



THE OXFORD FARMING  
CONFERENCE  
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# OPPORTUNITY AGRICULTURE THE NEXT DECADE

Towards A Sustainably  
Competitive Industry



With invaluable support from:



Research led by Bidwells

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## PREFACE

In the past three years, The Oxford Farming Conference has commissioned reports which examine elements of UK and global agriculture from a perspective of “where we are now”.

With the theme of the 2014 conference being “Opportunity Agriculture”, this year’s research focuses on looking forward.

Agriculture globally has assumed an increasing importance in the past few years thanks to a number of factors coming together including climate, population and politics. The result has been a supply and demand led increase in the cost of food, but also an increase in its cost of production.

These fast-changing dynamics necessitate change in what we do and how we do it - the status quo will not do at a global or national level.

It is for this reason that we have commissioned Bidwells to produce this latest report, to look specifically at what needs to change in UK agriculture in the next decade to make it sustainably competitive.

This report, produced by Bidwells on our behalf, includes rigorous, original work seeking responses from farmers and the wider industry. Its findings have also been sense-checked by a group of high-ranking “expert witnesses” helping ensure the work’s robustness.



In setting its authors the challenge of making a better-than-guess assessment of the changes needed for UK agriculture to seize the opportunity over the next decade, we have asked them to address three key areas:

- *Identify the areas of structural and investment challenge which inhibit competitiveness or offer competitive advantage, and which discourage, or encourage, investment and new ideas into the sector*
- *Draw on global experience and evidence to point the way forward*
- *Make recommendations (however controversial) for what needs to happen.*

In particular we asked Bidwells to examine these areas from three key perspectives: Farm level structure; the agri-food sector; and macro-agriculture.

Not everything in this report will be palatable. Nor will you necessarily agree with some of its conclusions and recommendations. But its purpose is entirely consistent with the OFC's mission - to inform, challenge and inspire.

Above all, this report should make a difference. Many hours of work have gone into its production, none of which would have been possible without our sponsors, Burges Salmon, Syngenta and Volac. Their foresight in supporting this initiative should help shape your vision for the next decade.

It is likely more change will happen in our industry in the next 10 years than we have seen in the past 50. While it is impossible to be totally certain about the future, it is possible to draw reasoned conclusions as to what needs to happen to accommodate the expected and unexpected.

This report does just that and we are proud to present it to delegates at the 2014 conference...and beyond.



**Julian Gairdner and Adrian Ivory**  
Co-chairmen OFC 2014

## ACKNOWLEDGEMENTS

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### Professor Toby Moltram

Douglas Bomford Chair in Agricultural Mechanisation, Royal Agricultural University

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## EXECUTIVE SUMMARY

### This report is concerned with opportunities

Much of the coverage agriculture has received in recent years has focussed on the challenges ahead - major global issues such as a growing world population, a changing climate, pressure on increasingly scarce resources and the need for "sustainable intensification". But these challenges also present huge opportunities.

Taking the next decade as its horizon, this report looks at the opportunities for UK agriculture at a farm level, within the food chain, and in the widest possible terms. It identifies areas where UK farming could face significant opportunities, and highlights how the industry may be prepared, or ill-equipped, to seize them.

A 2010 study for this conference concluded that the UK is a relatively powerful player in global agriculture. Its high level of agricultural technology, efficient production and political influence perpetuate this position. But it is not without threat, particularly from areas of the world where potential for vastly increased production is seen as achievable within the next decades.

This report examines the current situation and explores the "direction of travel". Furthermore, it explores the scenarios towards which the industry itself believes that direction of travel will lead. This report tests that received wisdom to draw its conclusions.

### This report has found that:

Farming needs new, innovative ways of combining land, labour, capital and enterprise. Current business structures are limiting, and a competitive UK agriculture will seek alternatives to the tried and tested - contract farming still has great potential, but share farming, so successful in New Zealand and other countries, remains relatively untried here. Its adoption requires a major change in attitude from farming towards risk and reward, and sharing the whole value the business generates - even equity.

This reports sees a further "decoupling" of farm ownership from farm operation - investors from outside farming bringing new sources of capital and creating opportunities for the most professional, well-equipped and entrepreneurial farmers as operators.

These professional operators will challenge the accepted definition of "farmer" as the industry and, to a degree, society popularly understands it.

Farming businesses must invest in meaningful assets to allow future profitability - buildings, roads and water systems - and should consider collaborating or cooperating to do so, in order that sufficient capacity can be achieved. Irrigation and access to water will become of increasing importance. This report has looked hard at investment, where it happens today and where it will be needed in the future, if UK agriculture is to remain "sustainably competitive". Current trends suggest that farming is drawing on capital from its traditional source - debt - to sustain working capital requirements.

Farming must invest in its people too - in the widest sense. The UK risks exporting its talent both in the science community, but also in agricultural leadership and business management. These assets must be retained, and invested in, if a sustainably competitive future is to be reality.

The coming decade will bring political challenges too. British farming knows that it cannot be sustainable without protecting the environment. But when the prevailing environmental policy in Europe appears to threaten the UK's ability to be competitive, the UK should challenge it.

And new science - real technological advances in food and energy production are being developed in Europe and often in the UK. This progress cannot be allowed to become marginalised as established transgenic technology has been.

The biggest challenge remains for farmers to grow the food to feed the billions to come, and the energy to sustain them. It is also the biggest opportunity. The UK is well placed in many ways to be sustainably competitive in a decade's time. But it must invest, and be prepared to change, if it is to seize the full opportunity ahead.



“

This study looks beyond the known unknowns and reflects an audible, genuine farmer voice.

”

Ian Ashbridge,  
Report Author,  
Bidwells

## CHAPTER 1 FIRST STEPS

### 1.1 INTRODUCTION

It is the function of the Oxford Farming Conference to look beyond the here-and-now and consider the future and how it may be shaped. So much is already known – the prospect of nine billion mouths to feed by 2050 is no longer new. Few climate-change sceptics remain. And world food stocks, once such a problem for European policymakers, are long gone. All this is known.

Attempts to gauge the future have to be better than mere imagination. All of the above should mean a renewed focus on food production, with the equal need to generate sustainable fuels. We know what these major factors should mean for agriculture. But exactly where will the opportunities come? And will the UK be able to respond? That is the rationale behind this study.

The Oxford Farming Conference has set the task of delivering a better-than-guess assessment of UK agriculture in a decade’s time. The study was to look beyond the “known unknowns”. It was also important that this research be farmer-led, and that an audible, genuine farmer voice be heard through the study.

This work combines a rigorous academic analysis of the current position and the immediate future, with a considered and tested examination of future scenarios. It concludes by identifying areas of real opportunity for UK

agriculture, and areas where the industry must take urgent action (policy, investment, culture change) if UK farming is to be sustainably competitive within a decade.

### 1.2 RECOGNISING A “SUSTAINABLY COMPETITIVE” UK AGRICULTURE

Conventional definitions of competitiveness generally refer to the ability of an organisation, company or nation to deliver products and services that meet general market quality standards at prices the market will accept, providing an adequate return on the resources employed in production. They often focus on productivity of human, capital and natural resources.

A 2010 study by the Organisation for Economic Cooperation & Development<sup>1</sup> looked at agricultural competitiveness and identified three areas where measures can be applied, although its authors acknowledged that competitiveness as a concept is difficult to adequately define.

Trade competitiveness is based on the concept of comparative advantage, and that trade flows are the result of differences in production costs among countries and that countries will specialise in production of goods where costs of production are lower. Relative advantage is unquestionably a major element of true competitiveness but since commodities are not always traded on price alone this is not comprehensive.


Strategic management measures of competitiveness are more complex – under this theory, competitiveness is revealed by performance indicators like cost superiority, profitability, productivity and efficiency.

There have been various attempts to objectively measure nations’ agricultural competitiveness relative to each other. A study by Fischer and Shornberg (2007)<sup>2</sup> calculated profitability, productivity and output growth in 13 EU member states, and by aligning the results with the United Nations Human Development Index, attempted to produce a single competitiveness index.

However, empirical measures of competitiveness based on productivity or output relative to competitors are limited in that they can be distorted by factors like currency exchange rates or government interventions.

There is little consensus on indicators of competitiveness, which can fall into various categories depending on whether they are quantitative measures, components of competitiveness, or drivers.

For any level of competitiveness to be sustained, it must be resilient. A 2009 DEFRA report<sup>3</sup> looked at Resilience and Competitiveness in the light of two principal challenges facing agriculture – food security and climate



change. It defined resilience as an industry's capability to resume a similar level of activity or production following some shock or interruption and its ability to absorb or adapt to disturbances which do not change underlying market conditions. In the context of UK agriculture, examples within recent memory might be the industry's recovery from serious animal disease outbreaks such as Foot-and-Mouth Disease. Given the UK's position in terms of trade, comparative levels of production and efficiency (explored in subsequent chapters of this report), it can be said that UK agriculture is reasonably competitive. However, a slowing in the rate of productivity improvement (for instance in cereal yields) may be a significant cause for alarm.

In the context of the last two decades it can be concluded that UK agriculture is sustainably competitive.

It is not the focus of this report to attempt to gauge competitiveness of UK agriculture, sector by sector, against other nations in Europe or the wider world, nor to attempt to extrapolate how that competitiveness measure may change in a decade.

Instead we have focussed on attempting to define factors which may render the UK agricultural industry less or more competitive based on a widely accepted understanding of the term.

### 1.3 THE UK'S RELATIVE ADVANTAGE

Ultimately every farmer is in competition with other farmers all around the globe for a share of the food market. His challenge is to use or create a position of relative advantage, that gives him the greatest chance of success in an uncertain occupation. The UK farmer, when compared to many of his peers and competitors around the world, can be said to be well placed.

#### Politics, property rights and the rule of law

British farmers operate against a backdrop of very significant political stability, secure and enforceable property rights and an independent judiciary. Is it only when farming in other parts of the world, where property rights are arbitrary, courts can be bought, and corruption is commonplace, that such advantage comes clearly into focus. It should not be underestimated in conferring relative advantage.

#### Climate

The UK benefits, on the whole, from a benign temperate maritime climate, with reliable rainfall, adequate sunshine and relatively mild winters. Extreme weather events which significantly affect production, are rare (2012 was an exception) and variation in total output of individual crops is remarkably low year on year.

#### Markets

British farmers benefit from a large and proximate market. With a wealthy population of 63 million and growing and the further 506 million of the EU-28<sup>4</sup> in a single trading block, British farmers are able to supply a wide range of customers for most products with a very low cost of delivery. In addition the British farmer usually has the benefit of a number of potential purchasers, a sophisticated supply chain, a low level of customer and credit default, and a range of high quality handling and storage opportunities. Suppliers compete to sell inputs, machinery and other services.

#### Research & development, knowledge transfer, education

The United Kingdom has an enviable global reputation leading research and development in science and technology. This has been true in agriculture, plant and soil sciences, livestock breeding and management for many years. However, the funding by government of both original

research and the transfer of that new knowledge onto farm at the applied level has been reduced over the last few decades. This is explored in more detail in subsequent chapters.

### Capitalisation

One benefit flowing from a long history of government support has been the relative security of income which has allowed, over time, a significant level of capital investment in land, buildings and infrastructure, machinery and stock. A high level of capitalisation creates a degree of resilience in the industry, allowing it to accommodate market and production shocks which would otherwise be significantly debilitating. While individual businesses may have seen an erosion of their balance sheets as a result of low prices or floods and drought, the industry as a whole has remained remarkably resilient.

### 1.4 APPROACH

The objectives of this study were to deliver an assessment of the structural change, investment, key policy decisions and culture shifts necessary for UK agriculture to be sustainably competitive in a decade's time.

The work required exploration of developments in three key themes:

- *Farm level structure and investment*
- *The agri-food chain (everything from farmgate to consumer)*
- *The macro or global view.*

An extensive literature review has provided context to today's position and provided clear indication of the immediate direction of travel within the three themes – for example, the recent agreement on the Common Agricultural Policy and the introduction of a Basic Payment Scheme with a "Greening" element will have an influence for the next few years. In an effort to extend the direction of travel to a time horizon of a decade, the second element sought to gather the views of industry – both primary producers and professionals and experts in related fields.

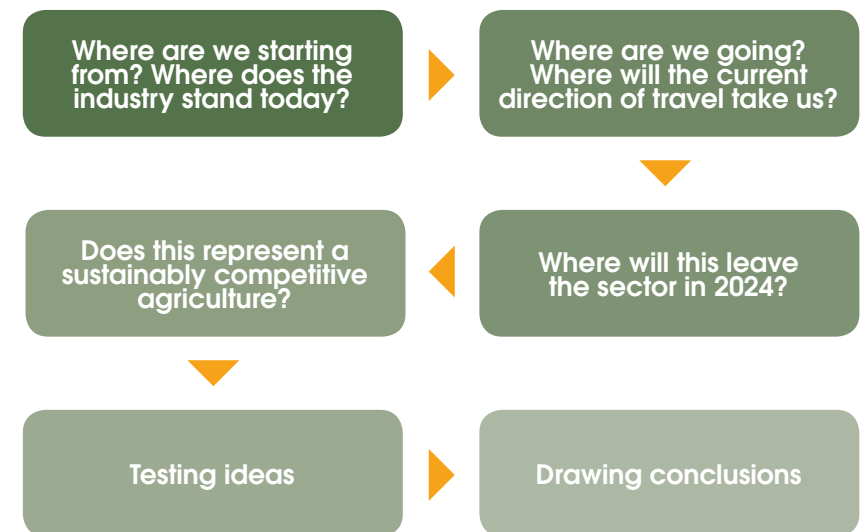
We interviewed over 100 farmers – owner-occupiers, tenants, professional managers and contractors - and close to 50 industry professionals such as lawyers, grain traders, food processors and consultants. These were interrogative conversations based around a loose interview structure, to ensure that discussions addressed all three themes while capturing as many ideas as possible, which would not have been possible with a more quantitative, *do-you-agree-with-this-statement* questionnaire.

The characteristics of this research are emphatically qualitative. We have assessed the confluence of the ideas which emerged in these discussions and their frequency in order to move to the third methodological element. The outcomes of these discussions led to a series of hypotheses. For instance, the conversations revealed an emphatic view that by 2024 there would be fewer owner-occupiers in agriculture and more contract- and share-farming. This has informed the hypothesis that by 2024 there will be a divergence between those owning land and those farming (operating) it. Therefore there will be considerable opportunities for farmers as operators.

Having established hypotheses within each theme, we tested the validity of these ideas before a panel of expert witnesses. These are individuals drawn from senior and influential positions in academia, government, trade and investment, consultancy, scientific research and other professions.

We asked that these individuals critique the hypotheses and comment, drawing on their own experience or their own fields.

The approach of this research can be summarised as follows:



CHAPTER 2

# STARTING POINTS – THE POSITION TODAY AND DIRECTION OF TRAVEL

## 2.1 FARM LEVEL – ENTERPRISE, BUSINESS STRUCTURE AND INVESTMENT

### Operating structure – land, labour and capital

British agriculture has relatively few operating structures in which the requisite land, capital and operational expertise come together.

Owner-occupation ought to present the perfect alignment, as all three elements come together in one farming business. A market return on capital deployed is not necessary, as the original capital was deployed so long ago, possibly many generations, that an adequate cash flow is all that is needed, and, of course, the ability to pass it on to the next generation. Subsidy, of course, plays a role in this “return complacency”, hiding modest performance on farm.

Tenant farmers came strongly to the fore in the midst of war, when, in an attempt to improve output during World War I, they were given rights and incentives which gave them opportunity to acquire the land they farmed. Coupled with this, very few sons of landowners returned from the battlefields of Flanders. Tenants continued to benefit from legislative support until the creation in 1995 of Farm Business Tenancies (the Agricultural Tenancies Act), which allowed a degree of contractual freedom between the parties. The transfer of ‘value’ is clearly explicit in the discount payable for land still subject to Agricultural Holdings Act tenancies.

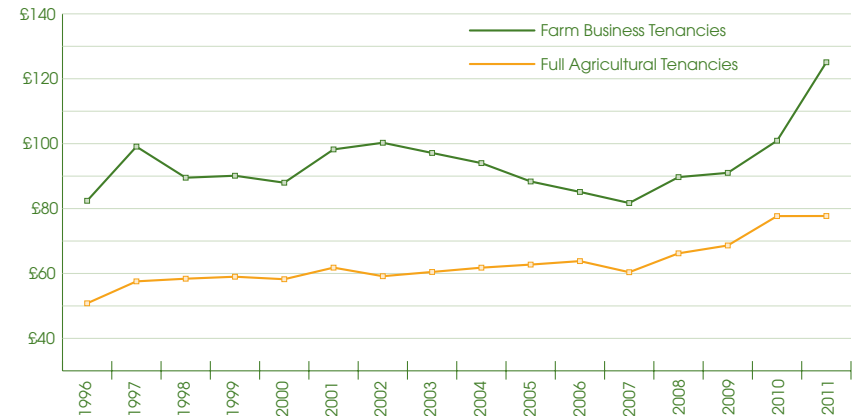
There has been a gradual decline in the proportion of tenants to owner-occupiers or those farming on some other form of arrangement. Statistics vary, but the tenanted sector accounts for about 34% of the total agricultural land area in England and Wales.<sup>5</sup>

For few landlords or tenants is there true alignment of interest, or any incentive to maximise the effective use of the land and other resources or capital. Too often tenants will argue at arbitration that the farm, which they have farmed for decades, is uniquely disadvantaged, arguing for a modest rent, and ignoring the shared interests with the landlord. Effectively a tenant wishes to pay as little rent as he can and keep maximum value to himself and the landlord wishes the tenant to pay the rent on time and not deplete the valuable long-term asset.

“The exposure” of both owner-occupier and tenant position has become clear in the open-market feeding frenzy that is the FBT tender process. Marginal costing, magnified by the failure to demand an adequate return on capital already deployed, becomes profit dilution when tender rents appear to run out of control.

At the same time the new farm business tenant has merely secured a short-term occupancy of the land. He has no incentive to nurture the farm for the long term. Interests are frequently unaligned.

Fig 1  
Agricultural Rents 1996-2011 (£/acre)



### Share farming

Share farming, a system of sharing the input of land, working capital and labour on a basis of shared risk and reward is almost unknown in the UK, but it is widely used elsewhere. Since the ending of subsidy in New Zealand, and with the rapid growth there of the dairy sector, a wide range of share farming structures have developed, from the most basic share milking (enhanced reward for labour from the best management of assets) through a number of shared ownerships of cattle, youngstock, and fixed equipment, to the land itself. Through all these structures and relationships the key incentive and reward is driven by alignment of interests for operator and provider of land and capital together: the bigger the pie, the bigger slice for each to share.



### Contract farming

While share farming is not unknown in the UK, a far more common vehicle for alignment of interests is through a properly constructed and managed farm management agreement, otherwise known as contract farming agreements. Originating with Bidwells at a time of significant legislative support for tenants, which undermined capital values, contract farming permits an alternative relationship between land owner and operator. Both contribute elements of working capital and the agreement is able to create a genuine alignment of interest where both parties benefit from the long-term operational excellence of a really able operator.

Contract-farming agreements do not always achieve this: they may be constructed purely as a means of paying a rent by proxy; or the choice of operator may not have been rigorous; or the operator may treat the “profit share” merely as a rental equivalent, failing to take every opportunity to maximise return for both parties. Agents are as guilty as any in drafting poor agreements, failing to grasp the objectives or even the opportunity, merely treating them as a necessary construct between land, capital and operator.

The structures facing farmers in the UK: owner-occupation, farm business tenancy or farm management agreement are then wrapped up and reaffirmed in tax legislation, rendering true flexibility a still greater challenge.

### Capital

Added to this modest range of structures is the traditional source of working capital for British farming, the banking sector. Banks are very supportive of the industry, particularly if they are able to secure lending to the risky proposition (farming) against a very low risk long term asset for which there is considerable certainty of value (land). Such lending tends to be inflexible, and while not often put under pressure, (direct government support often prevents this), is poorly equipped to address high levels of commodity price or output volatility.

Lending to the sector has seen recent rapid increase, not to fund investment in capacity, but merely to fund increased working capital to allow the wheels to keep turning.

Fig 2  
Bank Lending to Agriculture 1997-2013 (£bn)

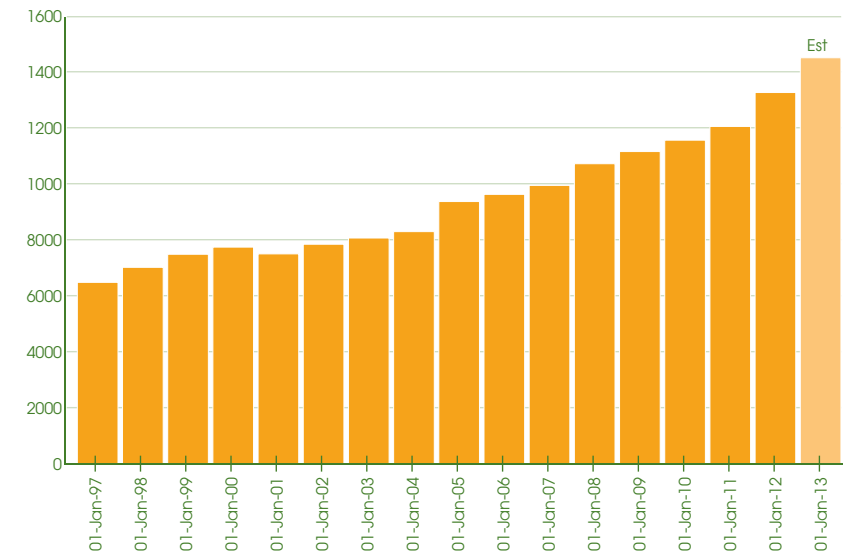


Fig 3  
Lending to SMEs 2011-2013



### Alternative structures

Opportunities for alignment of interests beyond contract-farming arrangements are thin on the ground. Genuine shared equity, either as working capital or across the whole business is rare. This is in part structural and habitual – the existing structures appear perfectly adequate. It is also the unique nature of farms, where landowners have strong emotional, family or other attachment to a farm or a piece of land. Why should a landowner give up a share in the wider equity of the business to an operator, who may then benefit, not just from farming performance gains, but also from an apparently unrelated “market” increase in land values?

### Sector by sector analysis

#### Overview\*

A more comprehensive description of each sector is available in the online version of this report.

| System            | Land use (%) | Holdings (%) | FBI     | Average holding size | Livestock numbers/ crop areas                   | Contribution to agricultural output | Notes   |
|-------------------|--------------|--------------|---------|----------------------|---|-------------------------------------|---|
| Upland livestock  | 13           | 12           | £29,213 | 135ha                | 80-90 cattle<br>350 ewes<br>70% permanent grass |                                     | Unprofitable without SPS, exception 2011/12   |
| Lowland livestock | 1            | 31           | £32,167 | 101ha                | 100 cattle<br>165 ewes<br>70% permanent grass   | Cattle 11.6%<br>Sheep 4.3%          | Unprofitable without SPS, exception 2011/12<br>Order of profitability: finishing beef, sheep breeding, stores, sucklers |
| Dairy             | 11           | 7            | £86,750 | 140ha                | 150 cattle                                      | Milk 15.8%                          | Reliance on farmer and spouse labour, masks cost<br>Economies of scale important  |
| Pig               | 1            | 2            | £37,980 |                      | 100 cattle<br>165 ewes<br>70% permanent grass   | Pigs 4.8%                           | FBI fluctuates reflecting fluctuations in pig prices<br>Economies of scale important                                    |

| System           | Land use (%) | Holdings (%) | FBI                              | Average holding size | Livestock numbers/ crop areas   | Contribution to agricultural output                            | Notes   |
|------------------|--------------|--------------|----------------------------------|----------------------|---|--|---|
| Poultry          | 1            | 2            | Broiler £76,509<br>Laying £5,673 |                      | 52,092 birds  | Poultry 8.7%<br>Eggs 2.8%                                      | Broilers more profitable than layers.<br>Layers FBI decline with introduction of enriched cages<br>Broilers: 1,681 holdings, of which 400 in excess of 100,000 birds produce 69% of production<br>Eggs: 32,500 holdings, 48.6% in enriched cages, 45.2% free range, the latter increased following the cage ban |
| Cereals          | 29           | 32           | £499/ha                          | 200ha                | Wheat 44%<br>Barley 22%<br>OSR 17%  | Cereals 13%<br>OSR 4.1%  | In some years unprofitable without SPS<br>An increase in oilseed rape area and its price has contributed to an improved FBI   |
| General cropping | 16           |              | £414/ha                          | 245ha                | Includes potatoes, sugar beet, peas and beans, oats and maize each at 3%  | Potatoes 2.4%<br>Beet 0.9%                                     | FBI is heavily influenced by potato and sugar beet prices   |
| Horticulture     | 2            | 4            | £55,287                          |                      | Outdoor vegetables (72%)<br>Orchard fruit (14%)<br>Outdoor flowers (7%)<br>Soft fruit (5.5%)<br>Glasshouse (1.5%) | Overall 12.0%<br>Vegetables 5.3%<br>Flowers 4.4%<br>Fruit 2.3% | Vegetables grown outdoors occupy the largest land area<br>Soft fruit output has grown significantly<br>Hardy nursery stock represents a significant sector  |

Note: Farm Business Income (FBI) explained

Farm Business Income as a term used in DEFRA’s Farm Business Survey represents the financial return to all unpaid labour (farmers, their spouses, non-principal partners, directors and their spouses and family workers) and on all their capital invested in the farm business. It is calculated as the total farm gross margin less the sum of fixed costs incurred before any charges for unpaid labour or notional rent on owner-occupied land.

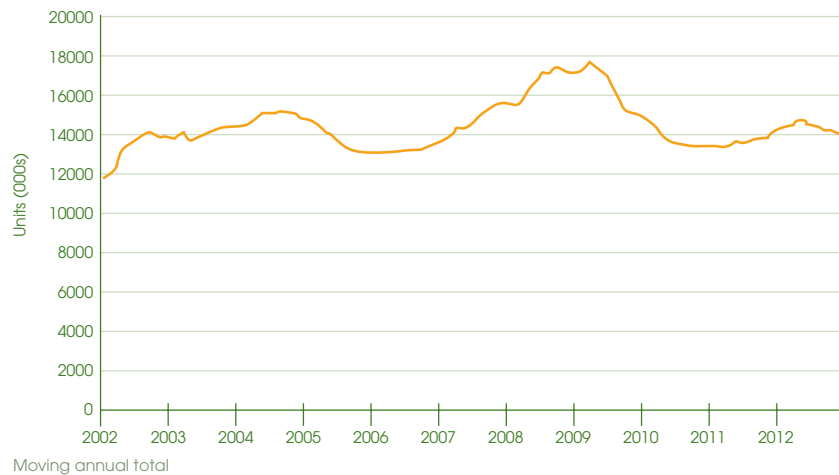
### Investment

Pressure on farm incomes has restricted investment in core infrastructure in recent years, with most businesses focussing on meeting costs and servicing debts. However, stronger values for some agricultural commodities since 2008 has generated some increased profits, and suppliers of equipment and infrastructure reported significant interest from farm businesses in 2009-10.

Figures for new tractor registrations support this, with purchases peaking in 2009-10 before returning closer to the 10-year average.

However, as the Bank of England lending figures (Figure 2) demonstrate, farms have continued to borrow, sourcing capital through debt. It is likely that this has been caused by increasing pressure on farm overdrafts through increased in input costs, as the cost of going farming continues to rise year on year. Crucially, this suggests farming businesses are sourcing capital through debt, but only to extend working capital flexibility, rather than investing in core infrastructure, technology or other assets.

Fig 4  
New Tractor Registrations 2002-2012



There is further evidence that appetite for investment is waning. DEFRA's 2012 Farmer Intentions Survey found that the proportion of farms intending to make a major investment in their business in the coming 12 months was 22%, compared to 43% making major investments in the previous 12 months.

Fig 5  
Farmer Investment Intentions 2012

| Investment type  | Last 12 months (outcome) |        | Next 12 months (intention) |        | Next 12-36 months (intention) |        |
|------------------|--------------------------|--------|----------------------------|--------|-------------------------------|--------|
|                  | % of farms               | 95% CI | % of farms                 | 95% CI | % of farms                    | 95% CI |
| No Investment    | 57%                      | ±5%    | 78%                        | ±4%    | 77%                           | ±4%    |
| Machinery        | 20%                      | ±4%    | 8%                         | ±3%    | 10%                           | ±3%    |
| Buildings        | 13%                      | ±3%    | 9%                         | ±3%    | 8%                            | ±3%    |
| Plant            | 5%                       | ±2%    | 3%                         | ±2%    | 1%                            | ±1%    |
| Land             | 2%                       | ±2%    | 2%                         | ±1%    | 3%                            | ±2%    |
| Other Investment | 9%                       | ±3%    | 4%                         | ±2%    | 3%                            | ±2%    |

Column percentages may sum to more than 100% because farms could select multiple options

### Farm infrastructure

The rising costs of investment in grain storage have presented serious difficulties for arable farmers. Increased combine output has also put pressure on antiquated drying and handling systems. A 2006 survey conducted by English Farming and Food Partnerships (EFFP) found up to a third of on-farm grain storage in England was more than 30 years old, and a further 45% between 15 and 30 years old. In Scotland, some 35% of farm stores are estimated to be over 30 years old and a further 64% more than 15 years old, according to a 2011 survey by the Scottish Agricultural Organisation Society.

### Removal of tax reliefs

In 2007, then-Chancellor Gordon Brown surprised many by announcing in his March budget the phasing out of Agricultural Buildings Allowances. These hugely valued reliefs, which allowed investments in agricultural buildings to be offset against income for 25 years, were phased out over three years and scrapped in 2011. This cost farmers tens of thousands of pounds in unused allowances and made replacement grain storage

look ever-more expensive, as well as having serious consequences for farm businesses which had invested in buildings or grain storage with the expectation of 25 years to manage the cost. Subsequent calls for their reinstatement have been unsuccessful.

Some tax relief remains on plant and machinery. In 2013 the government raised the threshold for Annual Investment Allowance from £25,000 to £250,000. However, there were transitional issues on how the increased threshold will apply.

### Central storage

A growing trend in recent years to mitigate the high cost of investment in on-farm stores has been the growth in the network of farmer-owned central grain stores.

According to Openfield Network, about 2,000 growers now commit all or some of their grain to central stores, and regional stores like Wiltshire Grain and Weald Granary have expanded their storage in recent years. Camgrain, one of the best known central stores at Cambridge, has developed another 300,000 tonnes of storage on a new site. There is evidence that the critical mass of the largest central storage and marketing businesses allows them to leverage additional commercial opportunities for members' grain, with Camgrain agreeing a deal with Sainsbury's to supply wheat to the retailer's in-store bakery network in 2008.

### Dairy

Dairy farm businesses have faced significant barriers to investment in recent years as pressure on milk prices, rising production costs and poor weather have left little surplus cash for reinvestment in the business. The cost of replacement heifers has risen considerably in recent years, compounded by the effects of bovine TB, and the high cost of capital items like milking parlours, plant and equipment have made investment in infrastructure more difficult.

Reflecting this, DairyCo's 2013 Farmer Intentions Survey<sup>7</sup> showed an overall drop in confidence, with the number of milk producers who intended to invest more than £150,000 over the next five years falling from 14% in 2012 to 9% in 2013. More than a third of farmers surveyed told DairyCo they were uncertain about investment decisions, compared to 13% the previous year. The number of dairy farmers in Great Britain intending to increase production in the next two years was down from 36% to 32%.



### Developing technologies

Recent years have seen a rapid increase in the adoption of renewable energy enterprises on farms.

Wind turbines have enjoyed considerable growth, particularly in Scotland, where they have been remote enough to escape fierce public opposition seen in some areas.

There are around 100 operating anaerobic digestion plants in the UK, with many more expected to come on stream in the next few years.

Biomass as a source of power and heat continues to develop, particularly in farming or landed-estate situations where there are many properties to supply.

Two government support schemes – the Feed-In Tariffs (FIT) and the Renewable Heat Incentive (RHI) – have been powerful catalysts for the spread of these technologies and have offered a consistent income to farmers grappling with extreme volatility in other output prices.

Receiving most attention in recent months has been the growth in “solar farms” – large-scale ground development of solar photo-voltaic panels – perhaps as a result of the generous level of FIT this particular technology attracted.

A 2012 survey by the National Farmers Union and NatWest Bank found that nearly a third of farmers were generating renewable energy for their own use or supplying others.

The lifetime of FIT and RHI support, in excess of 20 years, suggests the rapid uptake of these technologies on farms will continue. However, it is important to note that in many cases it is not farm businesses themselves that have invested in the technology and generate a return. In many cases, farmers and landowners have been approached to lease land for renewable energy enterprises to third parties, and, while few hard statistics are available, the attraction of a known rental income on a smaller area of marginal land will have motivated many to commit to this form of engagement in green energy generation, instead of undertaking investment themselves.

## Summary

- *Owner-occupiers (whether sole traders, partnerships or limited companies) constitute the majority of farming businesses in 2014. The tenanted sector, once the majority, now accounts for 34% or less. Upward pressure on Farm Business Tenancy rents is growing and tenancies are offered on relatively short terms. Contract-farming agreements have grown in popularity but no hard industry data is available on the area they occupy. Share farming is rare and almost exclusively in the dairy and livestock sectors. There are problems within traditional models of aligning interests in structures outside the owner-occupying majority.*
- *Recent years have seen consistent trading losses from animal production, particularly in suckler herds and breeding sheep enterprises, although this has shown some improvement more recently. The Single Payment continues to underpin profitability, and prevent business failure.*
- *Dairy farmers continue to exit the sector at an alarming rate. There were fewer than 10,500 milk producers in England and Wales at September 2013, 2% down on the previous year. Confidence among producers is falling and investment decisions are being postponed indefinitely.*
- *Arable farm incomes have been subject to considerable volatility, following global agricultural commodity values. However, individual gross margins for most combinable crops have improved in recent years. Many arable businesses have achieved profitability without the Single Payment in recent years.*
- *Farm business investment has improved where incomes have allowed, but investment in farm buildings, plant and infrastructure have been hampered by the significant capital costs, compounded by the removal of important tax reliefs.*
- *Investment in renewable energy enterprises, supported by FIT and RHI subsidies, is growing. However, many more farm businesses are thought to be leasing land for green energy to third parties, and accepting a rent, than investing in the technology directly.*

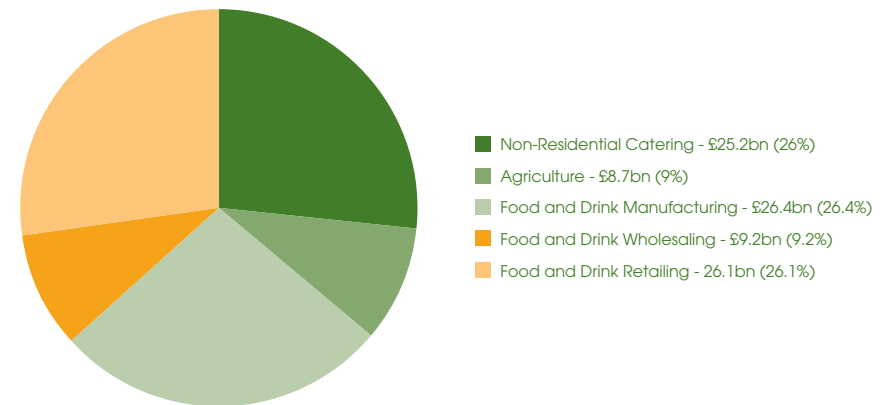
## 2.2 THE AGRI-FOOD SECTOR: FROM FARM-GATE TO CONSUMER

The agri-food sector can be described as encompassing every element of the chain from production to consumer – essentially, all producers, processors or service providers who deliver food and drink products to consumers.

This is distinct from the food chain, which is most often understood to specifically exclude agriculture and fishing.

In 2012 the UK agri-food sector contributed around £95bn to the national economy, about 7% of national Gross Value Added\*, according to DEFRA and the Office for National Statistics. It employs some 3.7 million people, with the biggest growth in the non-residential catering sector and food retailing.

Fig 6  
Contribution of the Agri-Food Sector to the National Economy



Processing, wholesaling and retailing account for the majority of the sector with agriculture (primary production) making up less than 10%.

Since 2010 the UK agri-food sector has grown at 0.7%, a faster rate of growth than the wider economy. In 2012, consumers spent £168 billion in the UK food supply chain as a whole, adjusted for imports. Employment in the agri-food sector stands at its highest level since 1998.

\*Gross Value Added is the difference between output and intermediate consumption for a given industry or sector. This is the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production.

### Food prices

At the heart of the sector are consumers. While the average household spends far less on food than even a generation ago, rising food prices as a proportion of income put pressure on households with the lowest incomes and therefore governments scrutinize food prices carefully.

Cheap food has become an expectation of life in the UK, a far cry from the picture of wartime food rationing which continued, for some food categories, into the 1950s. Since the spike in global agricultural commodities prices in 2007-2008, food prices generally have risen. In the five years to 2012, food prices rose 12% in real terms, taking the UK back to the position in 1997 in terms of cost of food relative to other goods.<sup>8</sup>

Since 2007, food prices in the UK rose faster than in the wider EU – a 32% rise over five years compared to just 13% in France and Germany during the same period.

The relative affordability of food can be measured by the share of the household budget that goes on food. DEFRA figures show that food is exerting greater pressure on household budgets since 2007 when food prices started to rise in real terms. Averaged over all household income groups, 11.3% of spending went on food in 2011, a rise of nearly 1% on a year earlier. Households with lower incomes spent nearly 17% on food in 2011, 1.4 % above 2007.

There is some evidence that food price inflation is beginning to ease. Latest forecasts from EFP, which developed a model for estimating food price inflation, show upward pressure easing on food prices generally throughout 2013.



Fig 7  
Farming's Share in the Value of Food

|                          |  | Farmgate share in 1988 % | Farmgate share in 2000 % | Farmgate share in 2012 % | % change in share 1988/2012 | Weight in 2012 basket |
|--------------------------|--|--------------------------|--------------------------|--------------------------|-----------------------------|-----------------------|
| Farmers' share of basket |  | 47                       | 35                       | 39                       | -16                         |                       |
| Farm gate product        | Retail product   |                          |                          |                          |                             |                       |
| Apples                   | Dessert apples (per kg)                                | 55                       | 40                       | 44                       | -20                         | 5                     |
| Beef                     | Untrimmed beef (b) (per kg)                            | 67                       | 44                       | 54                       | -20                         | 193                   |
| Carrots                  | carrots (per kg)                                       | 30                       | 38                       | 47                       | 54                          | 11                    |
| Cabbages                 | Cabbage, hearts (per kg)                               | 38                       | 39                       | 30                       | -21                         | 5                     |
| Chicken                  | Oven ready roasting chicken, fresh or chilled (per kg) | 47                       | 37                       | 39                       | -18                         | 133                   |
| Eggs                     | Free range eggs per dozen (c)                          | 28                       | 29                       | 31                       | 10                          | 57                    |
| Lamb                     | Untrimmed lamb (b) (per kg)                            | 65                       | 43                       | 53                       | -18                         | 76                    |
| Onions                   | Onions (per kg)  | 25                       | 19                       | 23                       | -9                          | 5                     |
| Pork                     | Untrimmed pork (b) (per kg)                            | 57                       | 47                       | 40                       | -29                         | 95                    |
| Potatoes                 | Old loose white potatoes (per kg)                      | 24                       | 27                       | 22                       | -5                          | 48                    |
| Tomatoes                 | Tomatoes (per kg)                                      | 48                       | 41                       | 42                       | -12                         | 8                     |
| Wheat                    | White loaf sliced (800g)                               | 16                       | 10                       | 11                       | -33                         | 46                    |
| Milk                     | Whole milk (d)   | 38                       | 28                       | 35                       | -8                          | 318                   |

(a) Farm gate prices from Defra, retail prices from the Office for National Statistics and the Agriculture & Horticulture Development Board (AHDB)

(b) Retail prices for beef, lamb and pork are untrimmed AHDB prices adjust for drip loss.

(c) Farmgate share in 1988 is based on non-free range size 2 eggs, there was also a break in the series in 2012 due to changes in methodology, therefore the comparison with 2012 is indicative only.

(d) The average price of one pint delivered milk and one pint of shop milk (the shop milk based on a two pint purchase)

DEFRA figures show that in 2012 the farmgate share of the value of a basket of staple food items was 30%, similar to the previous year. After a sharp fall from a peak in the mid-1990s, the farmgate share in the value of food has generally been level, trending upwards in recent years.

### Food security and food competitiveness

The concept of food security is one that will increasingly influence the perceived role and opportunities for farming in the coming decade. There is no doubt that this will be true on a global level – it is anticipated that population growth even in the next 10 years will put pressure on sensitive food systems and supply chains – but the UK as a wealthy, developed nation is unlikely to see true food insecurity bite. Opportunities for agriculture may come where true food security issues elsewhere in the world lead to developments in trade and new homes and competition for exported commodities. It is important therefore to clarify the UK’s food security position.

DEFRA generally distinguishes between food security and food competitiveness. The Food Production to Supply Ratio – often referred to as the Self-Sufficiency Ratio – is calculated as the farmgate value of raw food production divided by the value of raw food for human consumption.

This figure – 62% for all food in 2012 and 76% for “indigenous-type food” - changed only fractionally on the year. However, it is generally agreed that this is only a very broad indicator of the ability of UK agriculture to meet consumer demand – also described as “food competitiveness”. DEFRA argues that this does not constitute a good indicator of food security, since this is a more complex issue. For instance, it does not reflect the idea that diversity of food sourcing increases security, since the UK mainly draws food supplies from stable countries within the EU, which has a Food Production to Supply Ratio of about 90%. Also, a high Food Production to Supply Ratio, while hinting at self-sufficiency and therefore food security, fails to insulate a country against disruptions to its own supply chains.

In 2011, 25 countries together accounted for 90% of UK food supply. Just over half of this (51.8%) was supplied domestically from within the UK.

### Food manufacturing

This is a highly important sector and one which has long been identified as offering great potential for farmers to supply. Gross Value Added in the food manufacturing sector increased 4.7% in 2011, the largest gain in productivity in more than a decade. Employment was on a long-term downward trend, reaching its nadir in 2010, which coincided with a dramatic increase in the value of agricultural soft commodities and food prices generally.

Higher food prices appear to have benefitted the food manufacturing industry and, combined with productivity growth in 2010 and 2011, led to increases in employment. Government figures for the third quarter of 2012 show an increase of around 3% since 2010.

### Food wholesaling

The food wholesaling sector has seen consistent growth in Gross Value Added since 2000. At £9.2 billion GVA in 2011, it is 65% higher than in 2000. Excluding agriculture, it is the smallest contributor to the agri-food sector, with Gross Value Added at 9%. Despite the sustained upward trend in GVA, employment in this sector slipped by nearly 1% in 2012. Productivity has been on an upward trend since 2000 and increased 1.2% in 2011, DEFRA figures show. It is now slightly more than 8% higher than at the start of the last decade with an average annual increase of 0.7%.

### Food retailing

Gross Value Added from food retailing was £26.1 billion in 2011, little changed at 0.4% up on 2010. Employment in this sector stands at the highest level in a decade.

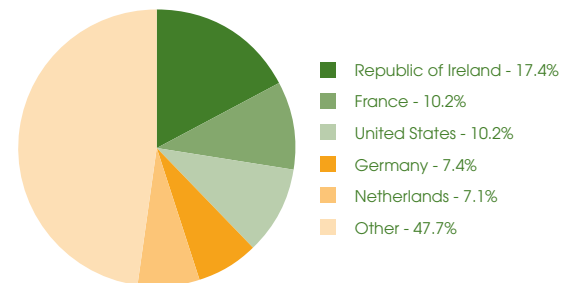
### Non-residential catering

Non-residential catering, sometimes referred to as the food service sector, has seen Gross Value Added on a long-term upward trend. In 2011, GVA increased 15% to £25.1 billion, reversing a fall in 2009. Employment increased in 2012 with an additional 110 thousand employees, 20% more than in 2000. Productivity of catering rose by 3% for the second year running in 2011.

### Overseas trade

The total value of food and drink exports fell slightly in 2012 to £18.2 billion but is still £5.6 billion more than in 2005 measured in 2012 prices.

Fig 8  
UK Principal Destinations - Food, Feed and Drink Exports



In 2012, the total value of food, feed and drink exports was 37% higher in real terms than about a decade earlier, caused by a combination of currency exchange rates, animal-disease related issues, and global commodity prices.

UK government figures show the value of imports was 34% greater in real terms in 2012 than in 2003. As a consequence, the trade gap in food, feed and drink has widened by 31% in real terms between 2003 and 2012 to £19.4 billion.

### Retailers

The retail grocery sector in the UK has consolidated in recent years around the so-called "Big Four" supermarket retailers – Tesco, Sainsbury's, Asda and Morrisons – with high-quality offerings like Waitrose and discount retailers like Aldi and Lidl following close behind.

Much maligned by farmers for the power they wield in the supply chain, retailers remain UK Agriculture PLC's biggest customer and recent years have seen the development of new relationship models between farmers and the biggest retailers including direct supply contracts.

Fig 9  
Major Retailers' % Market Share

|        | % market share |      |             |           |          |      |      |
|--------|----------------|------|-------------|-----------|----------|------|------|
|        | Tesco          | Asda | Sainsbury's | Morrisons | Waitrose | Aldi | Lidl |
| Aug-13 | 30.2           | 17.1 | 16.5        | 11.3      | 4.8      | 3.7  | 3.1  |
| Apr-11 | 30.9           | 17   | 16.6        | 12.1      | 4.3      | 2.2  | 2.6  |

When considered as a whole the grocery market in the United Kingdom is steadily growing in size, about 4% bigger in 2012 than a year earlier.

Growth in the premium grocery market, served by retailers like Waitrose, has slowed but remains healthier than the overall market (the sector saw growth at 7.5% last year compared with 4.8% this year).

At Tesco, growth in economy label products which includes 'Everyday Value' was up 13%, but analysts claim this growth is at the expense of premium label products.

In Asda's April 2013 income report it pegged March 2013 weekly discretionary income at £152, down from £153 in March 2012, and £159 in March 2011. This should not be surprising given the pressure on household budgets during a recession, but is likely to give retailers pause to consider their emphasis on offering value.

The horsemeat scandal of 2012/2013 had a significant impact on a number of the industry's big names including Tesco and Asda, both of which saw sales of products like frozen beef burgers and corned beef fall sharply.

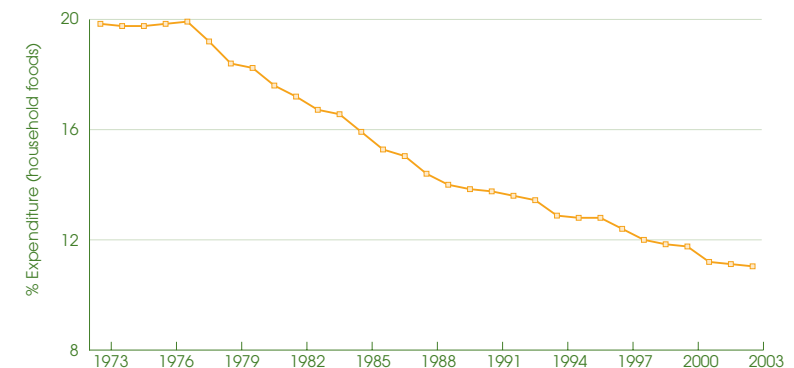
Tesco, the world's 3rd largest grocer by sales, is still the most popular place to buy food in Britain, however its competitors are slowly eroding away Tesco's market share. In early 2012, Tesco held less than 30% (29.7%) of the UK market for the first time since 2005, according to trade media.

### Retailer power

The last decade has seen growing criticism of retailer power and its effect on food producers, particularly as the number of UK retailers has consolidated around the "big four" and their immediate challengers. The widely accepted view within farming has been that retailers hold most, if not all, of the power within the supply chain and that primary producers are forced to be "price takers".

Retailers and their representatives have historically countered with the point that they exist to serve consumers (and indeed that their survival and success depends on how well they do this) and that consumers' unanimous demand in recent decades has been for cheap food. It is an often-quoted statistic that the proportion of household income spent on food has fallen from approximately one-third in the decades immediately after the Second World War to a little over one-tenth today (ONS).

Fig 10  
Household Expenditure on Food





This seems to vary in degree from sector to sector. Evidence in the dairy sector of downward pressure on farmgate prices, caused by retailers discounting fresh milk products, has been growing. A DairyCo report in 2011 identified cases of price asymmetry in dairy supply chains, and concluded that farmers were price-takers who were unable to influence relevant wholesale prices, and suggested that policy-makers wishing to address this should consider ways of increasing farmers' bargaining power.

In other sectors, such as potatoes and other fresh vegetables, where the direct influence of retailers on farm policy is often more visible, farmers have long asserted that they are forced to accept available prices and either produce at a loss or become more efficient at production. This has led to consolidation in grower numbers and production becoming concentrated among a smaller number of technically-excellent, high-performing specialist producers.

### Retailer engagement

A significant feature of the relationship between retailers and primary producers in recent years has been the growth in demand for food with local provenance.

IGD research in 2005 found that 70% of British consumers wanted to buy local food and nearly 50% said they wanted to increase the amount they bought. It can be said that the agri-food sector in general has done a lot to respond to that demand. Major retailers have also dramatically increased their activity in this area, often identifying individual farmers or growers in-store as a method of provenance. This emphasis on locally-produced food, coupled with high animal welfare standards and traceability in general has been a factor some retailers have attempted to use as a point of differentiation – notable examples include Waitrose's 2011 TV ad campaign. Discount retailers have responded equally quickly to this articulated consumer preference, emphasizing British and regional food provenance at the point of sale.

Shoppers' reasons for buying locally vary, according to the IGD report - with 57% purchasing local food because it was fresher and 54% wanting to support local producers and farmers - up from 29% in 2006.

### Middle ground retailers

While the mainstream UK grocery retail sector is dominated by the "big four" retailers – Tesco, Sainsbury's, Asda and Morrisons – recent years have seen considerable growth in "corner-shop" names such as Nisa, Londis and Budgens. Londis store numbers, for instance, have grown by around 300 to

over 2,000 in 2013. Londis and Budgens were acquired by Irish food retail group Musgrave Group in 2005.

### Food hubs, food halls and farm shops

The last decade has seen considerable growth in on-farm retailing through farm shops, farmers' markets in towns and cities, food hubs, which operate as wholesalers sourcing food products from diverse numbers of producers, and food halls, which provide venues for producers, processors and food-service operators to deal directly with the public.

By 2011, there were more than 4,000 farm shops in the UK, with a combined turnover of £1.5bn a year, according to the National Farmers Retail and Markets Association. Farmers' markets now number in excess of 500.

In many cases, EU Rural Development funds have contributed to the establishment of these ventures, which have enjoyed considerable popularity. However, there are signs that the rate of growth in direct farm retailing has slowed. Despite this, farm shops, farmers markets and food halls remain a significant part of particularly higher-value food retailing and offer a popular destination for consumers wishing to make food purchases from an alternative retailer which is perceived to be closer to the producer.

### The ongoing call for collaboration

One of the key recommendations of the Curry Commission into the future of farming and food, published more than a decade ago, was increased collaboration among farmers.

The report noted: "As well as collaboration up and down the supply chain, primary producers are going to have to collaborate more horizontally, to improve their marketing, pool resources, and make them better able to negotiate with the often much larger companies they sell to and buy from."

While there are some very significant farmer-owned or farmer-controlled businesses in the UK agri-food chain, the sector remains small by international standards.

EFFP found in 2005 that, in some EU countries, farmer-controlled businesses' turnover represented up to 200% of agricultural output, compared with less than 50% in Britain.<sup>9</sup>

This is generally agreed to be the outcome of decades of nationalised marketing boards in agriculture, removing the need for farmers to move into ownership of elements of the agri-food chain. The picture in France,

for instance, is quite different, with major farmer-controlled businesses like Agrial achieving turnover in excess of \$2.5bn.

Indeed, the UK’s farmer-controlled businesses have seen considerable consolidation in recent years. The collapse of Dairy Farmers of Britain in 2009 was the end of one of Britain’s biggest FCBs and one of the high-profile companies born of the deregulation of the dairy industry into cooperatives and private companies in 1994. Yet in a 2005 report published by EFFF, Dairy Farmers of Britain topped a league table of farmer-controlled businesses in England.

Other significant names from that table have also disappeared. Centaur Grain merged with Grainfarmers in 2008 to create Openfield, now one of the UK’s leading FCBs with a turnover in 2011-12 of £774m. Dairy cooperative First Milk has also grown turnover to more than £600m in recent years.

However, in 2011 the International Cooperative Alliance’s top 300 cooperatives showed that many of the biggest European cooperatives operated in agriculture supply or food and drink. Many were extensively vertically integrated businesses within the food chain.

**Fig 11**  
**Top 15 EU Agricultural / Food Production Cooperatives**

| Company               | Country     | Sector               | in \$ Billion |
|-----------------------|-------------|----------------------|---------------|
| Baywa Group           | Germany     | Supply               | 12.24         |
| Friesland Campina     | Netherlands | Dairy                | 13.16         |
| Aria Foods            | Denmark     | Dairy                | 9.25          |
| Metsaliitto           | Finland     | Forestry             | 8.96          |
| Danish Crown          | Denmark     | Meat                 | 8.78          |
| Agravis Raiffeisen AG | Germany     | Supply               | 8.09          |
| Suedzucker            | Germany     | Sugar                | 8.05          |
| Invivo                | France      | Supply               | 7.35          |
| DLG Group             | Denmark     | Supply               | 7.03          |
| Lantmannen            | Sweden      | Supply               | 5.44          |
| Terrena               | France      | Food and agriculture | 5.43          |
| Tereos                | France      | Sugar                | 5.31          |
| Sodiaal Union         | France      | Dairy                | 3.82          |
| Nordmilch             | Germany     | Dairy                | 3.51          |
| Glanbia               | Ireland     | Dairy                | 3.11          |

Based on 2012 turnover

Few UK agriculture or forestry businesses were recorded at all, with only First Milk and Milk Link (as it then was) appearing at all. The table (left) shows that some of the biggest players in the European agri-food sector are successful farmer-owned businesses, suggesting the UK remains significantly behind the curve.

**Fig 12**  
**Top 15 UK Agricultural Cooperatives / Farmer-Controlled Businesses by Turnover**

| Company                          | Sector                           | in \$ Million |
|----------------------------------|----------------------------------|---------------|
| First Milk                       | Dairy                            | 563           |
| Openfield Group                  | Grain and inputs                 | 481           |
| United Dairy Farmers             | Dairy                            | 400           |
| Mole Valley Farmers              | Agricultural Supply              | 281           |
| Fane Valley Cooperative          | Meat and milk processing, Supply | 280           |
| ANM Group Ltd                    | Food and Livestock Marketing     | 224           |
| Anglia Farmers Ltd               | Crop Marketing and Supply        | 166           |
| AtlasFram Group                  | Crop Marketing and Supply        | 139           |
| Countrywide Farmers              | Agricultural Supply              | 123           |
| Woldmarsh Producers              | Agricultural Supply              | 88            |
| Agricultural Central Trading Ltd | Agricultural Supply              | 85            |
| Cornwall Farmers Ltd             | Agricultural Supply              | 79            |
| United Farmers Ltd               | Agricultural Supply              | 69            |
| Ballyrashane                     | Dairy                            | 67            |
| United Oilseeds                  | Crop Marketing and Supply        | 66            |

Based on turnover on years ending 2010/2011

**Retailer ombudsman**

A significant development within the agri-food sector has been the recent establishment of a Groceries Code Adjudicator. This move followed years of debate and appeals from farmers’ representatives for a “retail ombudsman” which had legal power to address the perceived imbalance between multiple retailers and others in the agri-food sector.

It was not until 2009 that the Competition Commission announced a strengthened retailer Code of Practice which acknowledged the need for an independent “ombudsman”. For some time, leading supermarket retailers argued that such an ombudsman would be costly, bureaucratic and offered no clear benefit to consumers. Nevertheless, it was announced

in 2012 that the new Groceries Code Adjudicator would be established to ensure retailers treated suppliers lawfully and fairly, enforcing the Groceries Supply Code of Practice which came into force in 2010. The individual who would take up the role was named as Christine Tacon, former managing director of the Co-operative Farms. The Groceries Code Adjudicator will investigate complaints from suppliers, arbitrate disputes between retailers and suppliers and will have the power to impose fines on retailers in the most serious cases.

### Direct supply contracts

In the dairy sector, in particular, the last decade has seen the development of small groups of producers in a direct-supply relationship with major retailers, rather than supplying milk brokers or milk processors.

Pioneers of this approach were Waitrose and Marks & Spencer, which introduced their own direct-supply contract more than a decade ago. Producers received a premium price compared to mainstream milk production in return for meeting higher welfare and farm assurance standards. The Waitrose Select Farm dairy initiative was established in 1999 and grew to more than 65 farms, with milk collection and processing provided by Dairy Crest.

In the last decade the number of milk producers in England and Wales has fallen from around 17,000 to 10,495<sup>10</sup> in September 2013. It was this dramatic shrinking in producer numbers that led to much speculation that security of supply would become an important issue for retailers, particularly supply of a staple basket foodstuff like fresh liquid milk.

Sainsbury's launched its Dairy Development Group (SDDG) in 2007, with 324 members supplying the retailer through a number of processors. This followed the established model of paying producers a better-than-average price in return for a commitment to animal welfare and environmental sustainability standards.

Since its establishment, the SDDG has introduced a cost-of-production model which ensures its producers receive a milk price which is greater than the cost of production. It is reviewed quarterly to ensure key input costs like fuel, feed and fertilizer are up to date.

Tesco introduced a direct supply group in 2007, which attracted over 700 producers in the following years. Through milk processor Arla, these farmers supplied Tesco with all its own-brand fresh milk. The retailer's pricing model was based on a cost-tracker system, operated by an independent consultant, which provided a farm budget for the financial year based on real data drawn from the farmers in the group. A further premium was paid

to those farms which made available their business accounts for the system to use.

Inevitably, this deterred some farmers and the historical implication of the "cost-tracker" moniker led many to believe the retailer effectively set prices six monthly in arrears.

Nevertheless, farm businesses attracted to such direct-supply contracts with retailers generally seem to have benefitted, particularly in times of increased price volatility. The model begun in the dairy sector has since been expanded to other sectors.

Tesco also launched its Sustainable Farming Groups for beef and pig farmers in November 2012, offering producers a 36-month contract at above-market prices, in some cases a 40p/kg (deadweight) premium over average values. It was the first time a retailer has established direct-supply contracts with livestock farms in other sectors.

The beef and pork groups currently involve around 1,000 and 140 farmers respectively, and have been generally welcomed by farmers and their representatives.



## Summary

- *The UK Agri-Food Sector, which includes agriculture and commercial fishing, contributes around £95bn to the UK economy. Employment in the sector is at its highest since 1998.*
- *Food prices have risen in recent years after a sustained period of falling off, and risen faster in the UK than in the wider EU. Five years of growth to 2012 has returned food prices to the same position as in the late 1990s.*
- *Food spending as a percentage of household income has correspondingly risen in recent years, although it still accounts for a little over 10% of household spending on average.*
- *The farmgate share of value of a basket of food items is about 30%, and has been reasonably level in recent years.*
- *The UK is about 62% self-sufficient in food, according to the Food Production to Supply ratio. However, this should not necessarily be taken as a measure of food security.*
- *UK food and drink exports were worth £18.2bn in 2012, more than £5bn more than 2005 levels in real terms.*
- *The retail grocery sector has consolidated around the “big four” – Tesco, Sainsbury’s, Asda, and Morrisons. Tesco holds around 30% market share although this has come under pressure. Competitors at both premium and discount ends of the spectrum have grown market share in recent years.*
- *Retailers have not been slow to capitalise on the growing consumer demand for local food, which has also benefitted many producer-led food retailing businesses like farm shops, farmers’ markets and food halls. Local food remains a clear consumer preference, being maintained despite pressure on household budgets during recession.*
- *Innovative arrangements for producers to enter into direct supply contracts with retailers have grown, principally in the dairy sector where they began a decade ago, and more recently in the beef and sheep sectors. There is considerable debate whether this reflects retailers’ response to consumers’ desire for local food, or attempts to secure supply where future continuity of a high quality, fully traceable product is uncertain.*
- *Formal collaborative or cooperative ventures, much vaunted a decade ago as a key objective for UK farming, remain tiny in the UK compared to other countries.*

## 2.3 PROMISE, POLICY AND PERSPECTIVE: THE BIGGER PICTURE

### Direct support for agriculture

Perhaps the single most defining aspect of farm economic policy in 2014 is the continuation of direct support. For many UK farm businesses, receipt of the annual Single Payment can make the difference between a profit and a loss. Particular areas of UK agriculture are more sensitive than others; upland agriculture on mountains and moors is seen as particularly sensitive and active farming is understood to be a key component of the maintenance of that unique environment.

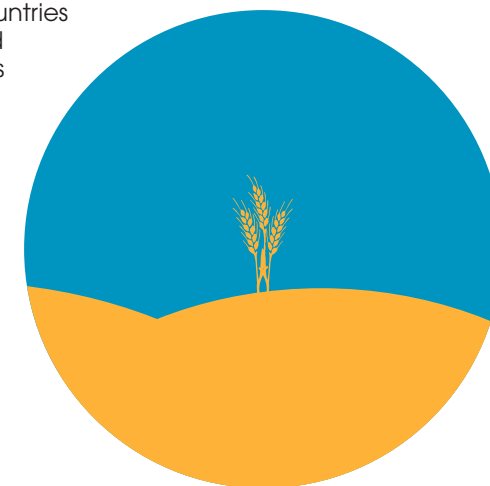
Recent reforms to the Common Agricultural Policy (CAP) agreed in 2012 place emphasis on EU member states moving to an area-based payment system.

When the CAP was introduced in the early 1960s, primary agriculture accounted for one-third of employment and 20% of GDP in the six founding members of the EU.<sup>11</sup>

The objective of the early CAP was to encourage better agricultural productivity so that consumers had a stable supply of affordable food, and that the EU had a viable agricultural sector. The EU became increasingly self-sufficient during the 1980s. But the combined effect of high and stable prices for farm outputs, and rapid technological change bringing real production costs down, caused agricultural production to dramatically outstrip consumption leading to surpluses.

Disposal of these surpluses on the domestic market or to other countries was sensitive, costly and caused distortion of some world markets for food.

A succession of reforms have significantly changed the CAP at the same time as the EU has expanded to 28 member states. The first major reform – known as the MacSharry reform – began the process of shifting farm support from price support for individual commodities to direct payments. Further changes took place in 1995 to accommodate the World Trade



Organisation Agreement on Agriculture. Among the most ambitious reforms, Agenda 2000 was designed to prepare the CAP for the 10 countries of Central and Eastern Europe joining the EU in 2004 and 2007.

These reforms continued the process of reducing support prices for individual crops with farmers receiving compensation in the form of higher, farm payments which were “coupled” to production.

The so-called Mid Term Review, implemented by then-EU Agriculture Commissioner Franz Fischler in 2005, introduced the major reform of “decoupling” support payments from crop or animal production.

Decoupling was a dramatic break with the past. All production-linked payments (for UK farmers, crop payments like Arable Area Aid, a complex series of livestock payments and set-aside payments) were amalgamated into a Single Farm Payment, to be received annually.

### Within the UK

Few EU member states moved quickly to a flat-rate payment, which would have had dramatic consequences for farm support and farm incomes. In the UK, Scotland, Wales and Northern Ireland adopted a 100% historic system where producers’ annual payments were based on the support payments received in nominated “reference years” – 2000, 2001 and 2002.

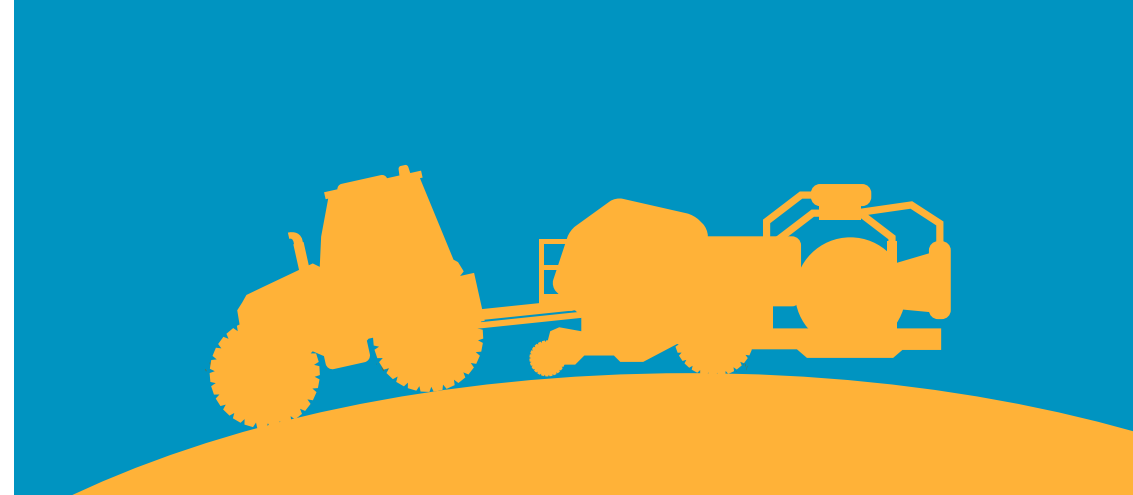
Controversially, a “hybrid” system was introduced in England under Environment Secretary Margaret Beckett which saw the value of farmers payments shift from a 100% historic basis to an area payment in 15% increments over the seven-year life of the scheme. Whilst complex and unwieldy to implement, this system has left England facing a potentially easier transition to the Basic Payment Scheme in 2015 than the other member nations of the United Kingdom.

### Recent reforms and direction of travel

At the end of June 2013, after a period of intensive negotiation between the European Parliament, the EU Commission and the Council, the three institutions reached an agreement on the next stage of the CAP reforms.

From 2015, a Basic Payment Scheme will be introduced to replace the Single Payment Scheme. The scheme will make payments to farmers based on their “entitlements” in much the same way as the existing structure. The new scheme also introduces a “greening” element where 30% of the national funds available under direct payments will be dedicated to the delivery of practices to benefit the environment.

To be eligible for the new entitlements the applicant must be an “active farmer” and have made a claim for payment in 2013 under the current scheme.



### The UK within Europe

Despite its relatively small land area, the UK is a significant presence in European agricultural productivity and one of the most efficient producers of key food crops.

### Wheat

France is the EU’s largest producer of wheat (common and Durum wheat) at over 38m tonnes in 2011, followed by Germany which produced some 22.7m tonnes.<sup>12</sup> In third place at around 15m tonnes is the UK. These three countries account for over half of EU-28 wheat production.

Fig 13  
EU Wheat Production 2011 (Top 15 Producing States)

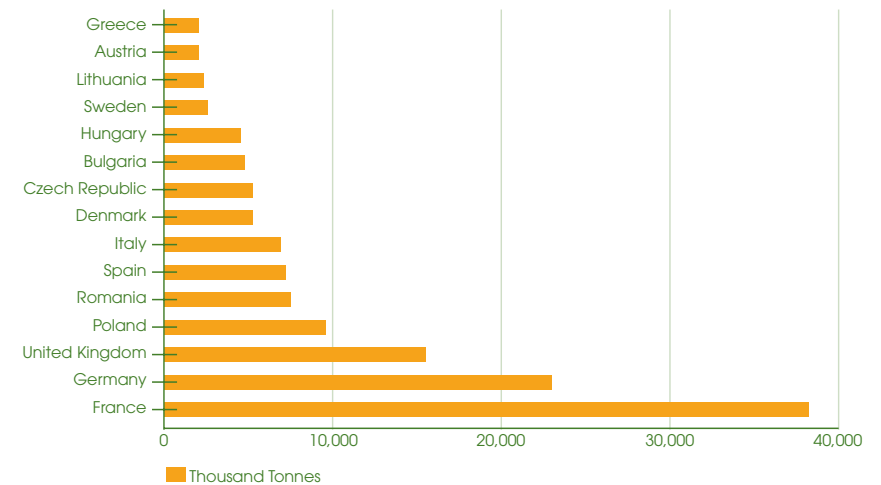


Fig 14  
EU Top 15 Cows' Milk Producers

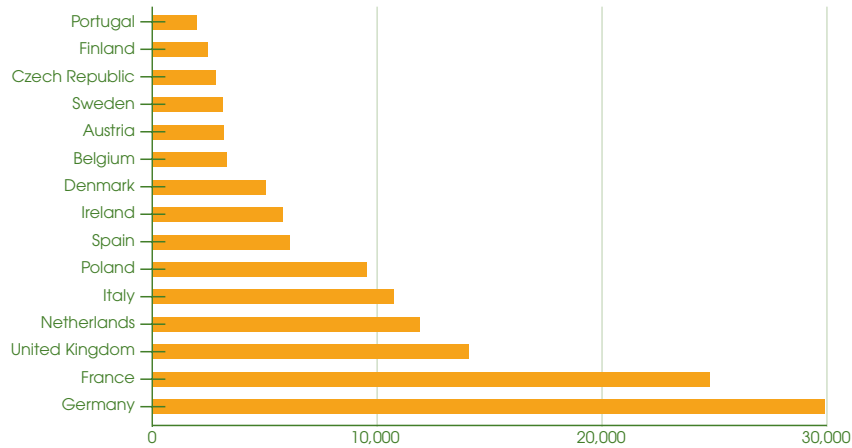


Fig 15  
EU Top 15 Beef and Veal Producers

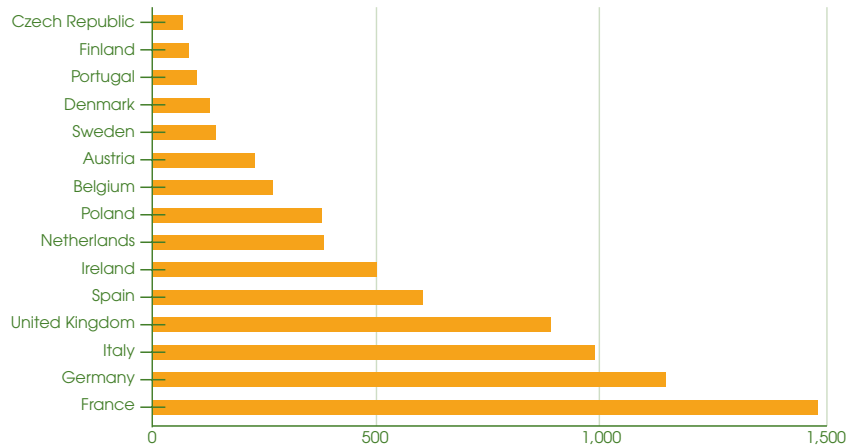


Fig 16  
EU Top 15 Sheep and Goat Meat Producers

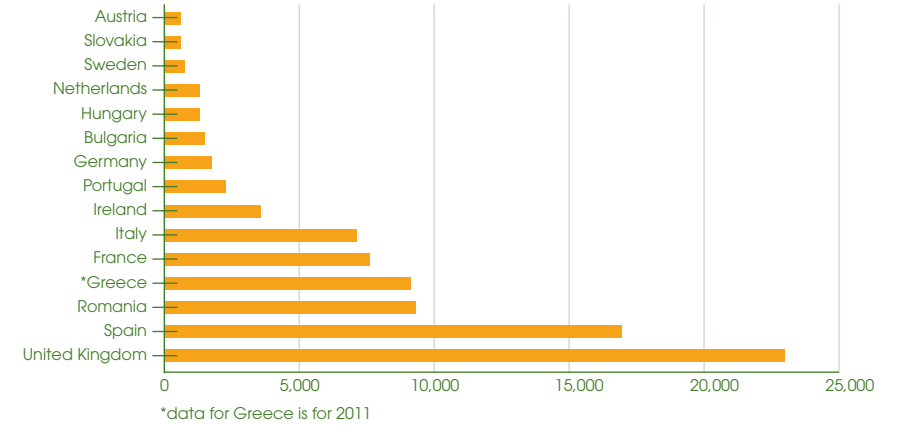
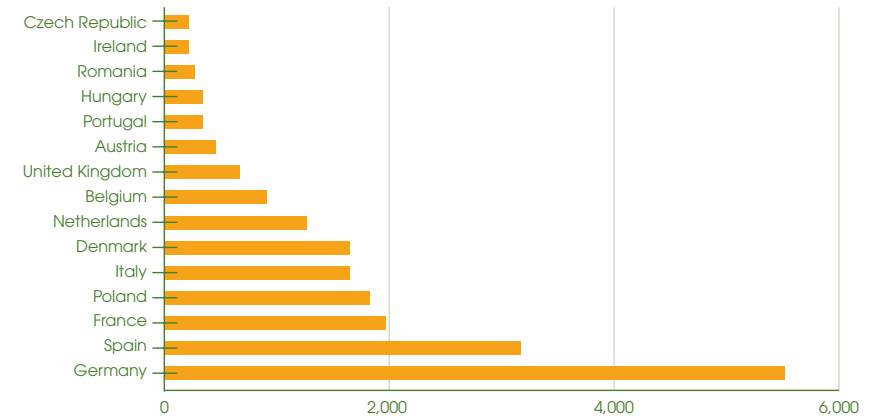
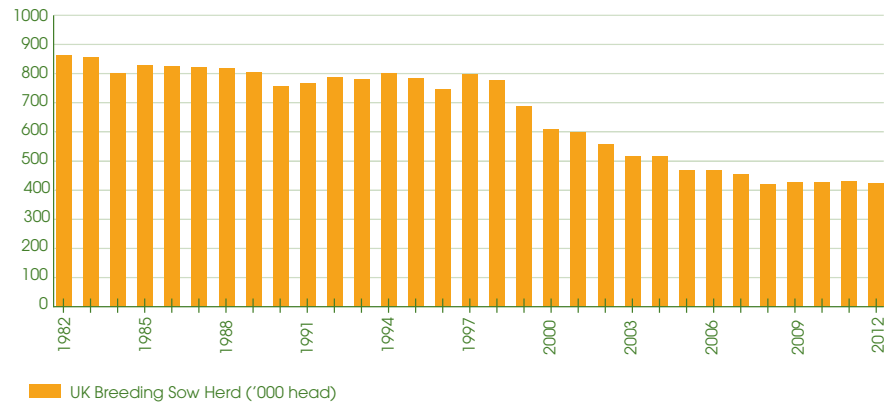


Fig 17  
EU Top 15 Pig Meat Producers



The UK is also in third place behind France and Germany in terms of cows' milk production, at 13.8m tonnes; fourth in beef and veal production behind France, Germany and Italy at 883,000 tonnes; and along with Spain the EU's biggest producer of sheep meat. The UK is less influential in terms of pigmeat production but this should be seen in the context of a substantial decline in the UK breeding sow herd over the last 15 years.

Fig 18  
Changes in UK Breeding Sow Herd 1982-2012



**Power and influence**

In 2010, in a report prepared for the Oxford Farming Conference (*Power in Agriculture*)<sup>13</sup>, researchers concluded that “while the UK may be perceived as a relatively small player in agricultural markets, it does punch above its weight in terms of global power, as a consequence of its position in terms of trade and that it is a base for some significant trans-national corporations”.

*Power in Agriculture* found that economic power in agriculture was concentrated in the United States and Europe, despite countries like Brazil and New Zealand becoming the world’s largest exporters of key agricultural commodities (such as beef and dairy products). Trade projections indicated that the distribution of such power was unlikely to change significantly up to 2020.

But the report also found that economic agricultural power in Europe and the US appeared to have peaked, and that the export capacity of some EU nations would decline over time. The study concluded that, although emerging economies like Brazil and China had clear advantages in certain commodity markets, the corporate power in agriculture and a great deal of the science and knowledge base remained in North America and European corporations, particularly the UK, France and Germany.

“  
We need 50% more production... on less land, with less water, using less energy, less fertiliser and fewer pesticides by 2030.

”  
Prof Sir John Beddington

Fig 19  
Regional Power Index for Agriculture

| Dimension | EU27 | USA  | Brazil | Russia | China | Australasia | Japan | UK |
|-----------|------|------|--------|--------|-------|-------------|-------|----|
| Trade     | 4.5  | 5    | 2      | 3      | 3     | 2.5         | 2.5   | 3  |
| Corporate | 5    | 5    | 1      | 1      | 2     | 2           | 3     | 3  |
| Political | 5    | 5    | 1      | 3      | 2     | 1           | 4     | 4  |
| Natural   | 3.5  | 4    | 3.3    | 3.5    | 4.5   | 3.3         | 1.5   | 2  |
| Minerals  | 1.3  | 2.5  | 2.3    | 4.3    | 3.3   | 1           | 0     | 1  |
| Total     | 19.3 | 21.5 | 9.6    | 14.8   | 14.8  | 9.8         | 11    | 13 |

**The gathering storm**

In 2009, government chief scientific adviser Sir John Beddington published the *Foresight Report on the Future of Farming and Food*, which for the first time laid bare the scale of the challenge of feeding humanity since Malthus.

Beddington’s “perfect storm” of dramatic world population growth causing increased demand for food, issues of global water security, and a changing climate, made the future ability of mankind to feed itself look doubtful. But Beddington remained optimistic, not least because leaders of developed nations like the USA and Britain were actively listening to scientists.

*“The global food system will experience an unprecedented confluence of pressures over the next 40 years. On the demand side, global population size will increase from nearly seven billion today to eight billion by 2030, and probably to over nine billion by 2050; many people are likely to be wealthier, creating demand for a more varied, high-quality diet requiring additional resources to produce. On the production side, competition for land, water and energy will intensify, while the effects of climate change will become increasingly apparent. The need to reduce greenhouse gas emissions and adapt to a changing climate will become imperative. Over this period globalisation will continue, exposing the food system to novel economic and political pressures.”*

(Summary to the *Foresight Report on the Future of Food & Farming*)

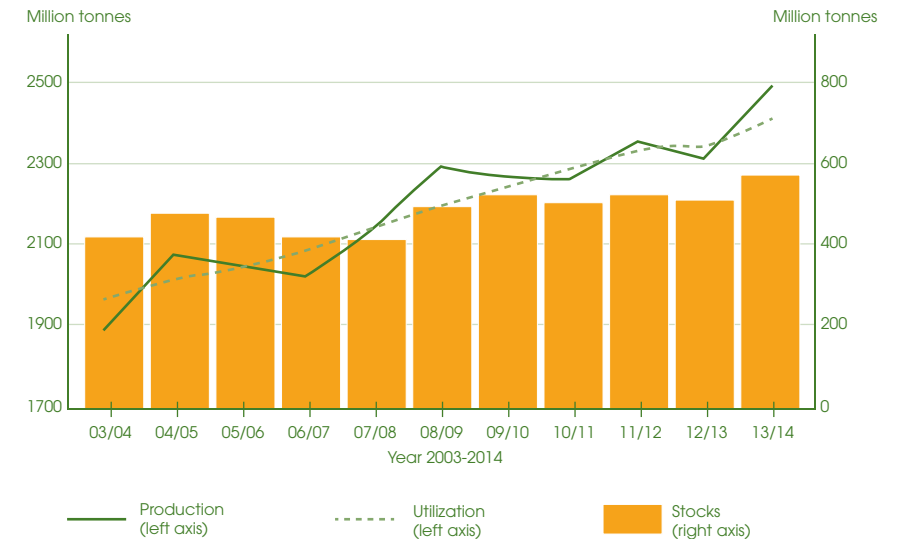
The report recognised that this presented immediate challenges for leaders of developed countries with science and knowledge bases to improve food production.

It identified the priority actions for leaders as follows:

- **Balancing future demand and supply sustainably – to ensure that food supplies are affordable**
- **Ensuring that there is adequate stability in food supplies – and protecting the most vulnerable from the volatility that does occur**
- **Achieving global access to food and ending hunger. This recognises that producing enough food in the world so that everyone can potentially be fed is not the same thing as ensuring food security for all**
- **Managing the contribution of the food system to the mitigation of climate change**
- **Maintaining biodiversity and ecosystem services while feeding the world.**

Fig 20

### World Cereals Production, Utilisation & Stocks



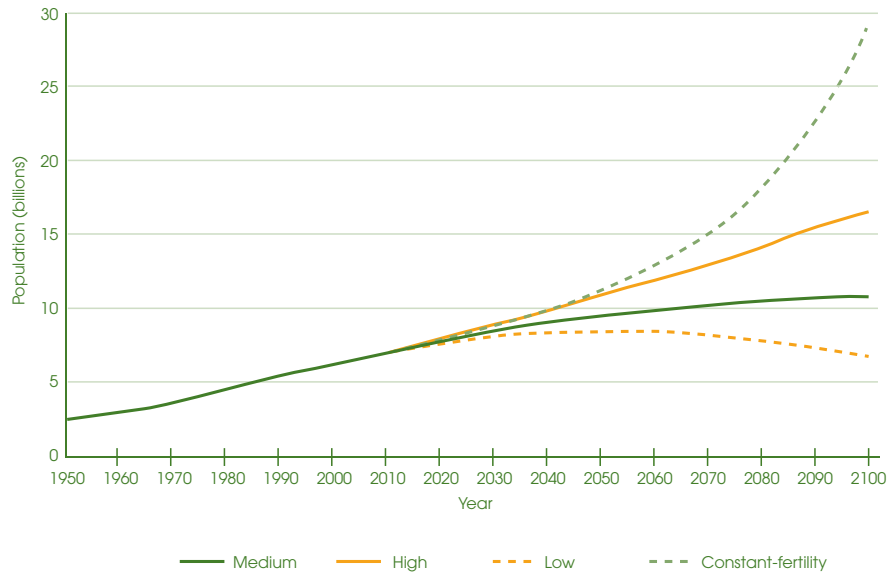
In 2012, the United Nations revised its population growth forecasts, predicting that the world population in 2013 – 7.2 billion people – is expected to increase by almost one billion people in the next 12 years, reaching 8.1 billion in 2025.

This suggests that pressure on food stocks of staples like rice and wheat could become more acute within the next decade, emphasising the necessity to increase food output substantially in the short term.





**Fig 21**  
**World Population Growth 2012 Revised Forecasts**



**UK government direction**

Since the *Foresight Report* was published in 2009 the UK government has articulated several strategies for the future of UK agriculture.

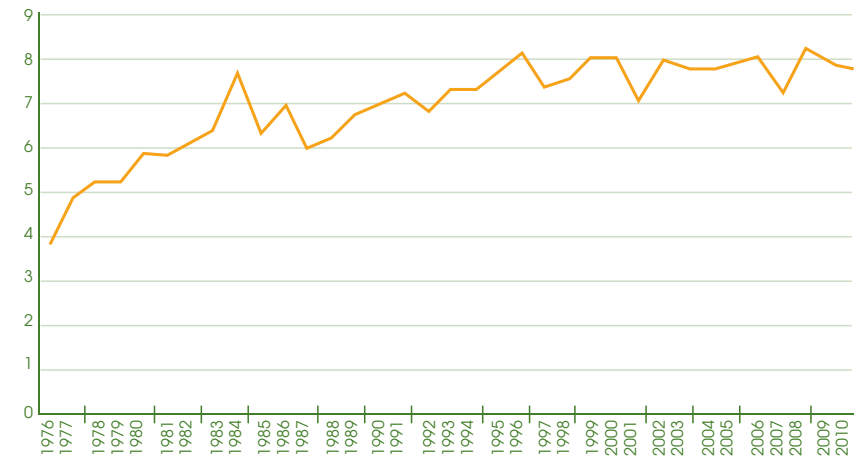
UK advances in production have slowed, as the graph on wheat yields opposite demonstrates. Coupled with this, general acknowledgement has grown that the Barnes Review of near-market agricultural research and development in the late 1980s led to a significant atrophy of core R&D in improving food production.

During 1988, the UK government announced the results of a review of agricultural research and development which proposed that £30m of ‘near market’ publicly-sponsored research should, in future, be funded by industry, or else be terminated. The implementation of the near market reductions took place between 1989 and 1992.

Even at the time, the decision drew criticism as short-sighted<sup>14</sup>. Farming industry representatives believed that both the scale of the proposals

and the method of their implementation would have serious implications for agricultural research. In a contemporary paper, an NFU policy adviser noted: “They ignore the capability of industry to fund this research and they fail to take sufficient account of the relationships that exist within and between research programmes, and of the multidisciplinary nature of research. In addition, they jeopardise the future development of commercial products and reduce the likelihood of industrial sponsorship in public research institutes.”

**Fig 22**  
**UK Farm Wheat Yields 1976-2010**



Nevertheless, the UK has maintained an admirable science and knowledge base through world-leading institutions like the National Institute of Agricultural Botany, Rothamsted Research and Brooms Barn. In addition, the UK government has channelled some £400 million a year into agricultural development, principally through the research councils (such as the Biotechnology & Biological Sciences Research Council and the Natural Environment Research Council) but also through organisations like the Technology Strategies Board, which distributed £90 million over five years to sector-specific R&D projects.

More recently, and against the background of the *Foresight Report*, significant policy attention has been focused on how to initiate a new period of intensive R&D in food production.

In 2012, the National Farmers Union, the Royal Agricultural Society of England, the Agriculture & Horticulture Development Board and the Agricultural Industries Confederation commissioned a high-level research and development agenda, to produce a set of clear and deliverable development priorities.

Entitled *Feeding the Future: Innovation Priorities for primary Food Production in the UK to 2030*, the report was edited by Professor Chris Pollock CBE of Aberystwyth University.

It was supported by the Technology Strategy Board's Sustainable Agriculture & Food Innovation Platform, and identified knowledge gaps and innovation opportunities to produce a document that provided a concise, coherent vision of farmers' and growers' requirements for research and development, up to 2030.

Professor Ian Crute, Chief Scientist at the Agriculture & Horticulture Development Board, said at its launch that it should "be the reference manual for our policy makers and funding providers over the next two decades".

The report identified the following as research priorities:

- *Develop the use of modern technologies (such as remote monitoring, control and application technologies) to improve the precision and efficiency of key agricultural management practices*
- *Apply modern genetic and breeding approaches to improve the quality, sustainability, resilience and yield-led profitability of crops and farm animals*
- *Use system-based approaches to better understand and manage interactions between soil, water and crop/ animal processes*
- *Develop integrated approaches to the effective management of crop, weeds, pests and diseases within farming systems*
- *Develop integrated approaches to the management of animal disease within farming systems*
- *Develop evidence-based approaches to valuing eco-system service delivery by land users, and incorporate these approaches into effective decision support systems at the enterprise or grouped enterprise level*

- *Extend the training, professional development and communication channels of researchers, practitioners and advisers to promote delivery of the targets above*
- *Improve the use of social and economic science to promote the development, uptake and use of sustainable, resilient and profitable agricultural practice that can deliver affordable, safe and high-quality products*

*Feeding the Future* also made five key recommendations:

- *Levy bodies and producer groups should consider establishment of joint programmes and leverage investment from funding agencies*
- *Research Councils and government should seek broader representation from producers on councils and committees*
- *An integrated approach to improve the provision of advice training and skills both at producer level and within R&D communities*
- *There is a need to ensure a consistency of policy approach between government departments and funders of basic and strategic research*
- *Future decisions over research funding need to protect UK capacity for scientific excellence while addressing skills shortages in key areas such as soil science and applied crop sciences.*





### A UK strategy for agricultural technology

*Feeding the Future* was followed in 2013 by the government's agri-tech strategy.

Emphasising the break with the past, the pre-ambule to the document noted that the UK has "institutes and university departments at the forefront of areas of scientific research vital to agriculture and related technologies; we have innovative and dynamic farmers, food manufacturers and retailers; we are well positioned to make an impact on global markets through exports of products, science and farming practices".

But at the same time was forced to admit that the "infrastructure to support industry in applying science and technology to help modern farming and food production has declined over the past 30 years. UK agriculture's productivity growth has declined relative to our major competitors. Aspects of the current regulatory regime and skills gaps can hinder the UK in developing and using innovation and new technologies".

In addressing these issues, the Strategy committed to a government injection of £70m to improve the translation of research into practice by investment in an Agri-Tech Catalyst which will provide a single fund for projects from the laboratory to market.

The strategy earmarked £90 million to establish Centres for Agricultural Innovation.

It will see the establishment of a Centre for Agricultural Informatics and Metrics of Sustainability, to help the UK exploit the potential of big data and informatics and become a global centre of excellence.

A new Agri-tech Leadership Council will give industry a stronger and more cohesive voice with government and the science base.

The strategy also recognised the need to build a stronger skills base through industry-led actions to attract and retain a workforce that can develop and apply technologies in practical agriculture.

The government also pledged to:

- *increase alignment of industry research funding with public sector spend by increasing understanding of what is being spent and where*
- *increase UK export and inward investment performance through targeted sector support.*

### Future of Farming report

In addition to addressing the perceived science and knowledge gap, the UK government had also tasked an independent group with looking at how agriculture could attract new people and skills into the industry. For some time concern had been expressed, often through agricultural media, that few opportunities existed for new entrants into agriculture and that the range of opportunities for those without a family connection to agriculture was limited. The *Future of Farming Review* looked in detail at whether the "balance against new opportunity" had swung too far with high land prices, the CAP supporting the status quo, farm tenancies becoming rarer and few other business opportunities available. It acknowledged the challenges facing agriculture and acknowledged that a consistently high calibre pool of talent was required.

The *Future of Farming Review Group* reported in July 2013 and concluded that there was "no real market failure" that needed addressing, but that barriers to entry into agriculture did exist.

The report admitted that "no one knew" how many new entrants, graduates, postgraduates, skills and unskilled farmworkers the sector needs now and in the future.

The group recommended that agriculture become more firmly embedded within the national curriculum, and that simultaneously the industry should support apprenticeships and fund creative graduate training schemes for the best students.

Finally, the report noted that "people should be encouraged to explore other entry routes (into farming) besides owning their own business".

## Summary

- Largely because of its continuing role in underpinning UK farm profitability for the majority of producers, or due to the legacy of decades of subsidised agriculture, the bigger-picture view of UK farming remains within the shadow of direct financial support from Brussels under the Common Agricultural Policy.
- Most farming businesses in the UK, in all sectors, remain significantly dependant on the Single Payment and on its successor, the Basic Payment and its Greening element. The payments may be decoupled, but production is still effectively subsidised.
- Direction of travel is clear; direct payments to farmers are reducing and will continue to do so. More funds will shift from Pillar 1 to Pillar 2. A greater demonstration of “public good” will be justification for land management and stewardship payments in the future.
- While payments to farmers in some parts of the EU remains essential in mitigating real poverty, critics insist that in nations with highly developed commercial agriculture, they keep the least efficient producers in business.
- The UK remains a significant political power in Europe and a leading food producer, being one of the top three wheat and milk producers in the EU28 despite its relatively small size.
- Due to its knowledge base and efficient production, the UK remains a powerful player in Europe and a considerable influence in the wider world.
- The UK has failed to maintain government-backed core agricultural research and development activity in the last three decades, instead relying on industry to develop near-market technological advances and diverting remaining funds through the research councils and universities. This is reflected in stagnating yields of key crops.
- Existing agricultural technologies are coming under pressure. Key herbicides are becoming less effective as resistance in target weed species builds, mainstream fungicides are losing efficacy with no really new chemistry being developed to replace them, and European regulatory policy is reducing the range of pesticides available to farmers.
- The UK government has taken steps to address some of the issues surrounding agricultural technologies, as the significance of Prof Beddington’s “Perfect Storm” has become accepted. A primary producer-led effort to identify research and development priorities for the next two decades has delivered a clear “roadmap” for policymakers and industry. Subsequently, the UK government has unveiled its strategy for agricultural technologies.



The UK remains a significant political power in Europe and a leading food producer, being one of the top three wheat and milk producers in the EU28 despite its relatively small size.



## CHAPTER 3 IMAGINING THE FUTURE: TOWARDS 2024

Having understood the position today, and examined the current direction of travel, it is necessary to look beyond the immediate future.

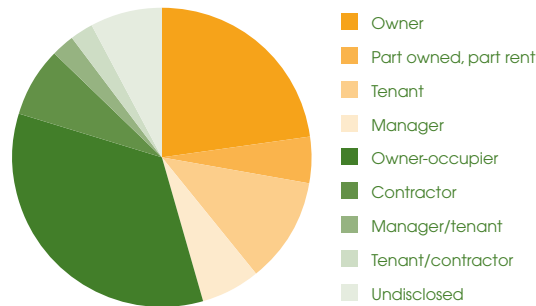
This study spoke to over 100 farmers and contacted more than 50 other industry professionals, in an effort to understand agriculture’s reasoned vision of its own future.

These interviews took place in July and August 2013, and most lasted around an hour. There was no questionnaire. Researchers used a “wireframe” outline for these interrogative conversations, within the three themes.

The following elements of this chapter summarise the ideas that emerged consistently from those conversations. The frequency of the same ideas recurring is indicated by the presence of keywords measured in the interview transcripts.

### 3.1 FARM-LEVEL STRUCTURE AND INVESTMENT

Fig 23  
Farmer Interviewees by Role



#### Organisational change in agricultural businesses

All interviews began with a leading question, asking farmers to suggest one single aspect of farm organisation or structure which needed to change in 5 to 10 years from now. Almost all could not identify or decide on any single particular item. However, “more cooperation”, “collaboration” or “cooperatives” were suggested a handful of times.

The views articulated by those in the group outside primary production varied, but generally indicated that they expected farming to become more “corporate” and “more business-like”.

#### Farm business ownership in 2024

Researchers probed farmers for opinions on how the profile of farming businesses may change over time. These conversation transcripts were analysed for consistent recurrence of ideas, indicated by keywords. The “word cloud” above demonstrates the prevalence of these thoughts and ideas relative to others.

The majority response was that there would be fewer farms, generally bigger, and that, as the illustration shows, external interests (investors from outside farming) would be a significant influence.

From this area of discussion began to emerge the idea of opportunities for farmers as operators.

The consistent appearance of “external investors” as a conversational theme was a distinct idea from that of “more corporate ownership” which seemed to suggest a shift away from family partnerships or sole traders, which the researchers then went on to explore.

Almost all farmers interviewed envisaged a profile of UK agriculture with fewer owner-occupiers. Some positively identified that this would lead to “more opportunities for operators/ managers working for investors”.

Generally, farmers consistently articulated the view that by 2024 there would be fewer family partnerships and more limited companies.

Nevertheless, it is a point worthy of emphasis that this did not suggest growth in the number of limited companies would necessarily be linked to an increase in the number of external investors; rather that more businesses would adopt limited company structure for tax reasons. Current corporation tax rates of 20% on taxable profits up to £300,000 offer an advantage over partners in a traditional partnership paying income tax, potentially at 40%, on their drawings.

However, this trend would be exposed to changes in government policy over time and such a trading status may not offer the same advantages in 2024.

The industry professional group generally agreed with a picture of fewer, bigger farm business structures in a decade's time, but also clearly identified a split between farm owners and operators.

Industry professionals also, with very few exceptions, foresaw fewer owner-occupiers in 2024 and a growth in limited company structures.

### Landlord & Tenant

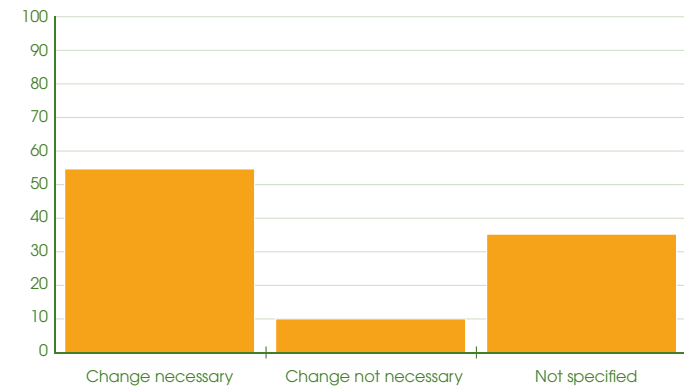
Conversations also looked at the landlord and tenant sector and probed whether farmers felt change was necessary in the landlord-tenant system and culture.

Themes that consistently emerged from these conversations were:

- *The decline in availability of County Council Farms*
- *The relatively short terms of most Farm Business Tenancies (five years or less)*
- *The level of risk tenants were obliged to accept outweighed the available rewards.*

The bar chart below demonstrates the relative prevalence of these ideas.

Fig 24  
Farmer Attitudes to Change in Landlord-Tenant Culture



It was generally felt that the nature of tenancies under the 1995 Agricultural Tenancies Act had become too short term, benefitting neither the soil (since the tenant, with no real long-term interest in the land, faces the necessity of recovering investment in agreed rent within a relatively short time) or the landlord's overall asset.

Specifically, interview transcripts show that where farmers identified the decline in County Council tenant farms, they clearly identified this as a viable route for "new entrants" to establish agricultural businesses which had performed this function adequately in the past.

Industry professionals consistently identified Farm Business Tenancies as "too short term" when asked to elaborate on why they considered a change in landlord-tenant culture necessary.

### Other models of land occupation and operation

Farmers were encouraged to discuss possibilities for other farming structures, with contract-farming and share farming specifically mentioned by researchers as possible models.

A very high proportion of farmers envisaged contract farming as an increasingly popular model in the future, as reflected in the word cloud overleaf. This was often qualified by statements such as "can't buy land

“

Farm owners will be fewer. But they will be agribusiness owners, not farmers as we recognise them today.

”

Arable manager

“

In 2024 there will be an increase in land ownership amongst non-farmer investors and greater professionalism among those operating and working the land.

”

Fresh produce grower

to farm so the only alternative”, “operators acting for larger investors”, “better opportunity than renting” or “those reluctant to lease land need operators”.

Share farming appears to be very poorly understood. Most farmers interviewed understood “share farming” to refer to farmers jointly owning essential pieces of machinery, whose capital cost might be outside the reach of an individual business. There seemed to be little knowledge of share farming in the terms set out in Chapter 2.1.

The industry professional group also consistently identified a considerable growth in contract-farming in 2024 as a direct response to a divergence between farm owners and farm operators. Several positively identified this as a realistic opportunity for new entrants in agriculture, providing services to the “non-farming” farm owners who would require operators.

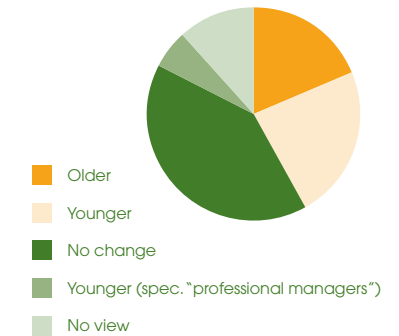
### Age of principal decision maker

It has become an often-quoted industry mantra that “the average age of farmers is 58 (or thereabouts)”. Researchers attempted to avoid quoting this specifically in an effort to prevent the conversations becoming a debate about the veracity of this statement; instead they asked farmers to explain whether they believed the average age of the principal decision

maker in the farming business would trend older or younger in the coming decade.

While the overwhelming majority were of the view that there was unlikely to be any change, the alternative view that decision-makers would generally be younger was more prevalent than the opposite view. The chart to the right reflects the general prevalence of these ideas. Since several interviews specifically qualified their view that decision makers would be younger as the number of “younger, professional managers” in the industry grew, this is clearly delineated.

Fig 25  
Change in Age of Principal Decision Makers



### Succession and new entrants to agriculture

Farmers' views in this area were mixed, with the majority agreeing with the suggestion that succession within farming businesses was a problem the industry faced. However, a significant number did not agree that succession was a major issue.

However, the word cloud below illustrates some of the recurrent themes within the conversations. Contract farming was clearly identified as a positive opportunity for individuals not succeeding to control of a farm business.

There were also frequently expressed views that incentives for farmers to retire were necessary and government may be able to intervene through changes to tax reliefs to facilitate this.

Most industry professionals considered that succession would be a significant problem for farming businesses by 2024. Comments that emerged from the interviews included the view that there would be a "missing generation" of farm decision-makers by then and, specifically, that growth in contract farming described above would offer an opportunity to those keen to farm but without a business to succeed to.



“  
The oldest on the farm always holds the purse strings and they don't retire easily.  
”  
Mixed farmer owner-occupier

“  
The younger generations work hard and maximise efficiency on the understanding that they will reap the rewards based on inheritance.  
”  
Mixed farmer, owner-occupier and tenant

### Farm size

The vast majority of farmers interviewed believed that farm sizes would increase and that there would be fewer farm businesses in 2024. Almost all saw this as a continuing trend of consolidation.

Estimates of average sizes for arable farms varied considerably, often constrained by unforeseeable technological boundaries such as a single combine capacity. Researchers pressed the farmers interviewed to focus on arable farm areas per individual or staff member, with most the most frequent view expressed suggesting the average arable farm size could be 1,000 acres/ individual in 2024.

Where distinct causes were identified, improvements in technology were seen as the catalysts for this change. Popular keywords were "driverless" and "GPS".

Industry professionals agreed with the consensus that there would be fewer, bigger farming businesses in 2024. Estimations of size were broadly similar to the farmers' group.



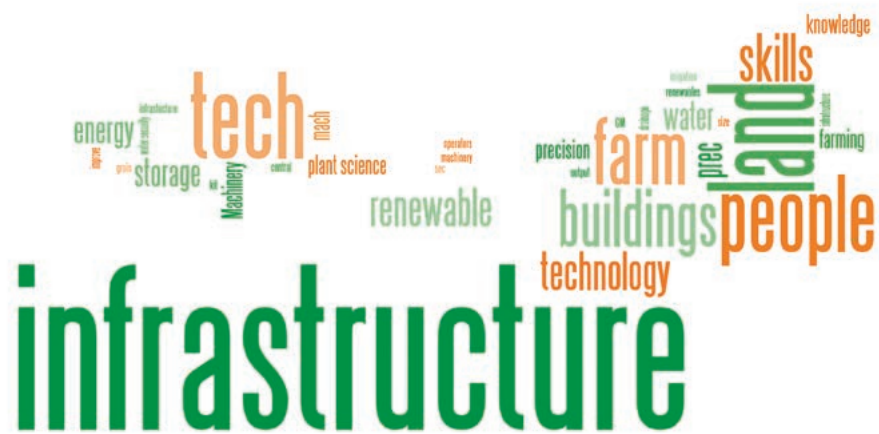
### Investment priorities for farming businesses

Popular areas for priority investment on farms (researchers guided farmers in this area by asking them to consider investments in the context of viable competitive, sustainable businesses in 2024) are expressed in the word cloud below.

The dominance of “infrastructure” as a specific response is clear, but the relative text size of “buildings”, “people”, “land” and “tech” indicates the popularity of these responses.

Renewable energy was also identified by farmers as a priority area for investment.

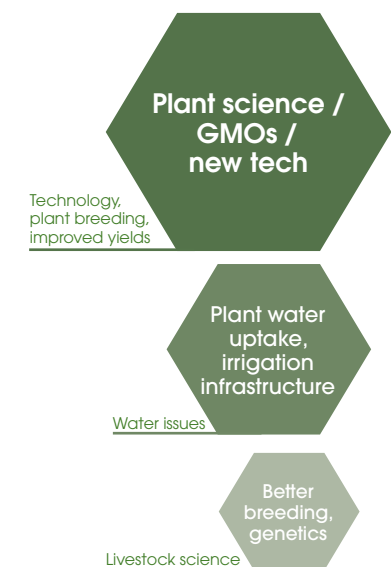
Views articulated among the industry professionals were mostly similar but showed some interesting divergences. For instance, keywords such as “leadership”, “management” and “business strategy” emerged only within this group. Compare the word cloud opposite with the one from the farming group below.



### Wider industry investment

Continuing this theme, farmers were asked to consider the wider industry needs. In many cases, similar ideas emerged but the chart to the right shows the groups of keywords relative to their frequency. The bigger hexagons reflect a clear focus on plant science as the investment priority for most, with a significant number identifying water security and other water-related issues as priorities.

Again, the industry professional interviews broadly reflected the same themes within the farmer discussions; but “management” and “leadership” emerged as targets for industry investment only within this group.



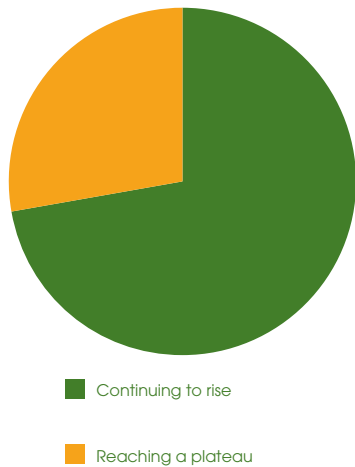
### Capital

Farmers were generally very wary of the suggestion that new sources of capital might be attracted to agriculture, with most agreeing that there was no need for agriculture to seek it out. However, a small number of farmers believed capital from “private investors” could help UK agriculture. Generally, farmers were suspicious of “investors”. Many asserted the view that investing in land and investing in farming were different objectives and that tax reliefs from inheritance tax attracted wealthy individuals or families to the former but not the latter. Common responses included “investors don’t understand farming”, “they will take over from farmers”.

### Land values

Most saw land values continuing to rise. Many commented on a disparity between the productivity or earning capacity of land compared to its market value. The overwhelming perception among farmers was that “external investors”, attracted by strong capital growth in recent years, the perception of farmland as a safe haven or inflation hedge, and the powerful draw of protecting wealth from inheritance tax, were the main drivers behind the continued growth.

Fig 26  
Farmers’ Views on Land Values



The industry professionals interviewed generally agreed with the trend in farmer discussions.



There is a lot of outside money coming into farming for tax purposes, who have (sic) tame farmers to farm their land.



Dorset tenant farmer

“  
When does an investor stop being an investor and start being a farmer?  
”



Mixed farmer,  
owner-occupier

### Capital from debt

Almost all farmers interviewed believed that lenders viewed agricultural businesses as attractive to lend funds to only when that business had some degree of land ownership to offer as collateral. Only a very few saw this situation changing over time. Some suggested that an increase in the perceived importance of agriculture, as more food is needed to feed more and more people, would influence lenders’ attitudes towards lending to “operating” farming businesses, as opposed to “landowning” farming businesses.

### Inheritance Tax Relief

With only a few exceptions, farmers supported the belief that Agricultural Property Relief from Inheritance Tax should remain. Many commented that it was “essential for succession”, presumably because it prevents farm assets being divested to meet Inheritance Tax obligations and allows one generation to pass the maximum amount of assets to the next. However, many made the statement that APR should be available “only to genuine farmers” although it was not clear from the interview transcripts how the distinction could be drawn.

Generally, the industry professionals’ group concurred with the views from farmers here; there was a recurring view that this supported earlier assertions of “farming” (operating) becoming distinct from “farm ownership”.

### Direct support payments for agriculture

Farmers were divided roughly equally as to whether they believed direct support would continue for farmers in 2024. Many asserted the view that it “had to”. Others insisted that the Single Payment “was people’s profit” and that “farming needs to be subsidised”.

It is important to acknowledge within these conversations the significant number who stated they would prefer to be able to farm without support and saw this as a worthy aim.

Researchers asked farmers to consider other countries’ policies towards subsidising agriculture, specifically mentioning New Zealand as an example of a nation where farm subsidies had been removed. A significant number of farmers expressed a respect for farmers in New Zealand who saw direct support payments withdrawn between 1984 and 1987 and have since seen businesses recover to a similar position before the reforms. However, they regarded with horror the prospect of UK agriculture enduring a similar period of adjustment and believed such an action would leave UK agriculture at a competitive disadvantage to the rest of Europe.

Most industry professionals considered that direct support payment to producers would dwindle or disappear altogether by 2024, although payments would continue to be made to farmers for environmental management. Essentially, this group suggested that the trend of Pillar 1 support moving to Pillar 2 would continue. Most of those interviewed considered that farming without support was preferable to a continuing subsidy system and agreed that New Zealand’s experience had left its farming industry in a better position 25 years later.

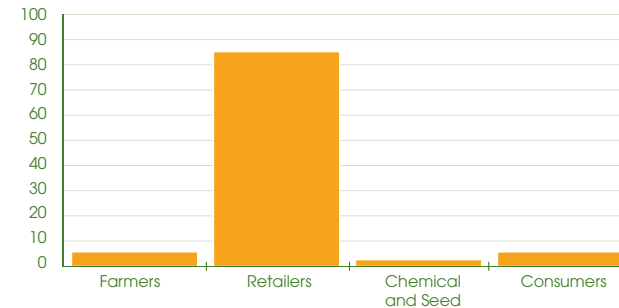
## 3.2 THE AGRI-FOOD SECTOR

### Power within the agri-food sector

Interviews with 100 farmers told us that in 2024 they saw the majority of power in the sector remaining with or moving towards retailers. Only a few identified consumers as holding significant power. Retailers holding the majority of power was also the consensus among the industry professional group.

Fig 27

### Power within the Agri-Food Sector in 2024



### Retailer profile

Most farmers saw the “Big Four” maintaining their position in 2024 but a significant number believed they would be challenged by European “hypermarket” chains such as Carrefour. Others stated that there would be consolidation within the top four retailers.

Most agreed that discount retailers would continue to see growth.

### Farmers’ role in the supply chain

Slightly more farmers believed that farmers in general would hold more power in the food supply chain in 2024 than those that didn’t agree with this statement. Researchers asked farmers to develop reasons for this belief. The following ideas emerged consistently:

- *“Collaboration will be essential”*
- *“There will be more direct-supply contracts with retailers”*
- *“The supply chain will be more integrated with fewer, bigger agribusinesses supplying retailers directly”*
- *“There will be more control over contracts with retailers...”*
- *“...but only through greater collaboration”.*

The industry professionals agreed with some of the ideas here. The concept of direct supply contracts with retailers also emerged strongly from the discussions. There were consistent references to producer groups supplying retailers directly, shorter supply chains and more vertical integration.



### 3.3 PROMISE, POLICY AND PERSPECTIVE

Researchers moved the discussion on to prompt responses concerned with a bigger-picture view of UK agriculture in a more global context in 2024.

#### Changes in global agriculture

Many farmers articulated a belief that there would be a big increase in agricultural production from the Former Soviet Union countries with land currently not used for food production being developed.

Most farmers identified this as a serious competitive threat to UK agriculture from least-cost production nations making dramatic improvements in yields of crops like wheat and corn.

Production increases in India and China were also identified as having a significant impact on the ability of UK agriculture to produce commodities competitively on a production-cost basis.

The world cloud above demonstrates the view among farmers interviewed about which countries would see major growth in agricultural output by 2024.

These views were reflected strongly in the industry professionals' group. Water security and climate change were identified as the issues that would dominate, or at least have a much greater effect, on agriculture in 2024.

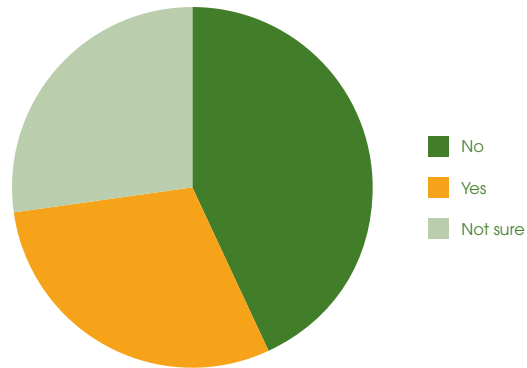
The vast majority of respondents in both groups regarded the adoption of genetically modified crop technology in mainstream agriculture as a definite outcome in 2024.

Some of those who held an alternative point of view believed that either: consumers would never accept genetically modified food production and the UK and Europe would remain outside mainstream adoption (becoming a niche, GM-free food market), or that transgenic technology as it is understood today would quickly become superseded by unspecified, new advances in technology. It is worth noting that researchers did not specify what "GM technology" might mean in this context but it seems reasonable that glyphosate-resistant plants (Roundup-Ready) is the best known and most widely accepted transgenic technology and this may have been the specific to which farmers and others interviewed referred to.

#### The UK's position

Of the farmers interviewed, most generally had a positive or neutral perspective on the UK's position in world agriculture in 2024, with most drawing the obvious distinction that the UK influence would not be as a highest-quantity, lowest-cost commodity producer. A consistently high number of conversations directly referenced the UK's position and reputation as being based on its skills, knowledge, education and science base in agriculture, and the belief that this would continue to make the UK an important base for key trans-national corporations in agriculture or related sectors.

Fig 28  
**The UK as a Key Player in EU or Global Terms in 2024**



On the whole, the industry professionals' group was slightly more positive, with nearer to half indicating the UK would be a global influence in 2024. Similar reasons were articulated.

**International trade**

Farmers and industry professionals were divided in similar ways on the future of UK international trade.

A consistent idea which emerged clearly from both groups was that the UK would export "science, skills, knowledge", apparently underpinning the view expressed in this research that the UK's influence would come from its advanced agricultural systems, technology and knowledge base.

**3.4 WORKABLE IDEAS?**

From these interviews, the ideas that emerged consistently were presented as a series of statements of received wisdom. This is the picture of UK agriculture in 2024 as projected by nearly 150 individuals engaged in primary production or as professionals in related sectors. These do not constitute the findings of this report. An example of such a statement is: "The accepted definition of 'farmer' will change from someone assumed to own land and operate its agriculture using their own capital, management and labour. The identity of a farmer as an operator will become accepted."

These thoughts and ideas were placed in front of a panel of 10 expert witnesses to assess and critique. Some of these statements have gone on to inform the conclusions of this report.

CHAPTER 4

**CONCLUSIONS AND RECOMMENDATIONS**

**4.1 STRUCTURE AND OPPORTUNITY**

- *Within the next decade there will be a significant opportunity for the most flexible, professional and well-organised farming businesses to meet demand for professional operators from investors committing capital to land and farming.*

By 2024 there will be a growing divergence between those owning land and those operating (farming) it. An increase in the activity of "external" investors, attracted to investment in land through the continuation of Agricultural Property Relief from Inheritance Tax and an expectation of continued capital growth, will require a new generation of equipped operators to farm for, and often with, them.

This provides a significant opportunity for existing farmers and new entrants as contract farmers, share farmers, and professional managers.

There will be fewer traditional owner-occupiers within the profile of farming businesses and more farmers who are "professional operators", although they may own land themselves.

Many who do not wish to take any exposure to risk in terms of farming activity will continue to let land. Any sustained period of downward pressure on agricultural commodity values is likely to lead to a trend in this direction. But it is more likely that in 2024 other models where interests are better aligned will be more popular. However, little data on contract farming, share farming or other arrangements are currently collected on a national basis, making trends difficult to measure.

- *These professional operators will challenge the accepted definition of "farmer" as the industry and, to a degree, society popularly understands it.*

An emerging picture of farm businesses "operating" for each other and for others owning land will lead to businesses becoming increasingly corporate, professional, technically advanced, well-invested and more efficient operators. This is likely to significantly enhance the UK's position as "sustainably competitive".

- ***Bigger agricultural businesses, increasingly well invested, will provide opportunities for a higher level of business management and leadership.***

This will be reflected in business structures and there will be a greater demand for specialist managers within enterprises. An increasingly corporate complexion to the appearance of UK agriculture will lead to a greater degree of professionalism in leadership and management. There will be a significant demand for well educated business leaders (farm managers) who will be well rewarded for excellent performance. This will provide additional opportunities, and a definable career path, for new entrants to agriculture. Investors will hold a different level of expectation in terms of a return on capital than those with which agriculture has traditionally been comfortable.

Those committing capital will need to engage professional, commercially astute business managers to maximise returns from the trading element of their agricultural investments. This, again, provides opportunities for talented individuals to enter agriculture. It is likely that farm business managers (more like company chief executives) with responsibility for significant working capital and assets will be rewarded in new and innovative ways, possibly by accruing share equity in the business. This is often how business leaders are rewarded in sectors other than agriculture.

There is a significant risk to UK agriculture that this talent could be exported overseas by lack of opportunity or challenge.

- ***New, dynamic structures to combine land, labour and capital will be needed, which align interests more closely than traditional models like farm tenancies. Share farming represents a largely overlooked opportunity for UK agriculture to develop successful new farming businesses.***

Short-term models of land occupation without adequate security of tenure do not offer real benefit to landlord or tenant. They inhibit investment and drive operators' costs higher. This makes UK agriculture less competitive and will continue to do so in 2024 unless addressed. The landlord-tenant system is a valuable part of agriculture but it is generally felt that tenancies have become too short term. In reality this often benefits neither landlord, tenant, nor the land itself.

The landlord-tenant system as it stands does not represent a reasonable avenue for new entrants to farming. Too much capital is required; they have no land asset to borrow against, no long-term security of tenure as collateral.

There are too few alternatives. Contract farming, when organised and operated well, can be extremely successful and significant growth over the next decade is anticipated. But it is not perfect. Contract farmers benefit only from a portion of trading returns.

Share farming, widely adopted in New Zealand, provides an alternative. Share farmers, bringing land, labour, capital and skills together, share total returns from the business including equity growth. It will be challenging for UK agriculture to accept arrangements where the landowner does not simply accept a "rent" by proxy. But a new generation of professional share farmers, willing to engage with each other in new ways, will be more sustainably competitive in the long term.

## 4.2 INVESTMENT

- ***Farm businesses must invest in infrastructure – buildings, roads and water systems - and should consider collaborating or cooperating to do so, in order that sufficient capacity can be achieved. Irrigation and access to water will become of increasing importance.***

The anticipated continued growth in farm sizes and machinery capacity will render the cost of some key infrastructure items – grain storage, for instance – outside the scope of some businesses, particularly where major operators act for them covering very significant areas. Where this investment is not met on farm it should be achieved collaboratively or cooperatively. Excellent examples of both central grain storage and major irrigation networks already exist in the industry.

The direction of travel has been set out elsewhere in this report, and it is unnecessary to repeat points about the age of on-farm infrastructure or the high capital cost of investment after sustained periods of low returns. However in order to achieve a sustainably competitive agriculture by 2024, investment in our food- and energy- producing assets is essential.

Current trends suggest that today's farm investment, where possible, is not adding to the bottom line. Farming is drawing on capital from its traditional source – debt – to sustain working capital requirements. Farming businesses must invest in meaningful assets to allow future profitability.

- ***UK agriculture should be less wary of new sources of capital.***

Farming businesses without land – "operators" – may struggle to attract lending from conventional sources, which have traditionally been comfortable lending against a land asset. But agriculture in 2024 could see new sources of capital drawn to the sector, willing to lend to operators without land. Peer-to-peer lending or crowd-sourced lending among farm businesses may occur.

There is no doubt that the presence of a valuable asset effectively as collateral, is a reassuring factor to any potential lender whether a bank, family office or other institution. But banks and other lenders are likely to look favourably at an industry whose importance is better recognised in 2024 as world population grows and climate events become more unpredictable. In any case, most lenders are more likely to support well-managed, efficient businesses with a high standard of management.

A greater diversity of sources of capital to stimulate farming investment would support a vision of a sustainably competitive UK agriculture in 2024.

- ***To fully capture the opportunities offered by renewable energy generation today, and fresh opportunities in the coming years, agriculture must invest directly (accept the risk) to capture the greatest possible returns.***

UK farm businesses risk missing out on a huge opportunity. As renewable energy generation becomes an increasingly established industry, agriculture must avoid being relegated to a role as the “landlord”, allowing other motivated entrepreneurs to capture the whole value of the opportunity.

#### 4.3 THE AGRI-FOOD SECTOR AND BEYOND

- ***A growing awareness of food security concerns will lead to a shift in the balance of power in the supply chain – with more power in the hands of producers. The role of the primary producer will become more integrated with retailers, packers and processors.***

There will continue to be an opportunity for niche production businesses dealing directly with the public. Demand for locally produced or sourced food with fewer food miles, causing lower emissions, with a high nutritional value will continue to grow. There will be much more business conducted online and this represents a considerable opportunity for all food businesses of every size and scale.

- ***The agri-food supply chain will have to become significantly more efficient and it is at the primary production end where the demands will be made.***

Primary production should consider integration in the supply chain as a partnership in which all must take a reasonable balance of profit and risk. There will be major investment through the supply chain in new technologies - sensor-and model-based quality and delivery management. The capital investment required is likely to require farmers to be much

more closely involved with purchaser and probably retailer too. The capital investment necessary may cause farm business to draw on new methods of raising capital such as peer-to-peer lending. Again, there are likely to be clear advantages to groups of farm businesses working together cooperatively or collaboratively.

- ***The UK risks exporting its talent both in the science community but also in agricultural leadership and business management.***

It is generally accepted that there is a great deal of potential to improve food production in parts of the Former Soviet Union, sub-Saharan Africa and elsewhere, offering commercial opportunity.

Corporations which are knowledge owners may take expertise and investment elsewhere. Due to prevailing policy attitudes European markets may not offer the return on investment needed in reasonable timescales. And as the cost of scientific discovery continues to rise, so TNCs are likely to focus on areas of the world which offer the greatest return.

Furthermore, a clearly articulated view, in the farmer and industry professional interviews which underpin this report, is the threat that the UK could export its knowledge, science and technology. In 2024 the next generation of internet communications is likely to mean that people are able to travel more easily and maintain communications at home. UK agriculturalists, scientists and technology developers may be lured abroad where major transnational corporations are focussing on new markets, where the biggest gains in agricultural productivity stand to be made.

- ***Prevailing policy environments in Europe may inhibit the ability of UK agriculture to be competitive in the longer term.***

Current European regulatory attitudes towards plant protection products means “sustainable intensification” is receiving less emphasis on productivity increase than environmental concerns. Europe risks being left behind, losing competitive edge.

Of greater concern than increases in outputs from nations with a developing agriculture has to be the potential decrease in production within Europe if food production tools are revoked or removed faster than new gains in productivity can be made. The increasing failure of some established fungicide groups, coupled with the potential revocation by European directive of most insecticide products, could be more of an inhibiting factor on the UK’s ability to be sustainably competitive.

- **New technology – post GM – is emerging but must not be allowed to fall victim to the same “Luddite” attitudes which have left Europe isolated from transgenic technology.**

New biological knowledge – cis-genics and synthetic biology – must not be allowed to fall into the same trap as established GM technology did in Europe. The cost of doing so would be catastrophic in terms of food production failing to increase to feed the world’s growing population.

Evidence in this study indicates that over the next decade, Europe will become increasingly important as a food producer. The use of transgenic technologies will become more mainstream but in richer western European countries niche markets will remain for conventional and organic food. The use of cis-genics – natural genes from the same plant species or crossable species – will become accepted.

Europe will use GM techniques to produce “non-GM” crops – such as the development of synthetic wheat – which uses the skills and techniques developed by GM researchers, but is deemed conventional. The definition of GM will become less clear-cut, as techniques like gene-silencing become more mainstream – i.e. not introducing “foreign” DNA into crops and animals, but switching on or off genes within individual plants.

- **Water security will be the key defining issue for food production in a decade’s time and UK agriculture must take steps to ensure sufficient water is available for food production under the UK’s regulatory system.**

In global agricultural terms, access to water is likely to be as important as access to oil in the coming decades. Research on crop genetics leading to high yield-potential crops relies heavily on access to water.

Despite much research into drought tolerance, plants still use a lot of water during photosynthesis – and high yielding crops need even more water. Evidence in this report indicates that even if a 20-tonne wheat crop was available to UK farmers tomorrow they could not achieve the full potential yield because water is limited. Experts estimate a 20-tonne wheat crop would require 1,000mm rainfall – or 0.5 tonnes of water to produce 1kg of flour. Water will increasingly become the largest limiting factor to production, even in Europe, although other parts of the world will have more severe water-limiting issues.

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## APPENDIX 1: SECTOR-BY-SECTOR OVERVIEW OF UK AGRICULTURE 2014

The following sections describe what has actually happened over this time, focusing on data and associated publications from the DEFRA June Survey of Agriculture, Farm Business Survey, AHDB levy board reports and associated publications. It should be remembered that the average farm does not exist.

### Grazing livestock

The importance of grazing livestock should not be underestimated with almost two thirds of the UK and half the agricultural area of England being under grass and dominated by permanent grassland, with around 9.9 million cattle, equally split between dairy and beef systems, and 32.2 million sheep (Defra 2013a). In addition to making a significant contribution to the economy, there are a number of additional contributions including the aesthetic value of farming landscapes, with generally positive impacts for habitat and wildlife, and contribution to food security (LUC, 2011; Marsh et al, 2012).

### Hill and upland beef and sheep

The traditional basis of the hill and upland grazing livestock sector is the keeping of suckler cows and breeding ewes, with the hills dominated by hardy breeds. Occupying 13% of the total farmed area, 12% of holdings, one third of beef cows and just under half of the breeding sheep population are in this area (Defra, 2010, 2013a). Farm Business Survey data (Rural Business Research, Newcastle University, 2008 to 2013) suggests that the average farm size tends to be just over 135ha and dominated by permanent grass (~80ha-90ha). There is a substantial tenanted sector, with just under half of the utilisable agricultural area (UAA) owned and just over half rented. The average number of cattle is ~80-90 with roughly one third representing the breeding livestock. The average number of sheep is ~600-700 having seen an increase in recent years, with approximately half representing the breeding livestock.

The purely agricultural side of the business has, until recently, been frequently loss-making, with beef and sheep enterprises alone unable to sustain themselves. Despite this the proportion of revenue from the farming enterprises has increased over recent years (from 50% to 69%) perhaps in part due to the declining level of the Single Farm Payment (SFP) and increasing livestock prices, with a farm income of £583 in 2011/12 compared to -£16,044 in 2006/07. The better performing agricultural business tends to have more output per grazing livestock unit (GLU),

lower variable and fixed costs, make better use of its labour, is larger than the average farm, but has lower stocking rates and thus is therefore not necessarily on the better land. It also rents a greater proportion of its land.

Other sources of revenue are from the SPS (~20%), agri-environment schemes (9%), and other diversified non-farming activities (2%). Overall, Farm Business Income (FBI) which includes these other sources of revenue has gone from £10,786 to £29,213.

### Lowland beef and sheep

Lowland grazing livestock occupies about 16% of the area of farmed land in England, but 31% of the holdings, both full and part time (Defra, 2013a, 2010). The average farm size has fluctuated from 85ha to 105ha, and is dominated by permanent grass and rough grazing (70%) with a substantial part of the remainder being temporary grass or fodder crops (18%). There is a substantial tenanted sector, with 59% of the utilisable agricultural area (UAA) currently owned and the remainder rented. Beef enterprises tend to be owner-occupied, while sheep enterprises are generally on tenanted land, with significant areas of rough grazing where the land does not allow any other type of production. The average number of cattle at any one time is just under 100, with approximately 25 suckler cows. The average number of ewes is around 165.

Over time the proportion of farmers making a loss has declined (from 20% in 2006/07 to 8% 2011/12), with the remainder currently equally split between those making less than £20,000, those making between £20,000 and £50,000, and those making over £50,000. This is primarily due to increasing livestock prices, with cattle prices generally on an increasing trend since 2003, and sheep prices on the increase since 2007. Average Farm Business Income has thus gone from £13,490 to £32,167, and is also, despite the increasing cost of inputs, of which concentrates (~40%) and fertiliser and sprays (~15%-20%) are the key variable costs. However, SPS has been crucial to profitability. It is worth noting that beef finishing tends to be the most profitable enterprise followed by sheep breeding, then store cattle, then the suckler herds.

### Dairy

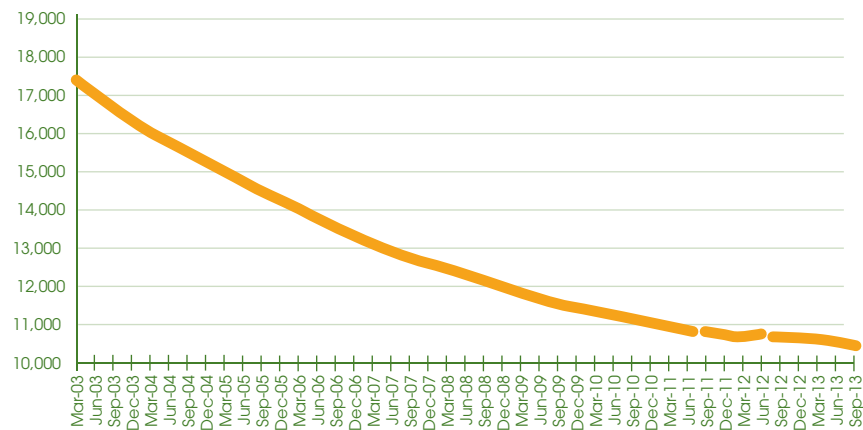
Dairy farms occupy 11% of the land area, but only 7% of all holdings (Defra, 2013a, 2010). Over time, the dairy sector (which it was suggested would see less impact from the introduction of the SPS) has seen falling producer numbers accompanying a trend towards larger average herd sizes, but also larger average holding size. In 2005/06 the average yield was 6,738 litres per cow, compared with 7,617 litres in 2011/12. Up until 2011/12, the

increases in milk yields had not been sufficient to keep pace with the continuing fall in cow numbers.

In terms of profitability, FBI has generally been increasing, rising through to 2008/09, followed by a drop before increasing again to £608/ha (£86,750) in 2011/12. The major upturns in economic performance have been in 2008/09 and from 2010/11 onwards. Management and investment income shows a similar pattern (£292/ha in 2011/12) but also highlights the fact that, with the inclusion of farmer and spouse labour costs, the smaller farms' reliance on family labour makes them unprofitable.

More generally, the average figures mask a wide disparity in performance between the lowest and highest. Contributing to the increased income more generally has been the improving milk price from 16p per litre in 2006/07 to 28p per litre in 2011/12 with substantial fluctuations over that period. Alongside this, there has been a continued increase in input costs, primarily feed, fertiliser and energy. With on-going structural change and the need to invest, the trend towards fewer, but larger, production units in the lowlands will continue.

### Milk Producers in England and Wales 2003-2013



DairyCo/FSA

### Specialist pigs

There are currently 4.5 million pigs, comprising a breeding herd of 523,000 and fattening stock of 3,958,000 (Defra, 2013a). There are 10,900 holdings, of which 6,000 are breeding sow holdings (Defra, 2010). They occupy less than 1% of agricultural land and only 2% of holdings. The average breeding herd is 72 sows, although the number of pigs in a unit is ~400 for those solely breeding or fattening, ~250 for those doing both, and ~50 for those farmers contract rearing.

Profitability has fluctuated dramatically, with FBI at its lowest in 2006 (£6,307), peaking at £75,384 in 2009, declining again in recent years (£37,980 in 2011). Increases in production cost, especially feed, have had a major impact on profitability. Feed typically represents around 60% of pig meat production costs (BPEX, 2012). There is, however, a great variation in profit performance with larger farms the more profitable whereas smaller farms are going out of business.

### Poultry

The UK poultry industry grew significantly through to 2005 (Rural Business Research, University of Reading, 2007a to 2013a), although occupies less than 1% of the agricultural land area and only 2% of holdings (Defra, 2013a, 2010). Since 2005 there has been an almost continual decline in poultry numbers. The period through to 2005 led to a near doubling of birds for meat production (broilers), and despite the decline in the number of laying hens, increases in productivity have maintained egg production. Currently, the industry is split into 64% table chicken (meat), 29% laying hens (both to replace the breeding stock (6%) and for eggs for eating (23%)), and 7% other, roughly equally split between turkey, ducks and geese, and other poultry. The average number of birds per farm currently is 52,092.

Today, the majority of eggs come from just 2,000 holdings. Since 2012, 48.6% of production is in enriched cages (required since January 2012), 3.6% in barns, 45.2% as free range, and 2.6% organic, with free range systems increasing. Producers sell to packers, of which there are a large number (>1,000) who sell to retail (49%), processors (28%) and wholesale/caterers (23%).

FBI has fluctuated but generally been on a downward decline and for the industry as a whole is at its lowest for a number of years at £41,110. In contrast the FBI for the broiler flock, currently at £76,509, shows an increasing FBI over time, only falling in 2012.

## Crop production

Cereal farms (cereal, oilseeds and pulses) and general cropping farms (combinable and root crops) represent around 32% of all holdings (Defra, 2010), with cereal farms occupying 29% and general cropping around 16% of the agricultural area (Defra, 2013a). Over time, the average size of a cereal farm has remained relatively stable, fluctuating around the 200ha mark, the general cropping farm has fluctuated more widely around the 220ha mark and is currently around 245ha. The key crops are wheat (44% of the arable crop area), barley (22%), and oilseed rape (17%), with potatoes, sugar beet, peas and beans combined, oats and maize (each occupying ~3%) also significant crops.

With the introduction of the Single Payment Scheme farmers explored the use of other break crops, as previously unsupported crops could be grown without loss of payment (Rural Business Research, University of Cambridge, 2008 to 2013). Despite this there has been a continued decline of non-food/medicinal/fibre crops, although with energy scheme support there was an expansion in miscanthus and short rotation coppice. The removal of set-aside led to an increased area of cereals rather than alternative crops. What has changed is the decline of pea and bean areas in favour of increased oilseed rape. At a time of sustained high world prices for oilseeds, a rotation of winter wheat and oilseed rape became attractive. The sugar beet area has also fallen. In 2000 there were 8,580 growers providing 7,728,000 contract tonnage. The number of growers in 2010 was 4,100 providing 7,586,000 contract tonnage. The reduction in producers has been accompanied by some substantial increases in yield.

FBI overall for cereal farms has been positive rising from £213/ha in 2006 through to £499/ha in 2011, with the agricultural contribution rising from -£118/ha to £213/ha). There was a drop in 2009 back to 2006 levels. Similarly, FBI on general cropping farms has risen from £299 in 2006 through to £501 in 2010 before dropping to £414 in 2011, with the agricultural contribution ranging from -£25/ha up to £240/ha in 2010. It should be noted that despite the generally improving picture for arable production, lower performing farms can still be unprofitable.

Individual gross margins for most combinable crops have improved over time. This reflects the general upward trend in prices which in 2005 were just £65/t to £70/t for winter wheat and which are now around £150/t, driven in part by lower output across the rest of the world.

## Horticultural production

Horticultural crops occupy less than 2% of the agricultural area of the UK and represent only 4% of holdings but in terms of value of production make

an important contribution (Defra, 2013a, 2010).

Farm Business Survey data (Rural Business Research, University of Reading, 2008b to 2013b) shows that the total area of horticultural land generally declined through to 2006, but since then has risen, with a corresponding increase in output, 40% from 2005 to 2011, and by 60% since 2000. However, there were small drops in both field and protected vegetables in 2011. Vegetables grown outdoors (72%, excluding potatoes) occupy the greatest land area of the sector, orchard fruit follows (14%), with outdoors plants and flowers (7%), soft fruit (5.5%) and glasshouse crops (1.5%) making up the remainder. Field-scale vegetables account for 75% of total vegetable output with brassicas, carrots, onions and lettuce the main crops. The key protected crops are tomatoes and mushrooms, and also to some extent cucumbers.

## Organic

Farm Business Survey data focused solely on organic farms (Rural Business Research, Newcastle University, 2013b) shows that the organic area in England increased steadily in the late 2000's, but has reduced slightly since then. The number of organic producers has declined since 2007. Across most farm types organic producers record a lower FBI than their conventional counterparts, with the exception of LFA grazing livestock. Generally organic farm businesses earn less from agricultural output than their conventional counterparts, a little more from agri-environment scheme participation, and the same from diversification and SFP income.

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# ABOUT THIS REPORT

This study was commissioned by the Oxford Farming Conference Directors to provide information for the 2014 conference: Opportunity Agriculture. The report examines the structural change and need for investment for UK agriculture to be sustainably competitive in a decade's time.

## About the Oxford Farming Conference

The Oxford Farming Conference is a registered charity with the mission to "Inform, Challenge and Inspire".

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### Author

**Ian Ashbridge**

Agribusiness Consultant at Bidwells

**BIDWELLS**

### With support from:

**Dr Alison Bailey**

Head of the Farm Management Unit at the University of Reading

**Nick Tapp**

Head of Client Advisory at Craigmore Sustainables

**Jan England**

Managing Director of England Marketing

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