

# Cultivating a World Leading Agri-Food Sector in the west the UK

## Agri Tech West Response to the Industrial Strategy Green Paper

### Introduction

The Agri-Tech West Alliance (ATWA) has been formed jointly by four LEPs. In our response we outline the development of the initiative, its potential, the assets in the area and the potential of a sector deal.

The alliance builds on discussions with a range of partners including;

- LEP Partners - Stoke and Staffordshire LEP, Cheshire and Warrington LEP, The Marches LEP and Worcestershire LEP while currently exploring further involvement by Gloucestershire First LEP, Coventry and Warwickshire LEP and Wales.
- Higher Education Partners - Harper Adams University, Chester University, Keele University and relationships with Universities of Aston, Birmingham, Staffordshire, Worcester
- Further Education College Partners - South Staffordshire College, Reaseheath College, Pershore College and relationship with Heart of Worcestershire College
- Sector Business Representative Partners – AHDB, NFU, CLA, ADAS
- Industry and Business ambassadors such as JCB, Muller, Dairy Crest, Cogent, Kanes Foods, Sun Valley Foods (owned by Cargill), NWF Agriculture
- Relationships with Innovate UK and Four Centres for Agricultural Innovation
- Relationships with DIT, BEIS, DEFRA, DWP and DCLG
- Discussions with partners in the Midlands Engine.

A Prospectus developed from the findings of a commissioned study, spearheads sector business growth across common LEP priorities in Agri-Food (agriculture, horticulture), Food-Drink, Agri-Technology and Bio-Technology sub sectors in response to research and soft market testing with businesses.

A unified, integrated strategy links end-users to innovators across multiple sectors, will encourage research, innovation and investment, and deliver increased productivity in the area's agricultural, horticultural and food processing industries.

The agri food sector is the largest manufacturing sector in the UK and needs to be recognised as such. From farm to fork, employs 14% of the UK's workforce, contributes nearly 7% of GVA and has considerable international trade growth potential. Leaving the EU will provide many opportunities for the sector. The agricultural and horticultural base across the four LEP areas is diverse with business activities revealing the area to be a microcosm of the UK sector as a whole. The area's wider agri-food supply chain has strengths in chemicals (fertilisers), meat processing, fruit and vegetable processing, food and drink production, and machine manufacturing. Internationally renowned agri-food businesses are based in the area because of its agricultural and horticultural base, supply chain specialisms, good connectivity, and access to labour markets and consumers. There is a common ambition to instigate industry-applied research and technology development projects.



Recent consultation with the region's business community has identified a clear steer towards:

- fostering sector collaboration to strengthen knowledge, expertise, capacities, skills of entire supply chains, from corporate to SMEs and micros
- making the link with specific sector skills recruitment, retention, attraction for indigenous populations and nurturing growth across all sizes and scales of businesses in one sector
- maintaining a watching brief on allied sector development i.e. innovative manufacturing and engineering developments which would enhance agritech/biotech
- innovating, applying and piloting research in response to business-led requests and requirements

The ATWA is facilitating business-led sector innovation through collaboration and technology by:

- connecting agri-food businesses with the best available experts, applied research facilities, technological innovations, training providers, and suppliers
- providing a practical test-bed for business products and services as well as delivery of Government policies and programmes which can then be rolled out nationwide.
- encouraging greater collaboration, particularly within and across the business and education sectors to reduce duplication and add future value and competitive edge to the ATWA and UK agri-food economy
- drawing increased inward investment and recognition to this sub-region which reflects the whole range of UK AgriFood/AgriTech/BioTech interests
- co-ordinating business-led delivery programmes and projects across ATWA by sharing and exchanging knowledge and expertise
- developing and adopting a shared ATWA strategy and delivery framework to drive SME innovation and economic growth
- providing strategic leadership and establishing a heightened profile, brand and awareness raising platform for the geographical area
- connecting the ATWA area ambitions and opportunities to the Government's emerging Industrial Strategy
- providing an effective collaborative vehicle to engage UK Government Departments and agencies

The ATWA is a purposeful, creative, dynamic and collaborative sector business-led mechanism. It anchors itself as a "locality sector hot-spot" which resonates with its clusters of sector businesses and innovative opportunities. Its aims and aspirations align with the Midlands Engine, Northern Powerhouse and other sector clusters elsewhere in the UK.

### **Context for the Agri Tech/ Agri Food Sector**

The needs of consumers and supermarkets are increasing in volume and range. In particular, food security is becoming increasingly important in terms of boosting UK production, together with securing stable food supplies, reducing reliance on imports, mitigating against price volatility and consolidating domestic and international trade. The agri-food sector is therefore of paramount importance to the UK in cultivating world-pioneering economic growth.

The agri-food sector is diverse and combines agriculture and food manufacturing, and is enormously important to the UK economy, worth £108 billion and employing one in eight people. It is a rapidly evolving sector with many businesses already investing heavily in new technologies. ATWA recognises that there is a need to champion this technology and bring concepts to market; build a

skilled workforce and bring a new 'look' to the sector; and facilitate business growth through knowledge transfer, business collaboration, inward investment etc.

The ATWA region has a strong agri-food sector and well-established supply chains. It has a broad agricultural and horticultural base, as well as an abundance of local and international food and drink manufacturers, a reputable engineering and technology sector, and globally renowned land-based and STEM (science, technology, engineering and mathematics) education and research institutions. These strengths, together with its location next to some of the UK's largest metropolitan areas and its excellent connectivity, make it a prime location for science and innovation in the agri-food sector.

The ATWA prides itself as the region where solutions to problems in the agri-food sector are found, and whilst we are regionally based, we have a national and international offer. The region comprises clusters of diverse high-growth, high-tech agri-food businesses, along with leading sector education and applied research institutions. ATWA operates at an optimum scale to provide strong leadership and focus for the sector in the west of the UK.

### **Champion Technology and Bring Concepts to Production**

Our business consultations show that in order to succeed they need greater support to allow them to innovate and where possible, take their innovations to market. ATWA wants to see more accessible opportunities for businesses to work in clusters and/or in collaboration with education/research institutions, to continue to evolve and make advances, confirming the region's place at the fore of the UK agri-food sector. ATWA's land-based and STEM education institutions already work individually and collectively with businesses to share ideas, exchange knowledge, and undertake joint research and innovation projects. Our businesses have already invested heavily in robotics, remote sensing, genetics, GPS and other emerging technologies, making them more profitable, efficient, safer and environmentally friendly. Targeting investment and providing catalysts to help businesses with developing new technology is essential to improve productivity and competitiveness.

ATWA welcomes the proposal to create clusters of research across the UK and sees itself as a clear contender for the agri-food sector, supporting not just local businesses but businesses throughout the UK.

### **Build a skilled workforce and create a new 'look' to the agri-food sector**

In all ATWA's discussions with agri-food business, skills have emerged as one of the most strongly held concerns. At the primary end of the food supply chain, agriculture and horticulture growers are facing significant problems in recruiting labour, which is likely to be intensified post-Brexit. Labour provision carries a cost which will continue to increase through uptake of the Living Wage and Apprenticeship Levy. Businesses want action taken through focused interventions to address the costs of labour provision and mitigate the effects of shortages in skilled labour, particularly of seasonal workers, which will continue to enhance resilience in the sector. Machines cannot fully be a substitute for traditional people skills, such as picking, problem-solving, creativity and collaboration. ATWA seeks to marry and integrate these two dimensions of need to aid competitiveness.

Perceptions of the agri-food sector in the UK need to change if the UK is to remain a global leader. Enhancing STEM, digital and business skills will be vital, along with ensuring that the sector attracts talented, ambitious and entrepreneurial people. In addition to attracting new entrants, ATWA also wants to see more support for ongoing professional development in the industry to ensure that every business has the opportunity to take advantage of new technologies, systems and processes.

### **Facilitate business growth through knowledge transfer, business collaboration, inward investment**

Science, innovation and investment is constantly needed for the UK agri-food sector to keep ahead of world competitors. ATWA partners are working (individually and collectively) with businesses to translate existing technologies, research and scientific know-how into practical applications that support business growth. Through ATWA, businesses have the opportunity to engage with any ATWA partner, thereby optimizing the region's wider offer and ensuring all food supply chain businesses receive the best possible support. ATWA is committed to building on this but also supporting those businesses that have not yet embraced science and innovation. More support to help the businesses that have been slow to adopt new technology is vital; not only with this reduce the gap between the most productive businesses and the less productive businesses, it will drive competition and ensure that the UK sector can move and develop as one, reinforcing our global reputation.

### **Potential Sector Deal**

The ATWA area has huge potential in offering:

- a significant “place-based cluster” in the United Kingdom to test, shape and deliver the Sector Deal and Industrial Strategy alongside other place-based localities
- business-led applied research, driving innovation and a real testing ground for the future agri-food development and delivery i.e. use of sensors, smart technologies, drones, robotics, artificial intelligence, automation
- non-agriculture sectoral strengths that are or could be applied to agricultural and horticultural uses from allied sectors e.g. machine manufacturing (Automotive/Aerospace) chemical processing, and software design (Cyber-Security).
- well-established and highly regarded further and higher education institutions, some specialising in land-based activities and all with expertise in engineering, manufacturing and the sciences.
- a Cross-LEPs programme of existing agri-food (and supply chain) commitments and emerging initiatives, offering significant opportunities for the next generation of food growers and producers, reducing the impact on the environment while pushing the UK towards the forefront of global agricultural innovation.
- a “Growth Hub Plus” for the agri-food sector by creating Agri-Tech Specialist Gateways, building on industry sector and research strengths i.e. collectively co-ordinate and consolidate a consistent specialist advice, grant availability and innovation support to SME businesses and access a range of local, national and international knowledge and expertise
- collaborative sector working with cross-Government interests i.e. DIT, BEIS, Defra, DCLG, DWP to shape and deliver the Industrial Strategy
- delivery via existing ESIF and Growth Deal programme funding and opportunities to help shape future Post-Brexit national programmes and Sector delivery
- collaborative sector working towards Midlands Engine, Northern Powerhouse, Wales and other UK locations

The ATWA work demonstrates that common threads as well as diverse, unique characteristics can be found in the sector. Generic solutions can support improved productivity and competitiveness but it is also important to recognise that place-based business clusters who offer their own unique characteristics, features and opportunities that require more sophisticated strategic frameworks and solutions.

ATWA partners are keen to meet Government and Sector representatives in order to further ATWA's contributions in shaping and delivering the Industrial Strategy, and more specifically cultivating World Leading Agri-Food Sector in the heart of the UK.

### **Other Opportunities from the strategy**

Opportunities and measures that ATWA wishes to see in the Industrial Strategy, which will help it to contribute to increasing productivity and improving people's lives are:

- Greater, more tangible opportunities to lessen the risk of developing ideas and/or prototypes into practical and commercially viable products available on the open market.
- Recognition and opportunities to identify technologies across a plethora of industry sectors in order to transfer or translate them into practical technologies which support the agri-food sector, even though it might not have been originally designed with the sector in mind. The obvious example are drones, which were designed for a military purpose but are now increasingly being considered as an essential piece of kit for future food producers.
- Experts with an understanding of the potential of the agri-food sector to help lobby on the sector's behalf within Government departments, financial institutions, overseas investors and export markets. ATWA partners have considerable technological know-how but they need help to export and/or translate this technology and know-how in order to secure further inward investment.
- Clear and timely assurance that programmes of support to address issues (in a post-Brexit world) will be available to the agri-food sector, particularly around migrant workers, agricultural subsidies, environmental protection, etc. Agri-food businesses will seize the initiative to shape their sector if they have a clear sense of direction and Government backing.
- Recognition that the agri-food sector is not a homogenous entity but fragmented into a multitude of sometimes emerging and fast-growing sub-sectors. Therefore, support and interventions that come out of the Industrial Strategy will have to span a far more diverse supply chain.

## Appendix One - The Agri-Tech West Alliance Assets and Sector deal supporters

### Agri-tech Growth and Resources for Innovation (AGRI)

The AGRI project was launched in the Marches LEP area in April 2017 and seeks to address the barriers in the agri-food industry by providing an innovation support service, focussed on companies involved with agri-tech, food manufacturing and logistics. Run jointly by Harper Adams and Aston Universities, the project seeks to support 90 agri-tech/agri-food businesses with developing plans to innovate and at least 16 businesses to introduce a new process into their operations or to have improved or developed a new product. These outputs will be delivered by April 2020.

### Dairy Crest

Dairy Crest, known for market-leading brands such as Cathedral City, Clover, Country Life and FRijj, has relocated its R&D facility to Harper Adams' Food Innovation Centre. In order to help deliver Dairy Crest's 10% year-on-year growth, its scientific research, technology and product development teams are tapping into Harper Adams' skills and expertise in science, innovation, product design and development. This unique collaboration won the 'Most Innovative Contribution to Business-University Collaboration' category in the Times Higher Education (THE) Awards.

[www.dairycrest.co.uk](http://www.dairycrest.co.uk)



### Agri-Tech Innovation Park in Newport

£9.3million of Growth Deal funding has been secured to build a new agri-food Enterprise Park in Newport, providing premises for start-ups, small businesses and larger companies. The Park, which will create 950 high value, full-time jobs, will also offer training and higher level skills development, and collaboration with related local businesses and Harper Adams University. The Park has also kick-started delivery of more than 1,000 essential new houses, including starter homes in the local area, which has seen significant inward investment in recent years.

### The Rural Enterprise Academy at South Staffordshire College

Located on the Rodbaston Campus, the Rural Enterprise Academy inspire future rural entrepreneurs. Whether students want to work on the planet or help to feed the nation, the Academy wants to grow the

Opened in September 2012, the Academy is the first dedicated land-based academy and is sponsored by Veolia and the National Farmers' Union. It offers a range of experience for young people from Year 9 to Year 13 (13 to 18 years) including GCSEs, BTECs and A' Levels courses with opportunities to link learning to environmental sustainability and land-based subjects. The range of courses seeks to equip students with the transferable and marketable skills needed for a wide range of sectors related to agriculture and the food supply chain.

[www.ruralenterpriseacademy.com](http://www.ruralenterpriseacademy.com)

The Rural Enterprise Academy



**Agri-tech Innovation Hub**

Harper Adams University secured £17.5 million from the Government's Strategy for Agricultural Technologies to create an Agri-tech Innovation Hub. The Hub provides a national focus for collaborative applied research and development between industry and academia; and a demonstration of new technologies and their integration into precision farming systems, including their economic benefits through the network of satellite farms. Initial areas of interest include cutting edge technologies such as automated vehicles (drones), new instrumentation to monitor both operations and in-field performance of cropping systems, as well as sensing and imaging technologies to monitor livestock production in areas such as product quality and health.

[www.harper-adams.ac.uk/initiatives/national-centre-precision-farming](http://www.harper-adams.ac.uk/initiatives/national-centre-precision-farming)

**Thornton Science Park**

Thornton is a major research and innovation hub, offering a unique blend of industry, innovation and academia. For students of the University of Chester's Thornton offers the opportunity to study in a world-class facility and work with leading science and technology employers on-site and throughout the local area. For businesses, Thornton not only encourages open innovation but the opportunity to work with leading academics in the field of Renewable and Alternative Energy sources, Electronic & Electrical engineering, Chemical engineering, Mechanical engineering and Natural Sciences. In addition, the University of Chester's established programmes in Mathematics, Computer Science, Cyber Security, Project Management and Gaming, add another dimension to the business engagement opportunities across a variety of sectors. [www.thorntonsciencepark.co.uk](http://www.thorntonsciencepark.co.uk)

**National Centre for Horticultural Excellence**

A new National Centre for Horticultural Excellence, Pershore College, Worcestershire (Royal Horticultural Society and horticulture specialist expertise) is tackling the current skills shortages and knowledge that constrain the sector's growth, productivity, competitiveness in an increasingly technologically driven industry. Active industry participation, practical demonstration and shared learning is being fostered. The facility is developing small-scale applications demonstrating innovation, flexibility and accessibility of technology to local growers. It comprises an Agri-Tech Applications Laboratory, live field-based experimentation and a demonstration facility which will provide a 'test bed' for the development of solutions for growers and demonstrate the scalability of those solutions

**MicoTek**

MicroTek worked with Reaseheath College and used their Food Centre to create a technique to pasteurise opaque liquid food streams at ambient temperatures as a highly energy efficient alternative to thermal pasteurisation or chemical preservation. The MicroTek PurePulse™ system delivers very high intensity ultra violet disinfection well in excess of any conventional Low Pressure system. Due to its design, it can offer product warranties on certain applications of between 40,000 and 50,000 hours. The system is now installed at the Centre and is available to other businesses that wish to trial their liquid foods such as cider, beer, wine, fruit juices, sugar syrups, sauces and soft drinks. [www.reaseheathfoodcentre.com](http://www.reaseheathfoodcentre.com)



### Midland Pig Producers

Midland Pig Producers has designed and created a sustainable, profitable pig production process called Green Circle. The process comprises:

- a pig building that which is designed to be odourless; an underground biogas plant that is much smaller than its contemporaries;
- fertiliser that is odourless and low in volume;
- pig feed that is grown locally and milled using energy produced from the biogas plant, with surplus energy used to run machines and transport feed and pigs.



The only carbon / nitrate leaving the 'Circle' is the pigs themselves, so Midland Pig Producers bring back an equal amount of kitchen waste from the consumers of the meat in order to complete the circle.

Midland Pig Producers provides the local arable grower with seed, fertiliser and fuel, with the cost of the raw materials reflected in a buy-back contract. Midland Pig Producers and the local arable grower are subsequently immune from volatile feed, fuel and fertiliser prices, and cash flow benefit is obvious. [www.mppfoston.com](http://www.mppfoston.com)

### Aviagen

As a primary turkey breeder, Aviagen are aware of their responsibility for both their customers and the environment. It sees investment and innovation as key to product development, producing turkeys of the future. Aviagen utilise a diverse range of genetic lines for development of its turkey breeds. In addition, it holds a large gene pool capable of meeting future needs. The company has applied innovative technologies to create a balanced breeding goal, including health and fitness traits, alongside selection for key production traits such as reproduction, growth, feed conversion, and yield. [www.eu.aviagen.com](http://www.eu.aviagen.com)

