



**MIDLANDS
ENGINE**

FOOD WHITE PAPER

Leading the transformation
of the UK food system from the Midlands

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Introduction

The food system – encompassing food production, distribution and consumption – faces major challenges, as well as opportunities. Food demand is growing and evolving rapidly, food price inflation is impacting households, and there are increasing cost pressures on producers.

There are growing concerns about the health impacts of poor dietary choices and the environmental impact of food production – with over a third of greenhouse gas emissions generated by the food industry.

In the face of these trends, the food industry is demonstrating resilience, ambition, and commitment to sustainable growth and better social and environmental outcomes.

In the Midlands alone, the food and drink industry is investing more than £3 billion a year in expansion, innovation and technology, delivering increased productivity and sustainability, healthier diets, and quality jobs.

Industry is aware of the opportunity, of the need, to accelerate food system transformation and of what needs to happen to enable this, and of the scale of investment required.

Through this White Paper, the Midlands Engine Partnership – including the Midlands Future Food Alliance – has engaged over

100 organisations across the Midlands food system to explore and evidence the potential for sustainable food system growth.

The White Paper presents a clear and compelling case for why and how Midlands industry, academia and public sector partners should come together, with national policymakers in government, to co-create and bring forward delivery of a long-term transformative plan for sustainable food systems growth, with the Midlands at its heart.

It recommends a focus across four themes:

- 1. Investment & agricultural transition**
- 2. Business support & trade**
- 3. Innovation & skills**
- 4. Infrastructure & premises**

The White Paper recommendations are informed and supported by a large body of evidence and insight, including 17 case study examples.

View the evidence base
and case studies here



SCAN ME





Source: Bridge Farm

WHY THE MIDLANDS?

"If anywhere is going to be best-placed to capture the growth, it's where the expertise is. And there's a lot of food expertise in the Midlands."

- Industry consultee

Why the Midlands?

The UK food system pivots on the Midlands.

More food is produced in the Midlands than in any other UK region, and the Midlands is the hub for UK food distribution and logistics.

More than half (52%) of larger food and drink manufacturing companies (£100m+ turnover) and a fifth of agri-tech businesses in the UK are based in the Midlands.

Midlands industry and academia, working together and in partnership with the public sector, are leaders in food system innovation and transformation.

The Midlands food system makes an important contribution to UK trade and investment, generating over £2 billion of goods exports and accounting for over a quarter of foreign direct investment into UK food and drink manufacturing.

Midlands food system at a glance

END-TO-END FOOD SYSTEM



66,000
businesses



857,000
jobs



£32bn
GVA (2020)

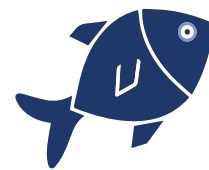
LEADING PRODUCTION CLUSTERS



39%
of vegetable and salad
production in England



41%
of poultry
production
in England



>70%
of fish
processing

TRADING AND INVESTING AT SCALE



£2.1bn
of goods exports
(2022)



26%
of UK FDI in food and
drink manufacturing
(2017–2021)



>£3bn
industry
investment per
year in growth

FOOD SUPPLY CHAIN & INNOVATION LEADERSHIP



LOGISTICS
HUB of the
UK food chain



32%
of Innovate UK
awards to food and
drink businesses
since 2005



45
universities, colleges and
research centres working
in the food system

The opportunity

The White Paper process has identified a consensus among Midlands industry, academia, and wider partners that:

- The Midlands food system is a large, growing, highly innovative and very resilient sector.
- Covid, Brexit and the war in Ukraine led to rapid change, from which the industry is emerging invigorated.
- There is a transformational growth opportunity as geopolitical events lead to reprioritised food systems with more focus on resilience, sustainable production, supply chain efficiency and domestic production.
- Food system transformation offers potential for multiple benefits. These include carbon and sustainability savings from shorter domestic food chains, and healthier foods achieved via reformulation and growing the supply of naturally healthy foods e.g. fresh produce.
- The global climate change agreement at COP28 included food system transformation for the first time.

This White Paper identifies the opportunity to transform the food system via a focused approach across four themes:

- **Investment and agricultural transition:** to unlock investment, including foreign direct investment (FDI), and align new farming programmes with sustainable growth.
- **Business support and trade:** to support businesses, particularly SMEs – including to trade more internationally.
- **Innovation and skills:** to ensure the workforce, skills and innovation needed.
- **Infrastructure and premises:** to unlock investment in modern infrastructure that enables a more efficient, productive, resilient, environmentally sustainable and globally competitive food system.

It is estimated that, through transformative action across the above four themes, there is potential to achieve the following gains in the Midlands alone:

By 2030:



GVA
£6bn



Jobs
9,000



Investment
£2bn / year

By 2040:



GVA
£18bn



Jobs
26,000



Investment
£8bn / year



THE MIDLANDS FOOD SYSTEM

Across metrics such as jobs, value and farmed land, the Midlands has a larger food sector than those of several European countries, including Belgium, Denmark, Sweden and Austria. (Source: Eurostat)

The Midlands food system

The Midlands food system is large, with clusters of larger firms and SMEs extending across the whole region.

Core food production and distribution, which this White Paper focuses on, employs 370,000 people in the Midlands with a GVA of £20.6bn including:

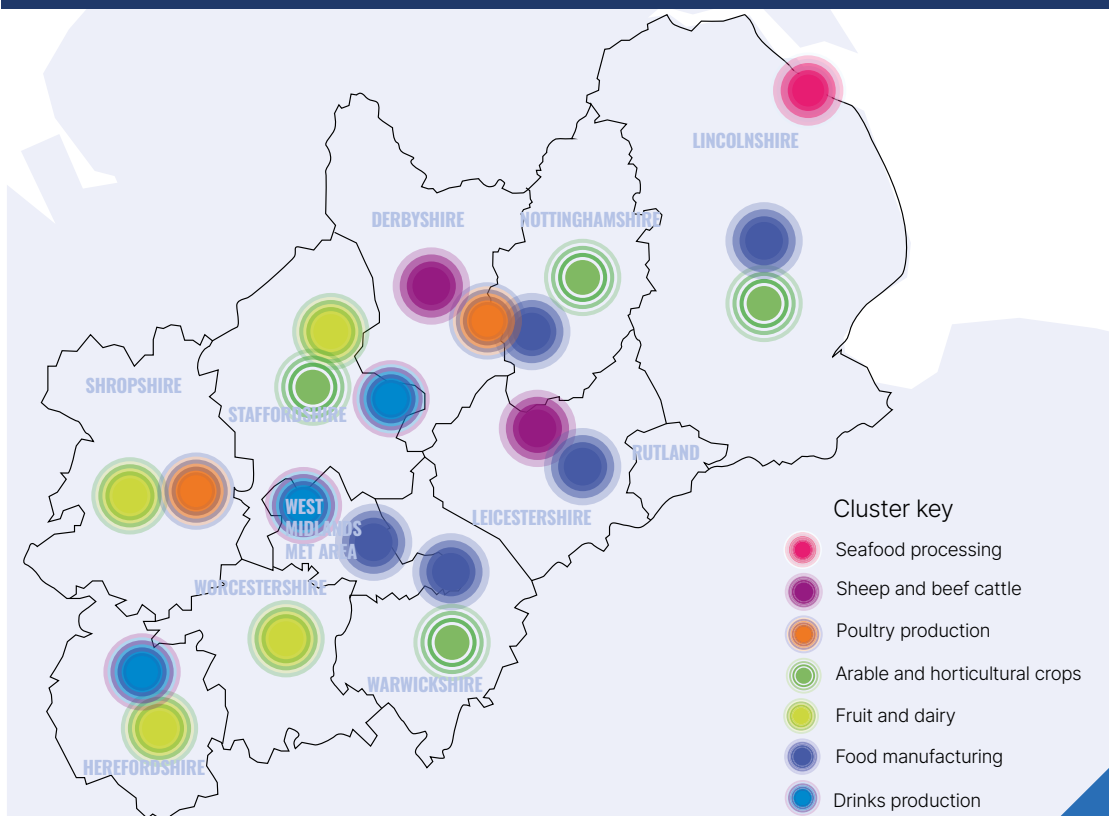
- 214,000 jobs on farms and in food manufacturing
- 159,000 jobs in enabling activities including inputs, distribution and technology

The Midlands food system is embracing the opportunity by focusing on productivity, sustainability and collaboration to deliver safe, nutritious and affordable food, while providing high-quality careers.

Food and drink clusters:

- Food manufacturing clusters in Birmingham, Coventry, Nottingham and Lincolnshire
- Fruit and dairy in Shropshire, Herefordshire and Worcestershire
- Arable and horticultural crops in Lincolnshire and Nottinghamshire
- Sheep and beef cattle in Derbyshire and Leicestershire
- Poultry production in the Marches and East Midlands
- The UK's largest seafood processing cluster in Grimsby

FOOD AND DRINK CLUSTERS IN THE MIDLANDS



View the full
cluster map here



SCAN ME

Agriculture and horticulture production

The Midlands has some of the best soils and climate in the world, as well as world-class farmers and supply industries, including leading agri-tech businesses.

The region's agriculture and horticulture sector is diverse, with strengths in every major crop and livestock enterprise in the UK.

The strong primary production base underpins the region's food manufacturing, trading and distribution sectors, which add value to agricultural production.

The Agricultural Transition is seeking to maintain the industry's productivity at the same time as promoting more sustainable farming and land management systems.

The Midlands industry¹:

- Spends £4.3bn with input suppliers (2021)
- Farms 2 million hectares (4.9 million acres) of farmland, 22% of England's total, on 22,400 farms
- Employs 71,000 staff, 24% of the total workforce on English farms
- Invests £1bn a year in capital equipment and buildings
- Produces £6.4bn of crops and livestock (2021)

MIDLANDS SHARE OF ENGLAND'S FARM OUTPUT

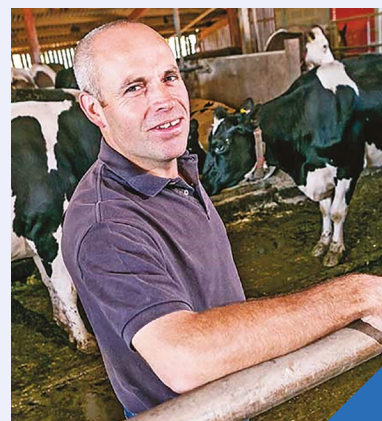
Livestock	Arable crops	Horticulture
41% of poultry	31% of potatoes, field beans and maize	39% of vegetables/salads
21% of beef and sheep	28% of oilseed rape	34% of nursery stock
20% of dairy herd	27% of sugar beet	31% of top fruit
15% of pig herd	26% of cereals	22% of soft fruit
	20% of dry peas	21% of glasshouse crops

CASE STUDY

Herefordshire farming

Hope Ash Farms is a family-run farm in Herefordshire that specialises in mixed turkey, dairy, beef, and cereal farming with cider interests. Hope Ash Farms has put a number of measures in place to investigate their soil health and reduce their use of phosphates. This includes extensive use of soil testing, renewable technology, and working with agronomists and nutritionists to reduce phosphate levels and plan nutrient application for soil and crop health.

More information can be found at midlandsengine.org/resource-library



Source: Hope Ash Farms

1. Calculated from [Structure of the agricultural industry in England and the UK at June - GOV.UK \(www.gov.uk\)](https://www.gov.uk) and [Agriculture in the United Kingdom - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

Food and drink manufacturing

The Midlands has a UK-leading food and drink manufacturing cluster, with a large number of sites owned by many of the largest international food businesses.

Food is the largest manufacturing sector in the Midlands and the UK. More than half (52%) of larger (£100m+ turnover) food manufacturing firms in the UK are based in the region.

The market is very competitive, with UK and international food and drink manufacturers investing in efficiency to maintain global competitiveness.

The industry is leading efforts to deliver traceability, sustainability and health at the same time as increasing productivity to control prices.

Key priorities for manufacturers include:

Responding to evolving consumer demand: e.g. growing demand for healthier diets and balanced nutrition via reformulation and increasing the supply of naturally healthy food, e.g. fresh produce.

Workforce and productivity: through more flexible working patterns and rewards to attract a more diverse workforce, and by investing in automation. This includes the use of AI and digitisation to deliver transformational improvements in labour productivity, with the University of Lincoln the leading UK centre in this technology for agri-food.

Planning and infrastructure: industry competitiveness is critically dependent on infrastructure, including transport networks, grid capacity, and the ability to secure planning for state-of-the-art facilities with the scale and technology to compete globally.

Sustainability: progress on carbon reduction is being required by the supply chain and consumers, with legislation providing longer-term backstops. Water sustainability and 100% biomass valorisation are also major themes for industry, with the potential to deliver substantial productivity and carbon reductions.

CASE STUDY

Seafood sector – low carbon

The Seafood Grimsby and Humber Alliance is facilitating a cross-industry group of stakeholders to develop a decarbonisation roadmap for the seafood supply chain in line with the Paris Agreement. The group is engaging with producers, government, academia and industry bodies to create the sector-wide action plan.

More information can be found at midlandsengine.org/resource-library



Source: Made Great in Grimsby

Midlands food and drink manufacturing at a glance

LARGE BUSINESSES

**52%**

of UK food and drink businesses
with a turnover of over £100m

STRONG GVA



Over **£6 BILLION**
in 2020, 21% of the UK total

INTERNATIONAL BUSINESSES

**20%**

of larger food and drink business in
the region have overseas owners

HIGH GROWTH BUSINESSES

**18%**

of national high growth companies in
food and drink and 17% of food and
drink incorporations (2017–2020)

DIVERSITY



WITH UK-LEADING PRODUCERS

in seafood, cereals, bakery, meat,
beer, spirits, vegetables, salads, fruit,
frozen foods and confectionery

LARGE WORKFORCE

**90,000**

direct employees in food manufacturing

SMEs



A thriving small and medium-sized
enterprise cluster which is adept at
exploiting market developments

CASE STUDY

Mondelez UK

Mondelez UK is owner of the historic Cadbury site in Bournville, Birmingham. In 2021, the company reported in 'Mondelez UK: Making the right Impact' that it invested £272m in UK manufacturing from 2012 to 2021 and in 2021 contributed £932m in total gross economic value to the UK economy. The same year, it announced a switch to 100% renewable energy supply at all UK sites as part of its global commitment to reduce its carbon footprint by 10% by 2025.

More information can be found at
midlandsengine.org/resource-library



Source: Mondelez UK

Food logistics, storage and cool chain

The Midlands has been the leader in national food and drink distribution for decades, exploiting its position at the centre of the UK to deliver efficient national distribution networks. Goods consolidated in the Midlands can be within 125 miles of a port of entry and within four hours of over 90% of UK mainland destinations.

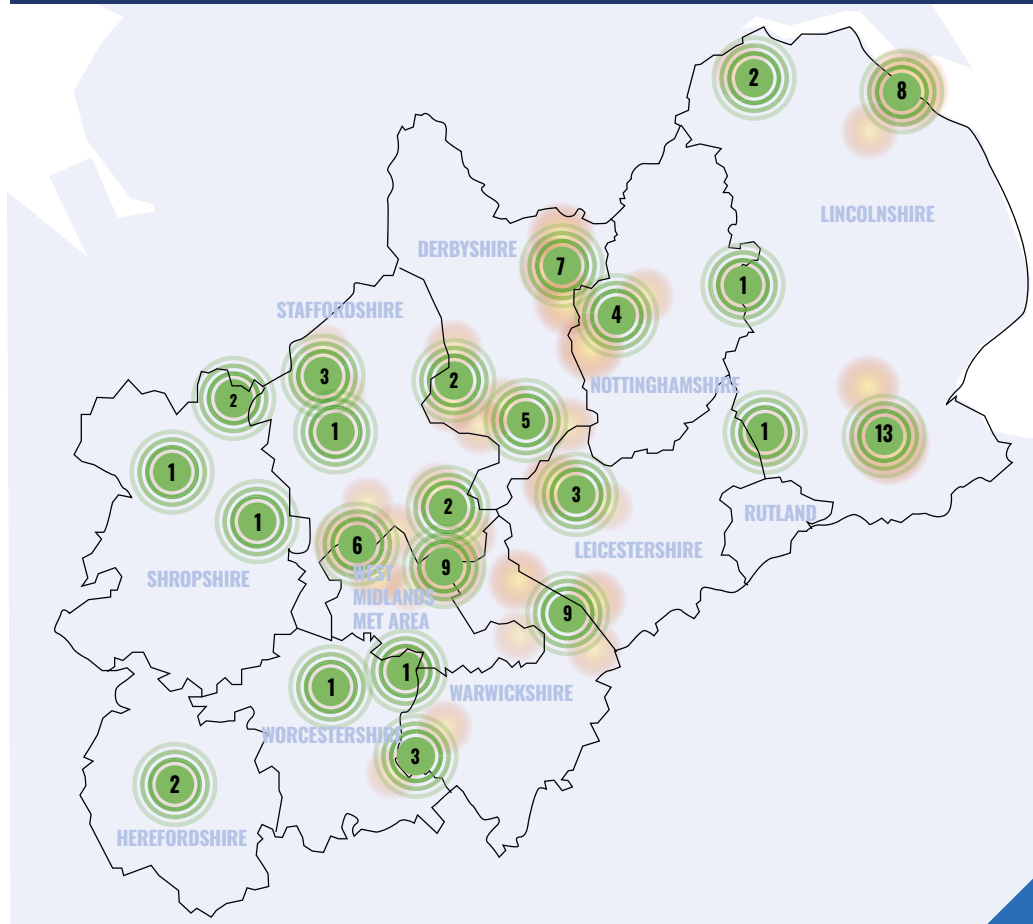
As a result, the region contains many of the largest distribution hubs for agricultural inputs, farm produce, manufactured food products and supermarket distribution centres.

The food system is very dependent on logistics, storage and cool chains to move and store products at every stage of the supply chain. In order for supply chains to be internationally competitive, environmental and commercial efficiency is key.

Growth in online retail, cold storage and shorter food chains is, in turn, leading to growing demand for efficient logistics.

UK food supply is vulnerable to disruption on the 'short straits' at Dover, so the Humber and Wash ports, and other ports with good Midlands transport connectivity, e.g. on the East Coast and Liverpool, could play an increased role in facilitating UK food trade.

MAJOR MIDLANDS FOOD LOGISTICS BUSINESSES AND REGIONAL AND NATIONAL DISTRIBUTION CENTRES



Innovation

The Midlands has UK-leading assets for agri-food system innovation such as the University of Nottingham's Food Systems Institute, Lincoln Institute for Agri-Food Technology (LIAT), Barclays Eagle Farm Lab, Harper Adams University and the Midlands Hub for Agri-EPI.

The region also has world-class advanced manufacturing assets, such as the Manufacturing Technology Centre and the National Space Centre, with the potential to link food system innovation to technology in aerospace and automotive.

Midlands universities are leading the way in developing technology to fuel the future agri-tech and agri-food economy, in collaboration with corporate partners like Morrisons, McDonalds, and PepsiCo, and SME networks.

Despite substantial investment, no UK centre currently has the scale or breadth of world-leading competitor centres e.g. Wageningen University & Research in the Netherlands.

Given its existing asset base, the Midlands is well-positioned to deliver this scale through stronger collaboration. and with the right investment.

CASE STUDY

Mildtech and Harper Adams

Mildtech is an innovative SME based in Telford developing a ground-breaking drying technology to preserve food while maintaining its nutritional value and reducing waste. Mildtech has collaborated with Harper Adams University to conduct analysis and research on the nutritional benefits of the drying technology and is currently working with the university to design and build a higher capacity machine.

Further information can be found at midlandsendengine.org/resource-library



Source: Mildtech

CASE STUDY

Nottingham Food Systems Institute

The Institute brings together researchers from across disciplines and works with industry and policymakers to deliver solutions to transform the food system, from production and processing through to transport, consumption and waste. Its mission is to ensure access to palatable, healthy and sustainable food for all, while protecting and regenerating the Earth's natural resources in the face of climate change.

Further information can be found at midlandsendengine.org/resource-library



Source: Nottingham Food Systems Institute

Skills and workforce

The food system needs a reliable supply of new employees and skills to facilitate technology adoption and sustainable growth.

There is a very diverse workforce in the industry, with companies positively seeking to attract workers from non-traditional backgrounds by increasing rewards.

However, across the industry and at all levels, labour supply continues to restrict growth.

The key areas in which new skills are needed mirror the areas for innovation: responding to market demand; labour productivity; efficient resource use; and lower environmental impact.

The adoption of labour-saving technology and environmental efficiency gains is constrained by a shortage of engineers. Most skills gaps are at Levels 3–7, but the industry offers fast progression and excellent rewards for skilled staff.

Industry reports that, while strongly backing apprenticeships, current standards and restrictions on how the

Apprenticeship Levy can be used are not well-aligned with industry needs.

In the past, Midlands education providers worked collaboratively to develop skills provision, with courses then delivered by a network of local providers. This model has real strengths, combining economies of scale to develop courses with local delivery, which is particularly important for Continuing Professional Development.

The development of research, innovation and design engineers is being supported by a series of undergraduate and postgraduate courses offered by regional universities. Over 11,000 university students graduate each year from Midlands universities in agri-tech-related fields. There has been a sizeable increase in PhD students supported by Centres for Doctoral Training and Doctoral Training Partnerships working at the cutting-edge of agri-food sector growth.

CASE STUDY

University-led networks

Midlands universities have led multiple partnership projects at regional and national level to support agri-food skills and innovation. These have included: the Internet of Food Things Network led by University of Lincoln; a Doctoral Training Partnership (DTP) led by the University of Nottingham focused on agriculture, food security, bioscience and biotechnology; and a Centre for Doctoral Training (CDT) in Agri-Food Robotics led by University of Lincoln. A new CDT in AI for agri-tech, the SUSTAIN programme, is due to recruit the first of 60 PhD students in early 2024, led by the University of Lincoln.

Further information can be found at midlandsengine.org/resource-library



Thorvald Platform testing inside a polytunnel, Riseholme Park (Source: University of Lincoln)

Trade and investment

The Midlands exported £2.1 billion worth of food and drink in 2022, and the region is a major driver of foreign direct investment, accounting for 26% of FDI capex in food and drink manufacturing in the UK between 2017 and 2021.

The Midlands' agri-tech, food tech and knowledge base offers major export opportunities. The global agricultural sector is 125 times larger than the UK's and the global food chain is more than 50 times larger².

Competitive UK production and global trust in UK food, means our businesses believe that many more major export opportunities exist. For businesses, exports deliver enhanced profits, spread risk and secure growth.

In particular, accelerating the commercialisation of regionally developed agri-food innovation can lead to substantial export potential, as the technologies needed in the UK are in growing demand globally.

In common with the UK as a whole, the Midlands is a net food importer, with imports used for livestock feed, as products sold to consumers, or as ingredients in manufactured foods.

With the UK food trade gap growing to a record £32 billion in 2022 – the third largest in the world³ – and a rapid rise in the cost of imported food (up 29% to March 2023 compared to a 15% rise in domestic prices⁴), the desire for import substitution is strong.

The Midlands' strengths and offer to foreign direct investment in agri-food R&D are presented in a recently published investment prospectus produced with the region's universities.

CASE STUDY

UK Food Valley

The UK Food Valley programme was created by Greater Lincolnshire LEP to bring together all of its work to promote and invest in the food chain. Overseen by the industry-led Food Board, the Food Valley promotes clear strategic objectives for Lincolnshire's food system, promotes the investment opportunity and leads the creation of partnership projects in the food industry.



Source: UK Food Valley

Further information can be found at midlandengine.org/resource-library

View the 'Invest in UK R&D: Universities and agritech in the Midlands' prospectus here



SCAN ME

2. Calculated from <https://www.fao.org/faostat/en/#data>

3. <https://www.fdf.org.uk/fdf/resources/publications/trade-reports/trade-snapshot-h1-2023/>

4. <https://www.ons.gov.uk/economy/inflationandpriceindices/articles/foodandenergypriceinflationuk/2023>



REALISING THE OPPORTUNITY

The Midlands has strengths across four themes - investment, business and trade, innovation and skills, infrastructure and premises – which act as ‘building blocks’ for system transformation.

Realising the opportunity

The Midlands food system has important strengths that act as 'building blocks' for system transformation.

These can be considered in terms of four themes:

Themes	Midlands strengths and 'building blocks' for food system transformation	
Investment	Major investments to grow food production e.g at SmartParc, Magnavale, Mondelez, Pepsico, Samworth Bros, Food Enterprise Parks, NI Park and Melton Mowbray Stockyard	A thriving food culture with thousands of start-ups, high growth artisan producers and local specialities e.g. Stilton cheese and UK-leading food events e.g. Ludlow Food Festival
Business & trade	Home to national HQs of the National Farmers Union, British Frozen Food Federation, British Growers Association and many others with a commitment to growing a more sustainable UK food system	The UK's foremost advanced manufacturing and engineering centre leading on new technology adoption in agri-food systems to deliver productivity gains
Innovation & skills	45 universities, colleges and research centres focused on the food system, including food manufacturing and formulation, waste streams, agri-tech, automation and digital supply chains	373,000 employees in commercial food production and distribution supported by UK-leading food system skills, education and technology providers
Infrastructure & premises	UK's largest concentration of agriculture and large-scale UK and international added-value food producers, food distribution and storage and food innovation centres and parks	All of England and Wales is accessible in one driving day, enabling efficient supply chains and making the Midlands home to the UK's largest food logistics cluster

Investment

The Midlands is achieving high levels of investment in the food industry.

However, the global investment market has become increasingly competitive, including with greater use of incentives by nations.

Midlands industry and partners are keen to work with national policymakers to develop a more streamlined, stable and globally competitive investor offer, capable of engaging a wider range of potential investors with food system opportunities.

This should include support for investors to: secure premises and planning approval;

secure workforce supply and talent; access the innovation ecosystem; and be supported by globally competitive incentives.

The Harrington Review (2023) recognised the benefits of regional FDI-driven programmes, citing the example of the West Midlands Combined Authority's Business and Tourism Programme. Elsewhere in the region, High Potential Opportunities have been effectively used, including the Automation and Robotics in Food Processing HPO in Greater Lincolnshire.

CASE STUDY

Samworth Brothers

Leicestershire is home to seven Samworth Brothers' businesses. The business is estimated to contribute £218m to the GDP of Leicester and £300m to the GDP of Leicestershire, supporting 7,500 jobs in the city and over 11,200 across the county.

Further information can be found at midlandsengine.org/resource-library



Source: Samworth Brothers

Recommendation 1

Midlands partners, DBT and the Office for Investment (OfI) work together to develop and deliver a more globally competitive investor offer to attract more UK and international food system investment.

Agricultural Transition

The agricultural and horticultural sector is going through a period of major change as a result of the Agricultural Transition, on top of addressing longer-term challenges such as climate change.

Sustaining the farm production base is critical to the Midlands and wider UK, with each job in agriculture in the Midlands supporting a further three in the supply chain, and each £1 of agricultural GVA leading to value-added activities worth £5 to the wider economy⁵.

DEFRA regional profiles⁶ show the East and West Midlands lost 41,000 hectares of farmland from 2018–2022, or 2% of the total in 4 years.

If farmland in the Midlands and elsewhere continues to be lost to development, rewilding, energy production, infrastructure and environmental schemes, this will reduce farm production with major negative economic impacts, unless the lost production is replaced sustainably.

UK production is in a position to compete internationally on carbon due to efficient and highly productive farming systems.

The Midlands has the potential to replace high-carbon imports with lower-carbon UK production by embracing productivity and renewable energy e.g. replacing imported fresh produce.

In addition, more farms are expected to embrace the potential of added value food processing and marketing as the Agricultural Transition impacts the sustainability of small commodity producers.

Action is required in the following areas:

- **Productivity:** the Agricultural Transition means agricultural production has to be globally competitive, increasing the need for productivity growth and cost control through innovation, skills and investment.
- **Replacing lost production:** productivity growth is also needed to offset land lost to development and environmental uses, such as nature restoration programmes, which reduce the area of farmland.
- **ELMs and farm investment:** there is a need to accelerate the uptake of Environmental Land Management schemes (ELMs) and agricultural productivity programmes e.g. the Farming Innovation Programme and Farming Investment Programme capital grants.
- **Mitigation and adaptation to climate change:** a step change is needed in the low-carbon transition and climate change adaptation in the period to 2040.

CASE STUDY

Bridge Farm

Bridge Farm is a 75-acre greenhouse development in Spalding, with a linked bioscience business. It produces food, ornamentals and pharmaceutical products using renewable energy. Water for the site is supplied by capturing and storing rainfall from their roof.

Further information can be found at midlandsendengine.org/resource-library



Source: Bridge Farm

5. Calculation based on Defra data: <https://www.gov.uk/government/collections/agriculture-in-the-united-kingdom>

6. <https://www.gov.uk/government/statistics/agricultural-facts-england-regional-profiles>

Government can help the agricultural and horticultural industry move forward by:

- **Using DEFRA's Farming Investment Programme** to deliver reshoring opportunities, e.g. supporting the co-location of greenhouses and fish farms with sustainable heat sources to promote the circular economy and reduce the carbon intensity of a healthy UK diet.
- **Addressing blockages in the planning system** which slow down the adoption of agri-tech and the creation of globally competitive farm infrastructure e.g. on-farm renewable energy generation.
- **Ensuring a stable tax regime** so the industry invests with confidence, including the tax treatment of multi-generational family businesses which form the backbone of the agricultural industry.
- **Supporting managed immigration** to meet agriculture's current workforce needs, while helping the industry transition to more automated systems. This transition will take 10 years, but can lead to technology exports and support the growth of UK farm production.
- **Addressing grid capacity** constraints so that farms wishing to expand or invest in renewable energy are able to do so – both supplying increased electricity capacity and enabling export of surplus renewable energy generation.
- **Increasing the visibility of future grants** by moving to transparent multi-year programmes with funding calls announced at least a year in advance to allow businesses to prepare robust bids.

CASE STUDY**'Reverse Coal' at Pollybell**

As a large organic salad producer on drained peatland in Nottinghamshire and North Lincolnshire, Pollybell is acutely aware of the need to reduce its carbon footprint and has created the 'Reverse Coal' project so that it can radically decarbonise farming on the 2,000ha Lapwing Estate whilst sustaining food production.

Further information can be found at midlandsengine.org/resource-library



Source: Pollybell Farm

Recommendation 2

Accelerate the Agricultural Transition through sustainable farming and investment programmes, pro-growth infrastructure and fiscal policies for long-term farm investment.

Business support

Publicly-funded support for the establishment and growth of SMEs has enabled thousands of food and drink SMEs to set up, grow, adopt new technology and exploit new markets.

SME support is more effectively delivered through long-term programmes, with support evolving as needs change.

The Midlands has developed UK-leading support infrastructure, including the Food & Drink Forum, Food Innovation Centre Nottingham, the National Centre for Food Manufacturing and Made Smarter projects.

However, public sector funding has fallen significantly in the shift from ERDF to UKSPF, leading to a major reduction in the availability and breadth of support.

Urgent action is needed to protect the specialist support infrastructure for food and drink SMEs that has been built up over the years, and to ensure that critical enablers of SME-driven food system transformation and growth are in place – including:

- **An increased supply of modern food-grade start-up and grow-on space:** on food parks and in food enterprise zones, including access to peer networks.
- **Specialist business advice:** on distribution, raising finance, technology, new product development, marketing and branding, sustainability, food quality and audit systems.
- **Supportive public procurement:** enabling SMEs to access public sector contracts individually or via food hubs. Standards for public procurement must balance price with rewards for wider public benefits through dynamic purchasing systems.

CASE STUDY

The Food & Drink Forum

The Food and Drink Forum is a well-established support network for SMEs in the food and drink sector across the East Midlands with a successful track record over 25 years. It also runs food parks and provides services in other areas of the UK. Over the years, it has delivered multiple programmes, using EU and UK funding, to help SME food and drink businesses – such as the Harrison & Griffiths Bakery – to grow. A key challenge for the Forum is securing long-term stable funding.

Further information can be found at midlandsendengine.org/resource-library



Southglade Food Park
Source: The Food & Drink Forum

Recommendation 3

Create a long-term, single, coordinated support offer for food and drink businesses that builds on existing regional centres and expertise, delivering integrated business support and skills.

Trade

A pro-growth food systems trade policy needs to focus on:

- **Exports:** support to ease access to core markets in Europe and growth markets e.g. in Southeast Asia. This includes support for agri-food technology exporters, with support for this sector benefitting both UK-based food producers and delivering high-value export growth.
- **Imports:** support for food producers to import products not available in the UK, e.g. white fish, to enable more added-value food production in the UK.
- **Import substitution:** for products the region can produce sustainably and competitively with the right investment and support, for example to deliver sector growth in fruit, fresh produce and increased protein supply.

CASE STUDY

Dyson Farming

Import substitution can be delivered through investment in modern UK production systems. Dyson Fruit Farm in Carrington near Boston is a world leading greenhouse soft fruit producer, using heat and CO₂ from an on-site anaerobic digestion plant for sustainable strawberry production. Robots help to address labour productivity and sophisticated control systems ensure production is economically and environmentally competitive.

Further information can be found at midlandsengine.org/resource-library



Dyson Farming's glasshouse
Source: Dyson Farming

Recommendation 4

Support the development of trade (import and export) in food and drink products and the technology used in the industry.

Innovation

The UK food system does not benefit from the long-term public-private R&D partnerships seen in New Zealand and the Netherlands, both of which have seven-year agri-food co-investment plans co-created with industry.

The potential exists to learn from these international examples to build a food systems innovation partnership and a single large, multi-year Collaborative R&D programme to:

- **Create more commercialised innovations:** making UK food companies more competitive, through improved access to cutting-edge technology and delivering increased exports of agri-food technologies.
- **Create stronger industry and knowledge partnerships** leading to more collaborative R&D projects with the scale to attract Tier 1 global companies in priority areas such as AI, machine learning and automation.
- **Create a critical mass of industry demand to attract more tech start-ups:** aligning innovation demand across the food system to create the industry 'pull' to attract new technology into the industry, for example by building on the Barclays Eagle Lab AgriTech Bridge programme.

Future innovation needs in the industry include:

- **Consumer needs:** responding to emerging consumer and market needs for new foods and sustainable production.
- **Labour productivity:** the UK has the lowest uptake of automation in the G7 - 10% of the rate in Germany⁷ - creating a pressing need to develop and demonstrate productivity-enhancing technologies in 'factory of the future' facilities.
- **Carbon and the circular economy:** resource use and industrial symbiosis is needed through more focus on whole food systems thinking e.g. to recycle 'waste' heat into other processes at the same time as delivering low carbon technologies.

CASE STUDY

Agri-EPI Centre

At the forefront of the UK's agricultural technology revolution, the Agri-EPI Centre is a driving force in the Midlands' agri-food sector. Working with 260 members and a Midlands Hub at Harper Adams, Agri-EPI supports agri-tech development across the industry.

Further information can be found at midlandsengine.org/resource-library



Source: Adobe Stock

Recommendation 5

Midlands partners to work with UK Research & Innovation (UKRI) to co-create a globally competitive food systems innovation partnership and multi-year Collaborative R&D programme for food system innovation.

7. Based on <https://ifr.org/industrial-robots>

Skills

To fuel innovation and the adoption of new technology, it is critical to invest in a sustainable workforce supply and embrace new skills.

This needs to be delivered both by bringing in new entrants with the skills needed and by upskilling the existing workforce.

This requires a step change in workforce supply strategy and linked skills investment to facilitate growth including:

- **Managed migration** to meet workforce gaps until innovation in technology can close the workforce supply gap.
- **STEM**: an increase in the percentage of students studying STEM subjects and
- continued development of the region's postgraduate provision (MSc and PhD) in agri-food technology and systems.
- **More flexible apprenticeships**: allowing the levy to be used for modules and credit accumulation models.
- **Productivity and knowledge exchange (KE)**: enabled by regional KE and skills development to drive technology adoption and facilitate higher wages to attract and retain the best workers.

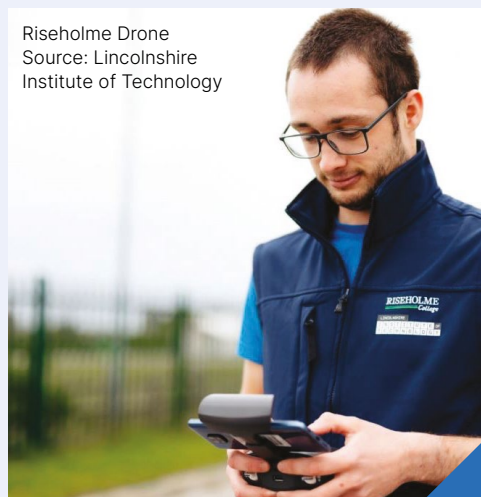
CASE STUDY

Lincolnshire Institute of Technology

The Lincolnshire Institute of Technology is a LEP-wide programme led by the National Centre for Food Manufacturing, working with the area's further education colleges, to increase take-up of STEM courses amongst 16- to 18-year-olds. With a focus on the food and engineering sectors, it is working to increase student numbers to 1,700.

Further information can be found at midlandsengine.org/resource-library

Riseholme Drone
Source: Lincolnshire
Institute of Technology



Recommendation 6

Industry, academia and government to co-design a supportive policy framework, including devolved arrangements, focused on flexible apprenticeships, migration and skills investment to support technology adoption.

Infrastructure

Internationally competitive food systems need investment in energy, water, transport and digital infrastructure. However, the Midlands suffers from a lack of infrastructure investment, which is restricting food system growth.

The following are required to enable food system transformation and sustainable growth:

- **Energy:** access to affordable and renewable energy. Supply chains and policy will put increased emphasis on carbon footprint reduction, and it is essential that the industry leads the response. Current grid capacity constraints mean that many food businesses cannot expand or install renewables.
- **Digital:** access to superfast broadband and 5G. While good progress has been made in much of the Midlands, too many farms, and some towns, still lack competitive digital infrastructure, restricting productivity growth and new technology adoption. Digital systems also underpin new technologies in energy, water and transport.
- **Water:** access to sustainable water supplies. The Midlands is well-placed to capture, store and recycle water on farms or in food production sites, but needs more supportive planning and regulation to facilitate this.
- **Transport:** long-term investment in the Midlands' road, rail freight and port infrastructure is critical to enable:
 - » **Decarbonisation** of food transport through new fuels, as road freight will remain a key component of future food supply chains. Modal shift could also unlock the potential of sea and rail freight, reducing emissions for bulk long-distance food transport, as recognised in the Midlands Connect freight routemap, but needs long-term commitment.
 - » **Cool chain growth** as demand for cool chain solutions is rising as chilled and frozen foods are used to manage inventory, extend shelf life and drive supply chain efficiency. New, large, centralised cold stores can deliver this growth economically and with lower carbon footprints.
 - » **Last mile** as consumers embrace online food sales and home delivery.

CASE STUDY

Magnavale

With facilities already located in the East Midlands, cold store operator Magnavale is currently developing a new UK-leading 101,000 pallet cold store just off the A1 at Easton, near Grantham. When operational, it will have class-leading energy efficiency and use robots to load and unload the store.

Further information can be found at midlandsendengine.org/resource-library



Source: Magnavale

Recommendation 7

Increase infrastructure investment in the Midlands as the UK's food production and distribution hub via devolved regional challenge funds for faster, lower-cost progress.

Premises

The food system, from farming to food manufacturing and distribution, handles millions of tonnes of inputs and products a month, and depends on large sites and buildings to be competitive.

In common with other countries, the UK, including the Midlands, is seeing more developments of this scale, and the growth of \$1billion+ agri-food investment funds.

Furthermore, there is appetite within the region to develop more specialist food parks that enable the industry to grow sustainably, based on innovative models, such as that being developed by SmartParc SEGRO in Derby.

To enable the supply of modern premises that farms and food companies need to grow sustainably, there is a need for an enabling planning and regulatory system that can:

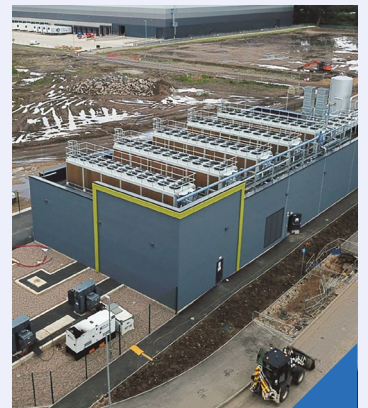
- **Identify large sites for food chain use** to help de-risk investment decisions and incentivise large-scale brownfield developments for food chain use.
- **Prioritise development of sustainable infrastructure** for food manufacturing, cold storage, distribution and modern agricultural facilities, such as reservoirs and onsite renewable generation.
- **Support integration of power, digital and water grids** to enable low-carbon, sustainable production
- **Link food growth sites to road, rail and ports** enabling streamlined food logistics which are globally competitive for domestic food production and trade.

CASE STUDY

SmartParc SEGRO Derby

SmartParc in Derby is a 110-acre development on a 155-acre brownfield site, developing 2 million sq. ft. of food chain space with the first tenants operational in early 2024. SmartParc offers access to shared energy, workforce and expertise to create modern, highly efficient facilities for food manufacturers and supply chain tenants. The Derby parc aims to generate sales of £1.5bn per annum with a GVA of £430m once fully occupied. SmartParc has ambitions for a network of parcs across the Midlands.

Further information can be found at midlandsendengine.org/resource-library/



Smart Parc Energy Centre
Source: SmartParc

Recommendation 8

Develop a more enabling planning system and premises supply strategy so food and drink businesses can access the premises and facilities they need to grow sustainably e.g. SmartParc model.



Centre for Dairy Science Innovation, Sutton Bonington
(Source: University of Nottingham)

RECOMMENDATIONS

The food system needs the confidence to invest that would be provided by a clear strategic plan for food system growth, supported by longer-term programmes of support.

Recommendations

The Midlands has the industry base, expertise, scale and ambition to deliver a substantial market-led opportunity to increase domestic food security at the same time as growing the economy.

To deliver this opportunity, the food system needs the confidence to invest that would be provided by a clear strategic plan for food systems growth, supported by longer-term programmes of food system support.

Midlands industry, academia and public sector partners are already working together to create the conditions for sustainable food system growth via a 'triple helix' partnership – including:

- Coming together in the Midlands Future Food Alliance as a single food system voice.
- Proactively investing in the production capacity and sustainability of the food system.
- Creating partnerships for collaborative projects for innovation, skills and facilities supply.



EPSRC Centre for Doctoral Training in Agri-Food Robotics: AgriFoRwArdS
Source: University of Lincoln

Now, Midlands industry and its partners want to accelerate this work, coming together with national policymakers to co-create and bring forward delivery of a transformative plan for sustainable food systems growth focused on three overarching objectives:

- **Taking a long-term strategic view of food security:** encouraging investment in growth areas, such as healthy foods, to deliver wider societal benefits and growth.
- **Delivering productivity growth and sustainability in parallel:** focusing on production and distribution efficiency, waste reduction and innovative 'win-win' technologies.
- **Building on and expanding existing regional partnerships:** encouraging vertical and horizontal food system partnerships between businesses, the research base and public sector organisations to collaborate on larger, longer-term projects.

This will build on existing partnerships such as the Food and Drink Forum and the UK Food Valley, uniting them around a common plan.

Current food system support is characterised by multiple, often short-term, disconnected projects. Longer-term programmes deliver more efficient interventions and build industry confidence.

A single programme model would build on a 'triple helix' partnership united around the common goal of sustainable food chain growth, led by the industry and facilitated by the public sector and knowledge base.

A transformative plan for sustainable food systems growth

Midlands industry, academia and public sector partners come together, with national government, to co-create and bring forward delivery of a long-term transformative plan for sustainable food systems growth, with the Midlands at its heart, that is overseen by a multi-stakeholder board and focused on the following themes:

Investment & Agricultural Transition	1 Investment: Midlands partners, the Department for Business & Trade (DBT) and the Office for Investment (OfI) working together to deliver a globally competitive investor offer to attract more UK and international food system investment	2 Agricultural Transition: accelerating the Agricultural Transition through sustainable farming and investment programmes, pro-growth infrastructure and fiscal policies for long-term farm investment
Business support & trade	3 Business support: creating a long-term, single, co-ordinated support offer for food and drink businesses, built on existing regional expertise and delivering integrated business support and skills	4 Trade: supporting the development of trade (import and export) in food and drink products and technology used in the industry
Innovation & skills	5 Innovation: Midlands partners working with UK Research & Innovation (UKRI) to co-create a globally competitive food systems innovation partnership and multi-year Collaborative R&D programme for food system innovation	6 Skills: industry, academia and government co-designing a supportive workforce supply plan, including devolved arrangements, focused on flexible apprenticeships, migration and skills investment to support technology adoption
Infrastructure & premises	7 Infrastructure: increasing infrastructure investment in the Midlands as the UK's food production and distribution hub, via devolved regional challenge funds for faster, lower-cost progress	8 Premises: developing a more enabling planning system and premises supply strategy so that food and drink businesses can access the premises and facilities they need to grow sustainably e.g. SmartParc model

Thank you to our food system consultees and partners

The White Paper has been developed in consultation with over 100 food system organisations from industry, academia and the public sector across the Midlands, including:







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