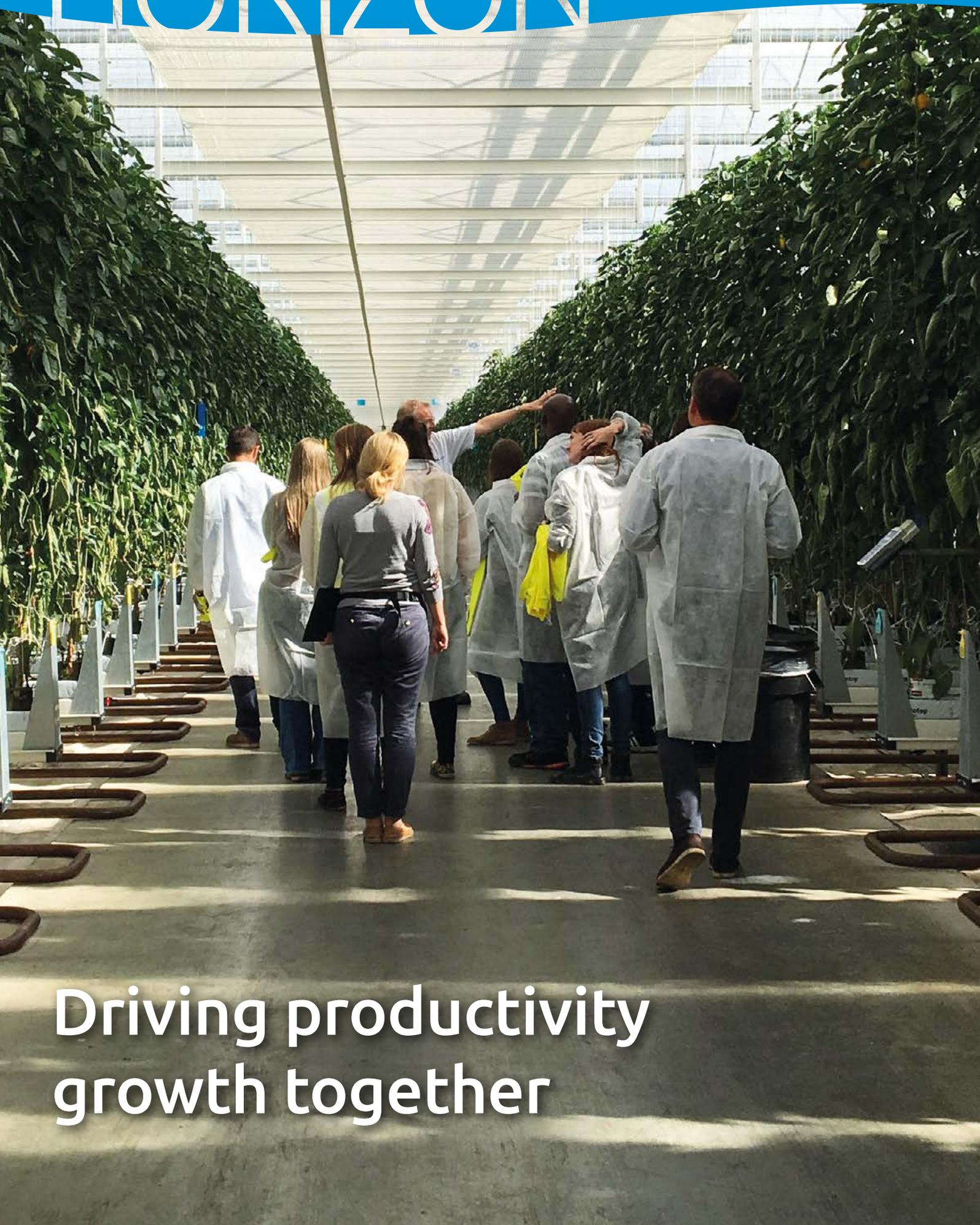


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# HORIZON



**Driving productivity  
growth together**

# HORIZON



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Strategy Officer

## FOREWORD

### Putting productivity growth back on track

The UK undoubtedly has some of the most productive, dynamic and inspirational farming and growing businesses in the world. Yet, as a whole, our industry's rate of productivity has grown more slowly than some of our major competitors. It has now become one of the biggest challenges of our age.

The concept of productivity growth can often seem remote to farmers and is frequently misunderstood. It's not about how much we produce, but about how efficiently we do it. Productivity growth is of critical importance for two fundamental reasons. Firstly, productivity plays a significant part in our industry's overall competitiveness, which is critical if we want to operate in increasingly globalised markets. This matters both because we want our industry to seize market opportunities at home and abroad and we want the industry to become less dependent on direct support as we move away from the Common Agricultural Policy. Secondly, productivity is also a key driver in overcoming the environmental challenges we face. Productivity and environmental responsibility go hand in hand.

This publication is a call to action for industry and government to mobilise, to seize the opportunities presented by Brexit and the recently published Industrial

Strategy and put productivity growth back on track. We outline the key factors that influence productivity growth in agriculture and horticulture, identifying those that may hold us back, together with some of the potential solutions currently being explored by the industry.

Farmers and growers have perhaps the biggest part to play in meeting the productivity challenge. Yet a key theme AHDB and others in industry are asking is: could we support them better? Could we overhaul our fragmented and disjointed innovation and skills pipeline to drive change? If key stakeholders were to join forces and align behind the productivity challenge, could we together kick-start a seismic shift in long-term productivity growth for the good of our environment, consumers and sustainability of the industry?

Our analysis here suggests, united, we could.

“ Farmers and growers have perhaps the biggest part to play in meeting the productivity challenge ”



# DRIVING PRODUCTIVITY GROWTH TOGETHER

**Tackling low productivity growth is the most important economic challenge of our age. The Government's Industrial Strategy marks out the need to drive growth in productivity across the economy as a whole.**

The UK agricultural industry has tremendous potential, with some of the world's best farmers and growers. However, productivity growth in agriculture and horticulture has failed to keep up with that of our major competitors. If our rate of growth had kept pace with the US since 2000, the contribution of UK farming to the rural economy would have been £4.3 billion higher by 2013.

Low productivity growth reduces our industry's long-term ability to compete, grow new markets and improve our natural capital. Understanding what is holding us back and how we can solve the problems is critical to the success of our farmers, growers and food industry.

AHDB's purpose is to inspire our industry to succeed in a rapidly changing world. Taking on the productivity challenge is at the core of our strategy but success depends on the whole industry and government being mobilised around the same goals.

## What do we mean by productivity?

Productivity is frequently misunderstood. It's a measure of the rate at which we convert inputs (such as labour, land, water and energy) into outputs. It is not about how much we produce but how efficiently we produce it. Higher levels of productivity are a result of producing the same or greater output from fewer inputs.

As a result, great productivity is often associated with competitiveness<sup>1</sup> and, ultimately, profitability.

Two indicators are frequently used to measure productivity growth as a whole – total factor productivity (TFP) and average labour productivity (ALP).

TFP measures how effective our agriculture and horticulture sectors are at converting all inputs into outputs. It is a useful and important way of measuring our industry's productivity over time and against key competitors. Across the whole of the developed world, rates of productivity growth have slowed in the last two decades. Nonetheless, the rate of growth in TFP in the UK has fallen behind that of many of our major competitors, averaging 0.9 per cent per year as opposed to 3.5 per cent in the Netherlands, and 3.2 per cent in the USA.

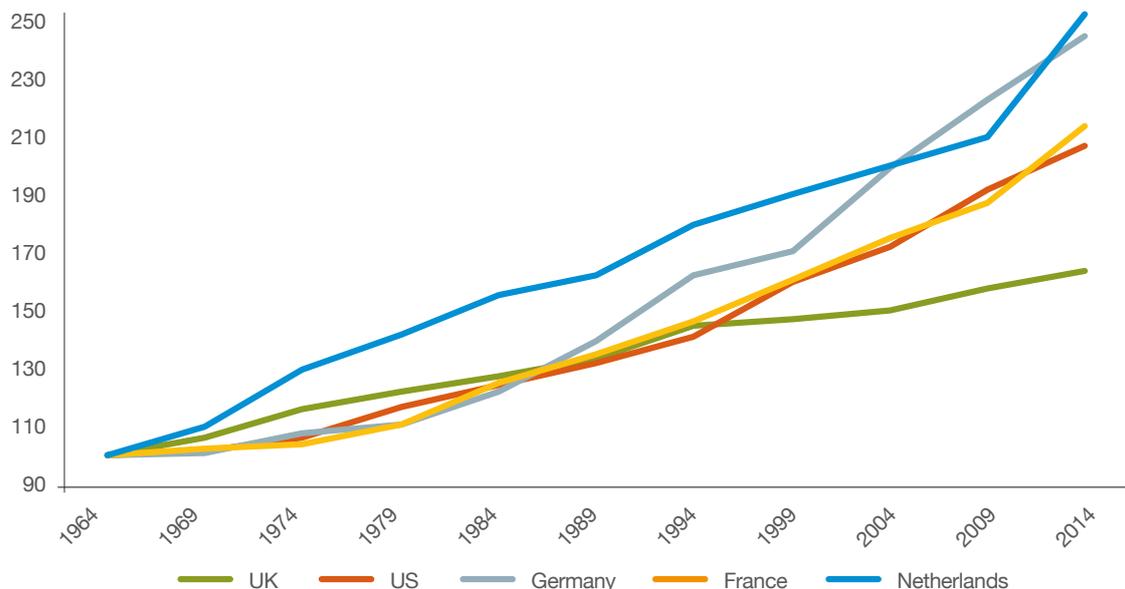


Figure 1. Total factor productivity (TFP) annual growth 1964–2014

<sup>1</sup> Competitiveness could be defined as the ability to sell products that meet demand requirements (price, quality, quantity) and at the same time ensure profits over time that enable a business to thrive (Latruffe 2010)



The downside of assessing TFP is that it is difficult to distinguish individual factors that make the biggest difference to productivity growth. In addition, it is impossible to assess whether specific sub-sectors of farming make a greater or lesser contribution to growth.

ALP measures the amount of output per worker. Although it is a partial measure of productivity, it is a useful way of comparing agriculture's rate of productivity to other sectors of the economy.

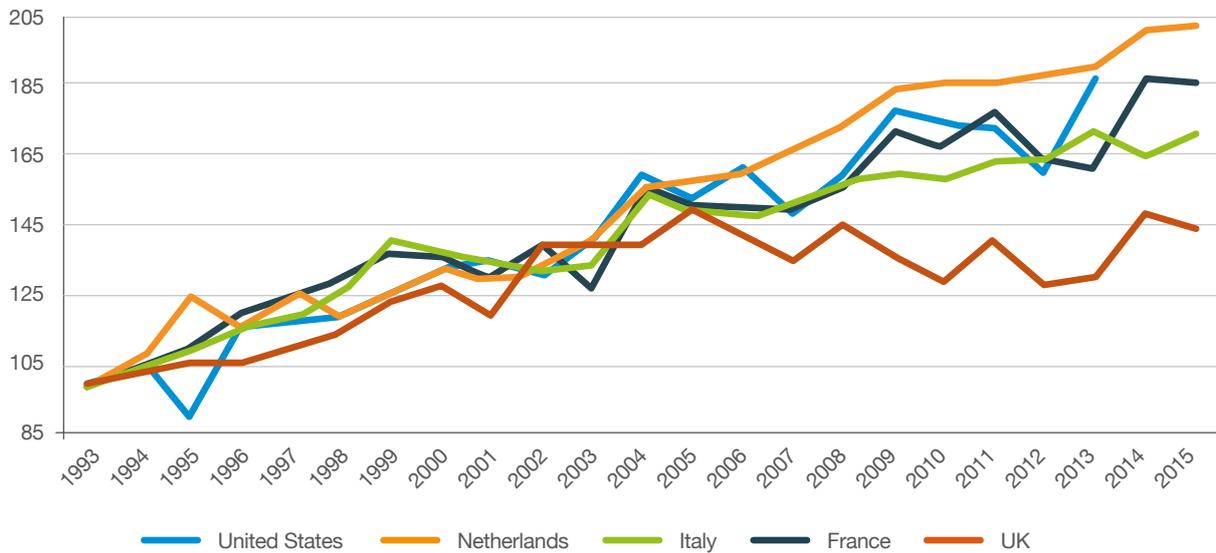


Figure 2. International comparisons of agricultural labour productivity (ALP) performance

### Productivity and the environment

Many farmers and growers will be familiar with measures of productivity such as wheat yield per hectare, milk yield per cow and so on. However, focusing on these specific units of productivity can mask the bigger picture. For example, increasing wheat yields through using more fertiliser may impact on the natural environment. Ultimately, improving our industry's productivity has to play a part in improving the farmed environment. Greater efficiency with which the industry uses resources like energy and water can have an impact on the environment. In addition, good environmental stewardship of our soils, water and air helps to improve the natural capital that underpins productivity growth.





# WHY DOES PRODUCTIVITY GROWTH MATTER?

## Growing our productivity matters for two reasons.

Firstly, it will improve our industry's competitiveness – ie our ability to compete with other countries operating in the same markets as us.

In increasingly global markets, the lower our competitiveness, the less able we are to supply British consumers with high-quality, sustainable British food. Low productivity also affects our industry's ability to seize new market opportunities overseas.

Secondly, a more productive farming sector will benefit our natural environment – techniques that are associated with productivity growth such as precision farming improve the efficiency with which we use natural resources while maximising output.

Failure to address the long-term trend and put agricultural productivity growth back on track will see the UK farming and food industry decline. At a time when the industry needs to seize the opportunity afforded by Brexit, this issue needs to be front and centre of the industry's priorities.

## Drivers of agricultural productivity growth

Various studies have been undertaken in recent decades to assess the factors that appear to be important in influencing changes in agricultural productivity<sup>2</sup>. In our assessment, we can distinguish six significant factors. The critical questions are which of these appears to distinguish the UK from our major competitors and which are the ones that the industry can influence?

**1. Business environment** – This relates to the wider macroeconomic context in which farming and horticulture businesses operate. Factors include regulation, taxation, inflation and growth, planning, and infrastructure. Favourable, stable economic conditions provide a foundation on which businesses can invest and grow.

**2. Natural capital** – This includes topography, soil condition, access to water and climate. These are factors that can place certain physical limitations on the ability to grow productivity. However, improving our natural capital, notably the condition and quality of our soil, can make an important contribution to long-term growth in productivity and sustainability.

**3. Competitive pressures** – Greater exposure to competition spurs businesses to innovate and reduce costs. The UK is characterised by a highly competitive and open food system.

**4. Policy** – Specific policy incentives can play a part in increasing productivity growth through promoting incentives for new entrants, incentivising uptake of new skills and harnessing new technologies. Although it is often argued that direct support payments have hindered productivity growth in the UK, that does not explain why some other EU countries such as the Netherlands have grown productivity at a faster rate than the UK.

**5. Ideas** – The right innovation can push the frontier of productivity growth but it is essential the means exist to transfer and exchange knowledge. According to the OECD, innovation and research and development (R&D) are the main source of agricultural productivity growth in the long run, delivering a return on investment of between 20 and 80 per cent per annum<sup>2</sup>.

**6. People** – Improving the skills of the workforce and the ability to harness them via effective leadership are critical to productivity growth. A correlation exists between business performance and levels of skills and education.

<sup>2</sup> The Organisation for Economic Co-operation & Development (OECD) has produced a comprehensive assessment of factors associated with productivity and competitiveness, drawing from a number of academic sources – see [www.oecd.org/tad/fostering-productivity-and-competitiveness-in-agriculture-9789264166820-en.htm](http://www.oecd.org/tad/fostering-productivity-and-competitiveness-in-agriculture-9789264166820-en.htm)

# WHAT'S HOLDING US BACK?

In our assessment, shortcomings in two factors stand out as holding the UK back relative to our competitors. These are the critical factors we must tackle.

## 1. Ideas

The importance of funding agricultural R&D has been recognised by the industry and government. Investment in agricultural innovation has been bolstered in recent years through the Government's Agri-Tech strategy. Indeed, in 2015, overall investment in agricultural R&D by both public and private sectors in the UK was around £490 million, putting the UK ahead of some of our main competitors in terms of investment as a proportion of agricultural Gross Value Added (GVA).

Public funding of agricultural R&D is still heavily skewed towards blue-sky research, rather than near-market application. This reflects to some extent, the academic

culture driven by the publication of peer-reviewed papers. There are widespread concerns that the organisation of funding for R&D suffers from poor coordination and strategic direction. This diminishes the scale of R&D and its ultimate impact on the performance of our industry.

Assessments of different innovation systems across Europe enable some comparisons to be drawn<sup>3</sup>. Innovation systems across Europe can be seen as weak/strong and fragmented/integrated. Strength reflects the relative investment across industry and government in knowledge exchange whereas integration reflects the extent to which there is coordination across different actors. The UK possesses some relative strength in terms of investment in innovation but the industry is characterised by high levels of fragmentation. There is currently no 'one-stop shop' of industry knowledge which results in the lack of overall coordination, the proliferation of actors and confusion throughout industry.

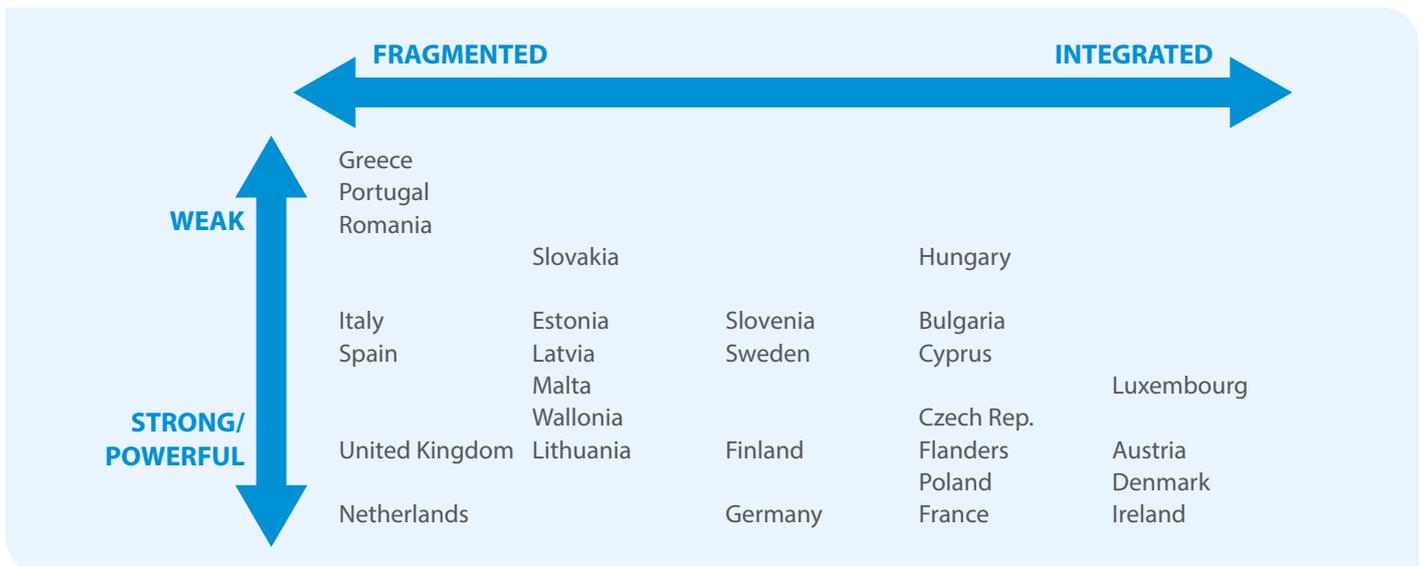


Figure 3. An overview of European AKIS distinguished along a continuum from weak to strong and fragmented to integrated (as of 2014)



<sup>3</sup> [www.proakis.eu/sites/www.proakis.eu/files/AKIS\\_characterisation\\_briefing\\_final.pdf](http://www.proakis.eu/sites/www.proakis.eu/files/AKIS_characterisation_briefing_final.pdf)

## 2. People

As businesses restructure and adapt, their skills will need to evolve, with business and leadership skills becoming more important.

The evidence shows that British farmers and growers under-invest in new skills and training relative to their competitors.

**Table 1. Percentage of farm managers who have undertaken some formal training in selected EU member states**

	2013	2013 (Under 35s)
Germany	68%	63%
France	62%	77%
Netherlands	72%	84%
United Kingdom	32%	48%

Source: Eurostat, EU Farm Structure Survey

In 2011/12, 59 per cent of farm businesses in England were either unaware, had not considered becoming, or were not a member of a Continuous Professional Development (CPD) scheme. Only 25 per cent had a formal business plan which they reviewed annually and only 25 per cent regularly reviewed their budget. Better-performing farmers are more likely to have qualifications, participate in professional development schemes



and undertake risk management practices. In 2013, only 18 per cent of farm managers in England had full agricultural training, with 61 per cent having only practical experience<sup>4</sup>. This may help explain the wide variation in farm business performance and profitability in the UK.

To some degree, the under-investment in skills and training reflects low levels of demand by producers that could be unlocked by generational change. In addition, it also reflects coordination failures in a crowded landscape characterised by limited cooperation between beneficiaries (farmers), providers, accrediting bodies and funders.



<sup>4</sup> Defra, Farm Business Survey 2011–12, Farm Structure Survey 2013

# WHERE DO THE SOLUTIONS LIE?

The overarching question is whether, working together, AHDB, government and the wider industry can create a more coherent and coordinated knowledge and innovation pipeline that better supports our farmers and growers.

## 1. Research and innovation

**Can we bring about a more effective way of overseeing funding to ensure that investment in agricultural innovation is targeted towards addressing the key constraints on agricultural productivity in the UK?**

Can we also create a structure that ensures really effective feedback loops are in place and that beneficiaries themselves have a greater say in setting the strategic direction for funding?

## 3. Coordinated knowledge exchange (KE)

**Can we work better across the industry to coordinate our KE activities? Is there a case for a single coordinating body?**

Experience of other countries shows those with more integrated, coordinated KE frameworks stand a better chance of growing productivity. We see greater coordination to KE as a key part of AHDB's role but we can only do this through partnerships with other providers, such as farm advisors, rural colleges, universities and the supply chain.



## 4. Better skills and training

**How can we encourage the uptake of skills and training on farm?**

It starts by generating demand from farmers and growers to acquire new skills. A national skills framework would provide clear signposting to skills providers and resources so that access and uptake are made easy. Employers should be able to identify training opportunities that fit their needs, responding to the rapidly changing business and technology environment and enabling the tracking and planning of career development pathways with world-class standards and aspirations.





RESEARCH  
INNOVATION

EVIDENCE BASE

VALIDATED KE

Discussion groups

5

Demonstration  
farms

## 2. Evidence base

Establish a one-stop shop for authoritative evidence of what works. A network of seven independent 'What Works' centres and two affiliate members exist across policy areas such as health and policing, which receive public spending of more than £200 billion. The centres enable research commissioners and practitioners to make decisions based upon strong evidence of what works, and provide cost-efficient, useful services. A What Works centre for agriculture and horticulture could assemble, produce and host recommended knowledge and evidence-based guidance, with:

- Scientific rigour, independence and objectivity
- Dynamic review of the available evidence
- Recommendations to connected funding bodies for research and dissemination through multiple channels
- Curricular Development for consultants and advisors and college lecturers

## 5. Farmer-to-farmer learning

**How can we ramp up proven methods of learning to accelerate productivity growth?**

We know that farmers make change when they see it being demonstrated by others. That's why AHDB's Farm Excellence Platform builds on the success of our Monitor Farms programme to create a network of strategic and monitor farms across the country in all sectors. We can work with others to significantly increase the scale and reach of this network.

How can we inspire farmers and growers to measure and manage their costs, achieve marginal gains through understanding key performance indicators and be driven by continuous improvement?

Despite the pretty wide availability of services, only 12 per cent of farmers carried out any benchmarking in England in 2011.



# NEXT STEPS

Our sense is that the industry increasingly recognises the need to dramatically accelerate productivity growth to enable UK agriculture and horticulture to succeed in a post-Brexit world. And we sense the industry is ready to seize the opportunity afforded by the Industrial Strategy to create a new, dynamic partnership with government to achieve this.

The factors associated with productivity are numerous but those countries with the most coherent and integrated innovation pipelines are doing best. Although government has a part to play, we firmly believe that the solutions rest with industry to determine.

## Together...

We can mobilise the wealth of our combined expertise to drive a new, coordinated knowledge exchange network here in the UK.

We can inspire farmers and growers around the importance of productivity, making it less remote and more relevant through tangible measures of performance.



We can drive a culture that puts continuous improvement front and centre of debate across our industry.

We can create feedback loops and new governance structures that give farmers and growers significantly greater ownership and buy-in to research priorities.

We can mobilise research institutes, land-based colleges, accreditation bodies and others to collaborate in delivering lasting change.

For our part in AHDB, we're prepared to think radically about how we work to form the new coalition that's needed across our industry to rival the best in the world.



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