Organic Conversion Information Service provides a model on which to build. The National Organic Training Skillnet in Ireland (www.nots.ie) also shows how specific training and information needs might be addressed.

In addition to technical information and skills, there is a need for a significant improvement in the availability of financial and market data, in order to ensure better choices and investment decisions at all levels, from production to consumption as well as in terms of policy-making. We propose the establishment of an Organic Market Observatory, which would be a joint initiative between different organisations with the aim of providing better collection, collation and analysis of organic market data.

BOX 5: ECOLOGICAL INNOVATION DRIVES SYSTEM IMPROVEMENT

5.1 Ecosystem diversity delivering resilience and health

Plant breeding for resilience
Composite cross populations involve crossing many varieties with each other to create a genetically diverse plant population, in direct contrast to traditional, genetically uniform varieties. These populations can adapt to weather and disease pressures, contributing to resilience and food security. The choice of parent varieties can influence quality and yield characteristics. But the seeds are not marketable under current regulations – a new approach is needed.

Forage diversity for parasite control
Parasites in sheep are a significant problem, exacerbated by resistance of parasites to anthelmintic controls. Research in the UK has shown that novel legume species can reduce parasite levels in part due to tannins protecting proteins through the digestive system and strengthening immunity. In chicory dominant swards, faecal breakdown is more rapid, reducing the survival of parasites in the pasture phase of their lifecycle. Plants and pasture ecology are therefore an important part of animal health management

5.2 Innovative Farmers – www.innovativefarmers.org

Innovative Farmers is a network of organic and non-organic farmers and growers running on-farm trials on their own terms.

Herbal leys for diversity and dairy productivity
A group of dairy farmers have designed a trial to explore the best management techniques for their herbal ley mixes. They want to understand how to manage them to get the very best high nutrient sward throughout the season. Optimising species composition, forage regrowth and sward longevity is crucial, and then understanding the nutritional content of the forage their cows are grazing. Their aim is to improve their livestock resilience by home-growing nutrients.

5.3 Agricology – www.agricology.co.uk

Agricology is a growing community of farmers and researchers:

- sharing knowledge on-line and through events,
- working towards more resource-efficient, resilient and profitable agricultural systems.
- bringing together research and farmer experience on agroecological practices (such as reduced tillage, cover crops and reintegrating livestock)
- replacing inputs with knowledge.

AGRICOLOGY
SUSTAINABLE PRACTICAL FARMING

5.4 Organic practices for non-organic farming

The overall aim of this DEFRA-funded project is to identify how organic management techniques can help improve the sustainability of conventional farming. The project is identifying and evaluating a set of transferable practices used by organic farmers that can reduce reliance on inputs and have wider application in 'conventional' farming.

6 Involving citizens and communities

A major strength of the organic approach is its engagement with citizens and communities, and their concerns about health, animal welfare and environmental issues. This is reflected not only in daily purchase decisions in traditional retail outlets, but also in the use of alternative market channels such as box schemes, farmers markets, Community Supported Agriculture initiatives. It is also reflected in the strong support for organic gardening and allotments, urban agriculture initiatives making better use of public spaces, and support for organic gardens and food in schools.

In speeches connected to this consultation, Secretary of State Michael Gove has emphasised the strength of interest in organic food, in particular amongst millennials, demonstrating that citizen engagement can reach across the generations. Schools have succeeded in educating for environmental consciousness – the need now is to convert this into lifetime behaviour changes. A new farming and food policy could achieve this in the following ways:

6.1 Improve communication with the public

There is a need to make farming and the production of public goods for public money meaningful to the general public. Greater promotion, communication and participation from wider society regarding the future of farming must be supported and delivered by both the agricultural industry and government. The delivery of high environmental, animal welfare and food quality standards by farmers needs to be rewarded fairly, both in terms of taxpayer support and consumer purchases. The creation of a cheap food culture has produced major environmental and health problems, resulting in a heavy burden on the NHS, lack of cooking skills and self-confidence around food, limited engagement with fresh food and where food comes from/how it is produced. We need to change the conversation from the price of food to values. The current Organic Trade Board promotion campaign illustrates how this can be achieved with industry and statutory funders working in partnership.

6.2 Improve public engagement with food production

There is significant scope to increase public engagement with food production, through home gardens and allotments, as well as through direct involvement with farmers. Many of these initiatives can be community-based, for example community orchards, woodlands and food production in public spaces. School gardens also provide opportunities for children to engage directly with growing and preparing food. Existing initiatives, such as Grow Your Own – a supported project to increase home grown vegetables; Master Gardener – training growers in organic practice to enable them to mentor and support individual and community growing spaces to grow organically and productively; Community Supported Agriculture Schemes – which bring communities together to grow organic veg boxes – fresh, seasonal, local; and Master Composter – community waste programmes increasing recycling and home composting to achieve local targets, are all evidence of demand from the non-commercial growing sector which can help to achieve DEFRA's wider ambitions. These initiatives have the potential to stimulate interest in healthy diets as well as a healthy environment, addressing the disconnect between the production and consumption of food that currently exists.

6.3 Promote organic choices through public procurement

Public procurement provides a major opportunity to drive change in public behaviours for sustainable consumption. In many countries, organic food is widely recognised and promoted as a key component of green procurement, but this is less well developed in the UK. Denmark with its strong emphasis on organic food in public catering, provides a role model for the future that the UK could easily aspire to. Its clear and consistent policy and broad support has primed an organic expansion which is now largely self-sustaining and less dependent on external support. There is

scope to improve the UK situation by ensuring that Defra's balanced scorecard approach is more widely implemented, acknowledge the contribution organic food can make, by prioritising organic produce in the School Fruit and Vegetables Scheme, and by increasing uptake of the Food for Life programme.

7 Future funding for agricultural and agri-environmental support

The current £3.1bn annual level of public funding for farming and the farmed environment needs to be maintained, not just during the transition period, in order to deliver environmental goals and support rural development. An independent assessment of scale of need should be commissioned to inform future budgetary requirements. This should consider the negative impacts of not focusing on health and the environment, for example with respect to obesity and flooding.

In general, there is a need for better impact assessments of potential policy changes. There is a need to specify the techniques and issues that should be considered when carrying out assessments of all new policies, programmes and projects, whether revenue, capital or regulatory. All of these should be subject to comprehensive but proportionate assessment, wherever it is practicable, so as best to promote the public interest.

The withdrawal of direct payments is both a risk and an opportunity. There is an important opportunity to redirect payment towards public benefits such as environmental outcomes. However, the capping and removal of direct payments will create a period of uncertainty and volatility for many in the farming community, particularly in the ongoing context that prices paid to farmers do not reflect costs of production. This may well stimulate interest in alternative options such as organic farming and appropriate support and information systems need to be in place to respond to this interest.

While large estates currently benefit from high total payments, many environmental actions, including organic management, are area related, so care needs to be taken to ensure that capping actions do not inhibit these. However, it is also true that smaller farmers face higher fixed costs per unit area in delivering certain actions (including organic certification costs), and higher support may be needed for smaller farms. The current minimum eligibility of 5ha should be lowered to enable small-scale commercial holdings to participate.