Inspiring Innovation across the agrifood sector
Who we are
The UK Agri-Tech Centres are a unique collaboration between Government, academia and industry to drive greater efficiency, resilience and wealth across the agrifood sector.

- Joining-up existing research excellence
- Investing in new innovative resources and research
- Addressing challenges that no one part of the agrifood sector can address alone
- Positioning the UK as a global leader in sustainable food production

Who we work with
Together, the four Centres serve the needs of everyone involved in the UK agrifood sector: from farmers to advisors and the supply trade pre-farmgate; scientists to suppliers; processors to retailers.

Our reach extends across all key industry players, trade associations and government. We are a shared voice to inform and influence industry priorities and ensure important industry issues are addressed.

Why work with us
The Centres are essential catalysts for change. We provide a gateway for companies and individuals seeking access to the very best science, expertise and technologies - stimulating new research, practice and technology for the agrifood sector. We are also building on existing knowledge, stimulating new research and technology as well as the transfer of knowledge across the whole sector.

Each Centre has its own unique focus; offering capabilities that can lead the world in delivering sustainable food and farming solutions.

Agri-EPI
Engineering, precision & innovation for sustainable food production.

Agri-EPI supports and delivers research, development, demonstration and training on precision agriculture and engineering to maximise the agri-tech sector’s contribution to sustainable food production and supply. Agri-EPI’s vision is to support the development and growth of innovative solutions with scientifically robust and commercially viable solutions to help farmers and agri-food business become more sustainable and profitable.

CHAP
Advancing crop productivity for future generations.

CHAP is a catalyst for change, bringing together researchers, industry and government to accelerate the identification, development and adoption of innovative agri-tech crop solutions to transform UK and global farming systems sustainably.

CHAP achieve this by building multi-disciplinary collaborations that collectively design interventions, investing in open access facilities for translational research and engaging in demonstration and knowledge exchange.

Agrimetrics
The World’s largest source of pre-linked, analysis-ready agricultural data.

Agrimetrics have created the first Agrifood Data Marketplace: a place to find, manage, and monetise food and farming data. They provide a safe and equitable place to share and monetise data. Their cutting-edge linked-data technologies makes managing and connecting data simpler and more affordable. ISO27001 accredited and a Microsoft Partner.

CIEL
World-leading livestock research alliance.

CIEL is the UK’s livestock innovation Centre and the sector’s point of access to some of the best livestock research capability in the world, covering all the core livestock species. CIEL is at the heart of a collaborative network of industry Members that span the livestock supply chain. CIEL brings industry together with research excellence, helping everyone involved in producing food to do so profitability and sustainably.
IMPACT TO DATE

New research capability to drive greater efficiency, resilience and wealth across the UK agrifood sector

INVESTED

OVER £100M
SECURED EXTRA MATCH FUNDING
EXTRA £42M

DEVELOPED

55 NEW RESEARCH ASSETS

At the heart of an interconnected network of knowledge, experience and new ideas

INDUSTRY MEMBERS

>250

RESEARCH PARTNERS

23

Improving productivity, profitability and sustainability of food production in the UK and worldwide

INVoLVMEnT IN

>247 PROJECTS

PROJECTS WORTH

£59M

Leading industry engagement across the supply chain, from field to fork

PRODUCERS

SME
INNOVATORS

MULTI-
NATIONALS

Supporting the UK bioeconomy sector worth

£220BN
13.6% GVA
5.2M JOBS

Helping to deliver the UK's Industrial Strategy by transforming food production

CURRENT VALUE OF ISCF PROJECTS

£9M+

CURRENT NUMBER OF ISCF PROJECTS

13
Phenotyping and Soil Health Facility

The world’s first glasshouse designed to study plant-soil-water systems at field scale in a controlled environment with above and below ground phenotyping.

This CHAP facility within Cranfield University and developed in partnership with Agri-EPI Centre replicates the complete cropping cycle from tillage operations, through drilling, plant establishment and crop development, to harvest and post-harvest. It offers an ideal environment to test sensors, diagnostics for the evaluation of soil and crop health, and crop protection products and crop stimulants to improve productivity and resilience.

The Phenotyping and Soil Health Facility is open to research organisations, agri-business, farmers and agronomists to explore how soil management can impact soil and crop health and protection.

Key benefits include:

- Precision control and monitoring of soil, water, crop and climate conditions
- An understanding of how soil management practices affect persistence and transmission of biotic threats: a key element for the development of more effective control products

CropMonitor Pro Digital Agronomy

A decision support tool for crop pest and disease control.

CropMonitor Pro is a brand-new decision support system that provides field-level risk prediction for a range of pests and diseases affecting winter wheat, winter oilseed rape and potatoes. It is an extension from the popular Defra-funded regional service (Crop Monitor) and uses ~20 years of historical data to model diseases risks with up to 85% accuracy.

Developed by CHAP in partnership with Fera Science Limited, the new tool supports growers’ decision making and helps to optimise pesticide applications to improve crop yield and quality through regular alerts and notifications. The CropMonitor Pro system estimates the risk to the crop by modelling the complex relationship between weather, crop growth stage, management practices and disease or pest characteristics and displays results in a simple, easy-to-use traffic light system for predictions up to four days ahead.

- Determine whether or not a spray is required
- Judge when a spray should be applied for maximum effectiveness
- Understand any impact that the expected weather conditions will have on spraying efficacy

Vertical Farming Development Centre

Two identical growth rooms with full climate control.

CHAP’s Vertical Farming Development Centre, at Stockbridge Technology Centre, enables growers, food producers and researchers to determine how different technologies in a controlled environment impact the economics of LED vertical farming.

Crops are grown using a fully recirculating hydroponics system, with all inputs and outputs being monitored. The aim is to develop technologies to reduce costs and maximise profits for a wide range of crops potentially on a large scale. The twin compartments allow comparisons of the impact of different climate control strategies and nutrition schedules on energy sustainability, yields and economics.
E-Flows Mesocosm
Europe’s most advanced edge-of-field water assessment facility.

Challenge
Crop protection products are central to agricultural productivity but the number of products available to UK growers continues to reduce as a result of regulatory pressure and increasing resistance. The development of new products that meet regulatory requirement is a key priority for the industry.

Semi-field regulatory risk assessments using a mesocosm approach have often been considered unsatisfactory as there is a tendency for results to be too variable to constitute scientific robustness. The source of this problem is that the mesocosm units used are small volume static or recirculating chambers, which tend to provide insufficient habitat for organisms and have limited capacity to buffer physico-chemical change. Even with regular bailing, these mesocosms have a within-experiment effective volume of <5000 litres per experimental unit, and manual water changes can increase the stress to the organisms.

Action
The Edge of Field Waterbody Safety Assessment Facility (E-Flows) mesocosm, developed by Fera Science Limited in partnership with CHAP, enables environmental testing of plant protection products to meet the most stringent regulatory standards, helping to introduce a wider range of more effective products to market more quickly and to help farmers tackle threats to their crops.

The E-Flows mesocosm is the first of its type with fully flow through streams that can receive chemicals at the treatment rates predicted to occur in the environment, accurately reproducing a real environment to evaluate new products. In mimicking the natural environment, the E-Flows mesocosm provides substantial advantages over smaller static mesocosms. A larger moving body of water that can better buffer physico-chemical change provides a more stable habitat for a range of test organisms, generating more robust data.

Impact
The end result is that the risk assessments will be based on more realistic data, likely to lead to greater choice of products for the agricultural sector to support more sustainable food production. Industries that require data for the fate and aquatic ecotoxicology of the products they manufacture or use, can also benefit from the E-Flows mesocosm.

"enables environmental testing of plant protection products to meet the most stringent regulatory standards"
Investing in innovation

Supporting livestock production

Large Animal Research and Imaging Facility (LARIF)
Supporting animal health & welfare and safeguarding human health by helping to tackle food-borne infections and developing strategies against antimicrobial resistance.

The LARIF, developed by the University of Edinburgh in partnership with CIEL, allows users to benefit from unparalleled facilities alongside a wide range of expertise in farm animal production, health and welfare – including infectious diseases and zoonoses, vaccines, genetics and genome editing, imaging, radiology, medicine, surgery and critical care.

Research within the LARIF supports the One Health framework, recognising the link between human, animal and environmental health. It offers exceptional specialist facilities for in-depth studies of all major farmed livestock, including: containment areas for work involving infectious pathogens; facilities to produce genetically altered animals; environmentally controlled units suitable for behaviour and welfare studies; imaging, surgical and critical care facilities for large animal models of disease; and development of medical technology that will benefit both humans and animals.

South West Dairy Development Centre
Driving the development and adoption of new technologies to help UK farming become more sustainable, efficient and profitable.

The Agri-EPI South West Dairy Development Centre (SWDDC) is a state-of-the-art, 180-cow dairy unit in Somerset, the heart of the Southwest milk field.

The Centre, a fresh vision for the UK dairy industry, provides a truly innovative environment for the development, testing and demonstration of new technologies and techniques to support sustainable, efficient and high health and welfare milk production.

The housing design, which reflects the best of the natural cow environment while providing automated protection from changing weather conditions, optimises the wellbeing of the cattle, and includes enrichment elements such as rotary brushes, state-of-the-art lighting and cubicles.

Precision Grassland Platform
Helping the UK livestock industry optimise the use of grassland in dairy and beef production systems.

The CIEL-supported Precision Grassland Platform at the Agri-Food and Biosciences Institute (AFBI) in Northern Ireland enables detailed studies of the grazing environment, testing new innovations in grassland management and tracking the interactions from the soil, through the plant to the animal and the resultant meat and milk produced. A better understanding of these interactions will drive improvements in both productivity as well as environmental sustainability. Highly instrumented, technology and data driven, the platform is the first of its kind in the Northern hemisphere due to its complexity and high level of integration.

See more innovation at www.agritechcentres.com
National Pig Centre
The UK’s largest and most advanced facility for research into pig nutrition, behaviour, welfare & health and production systems.

Challenge
Globally, pork is the largest meat industry. As the human population continues to grow, pork production will need sustainable intensification. Led by the University of Leeds, the PigSustain project is using a multi-disciplinary, integrated systems approach to model and assess the resilience of the UK pig industry to ensure any future intensification is balanced with improved animal health & welfare.

Action
PigSustain is unique in that it brings together many areas of research that would not normally be done together in the same project, from economics and business, health & welfare, computer vision, to social research.

The project includes developing a cutting-edge, automated computer vision system capable of collecting real-time information 24/7 on health, welfare and productivity on-farm. The system has been developed with a view to making it commercially available, with outputs for vets and farmers to understand the changes that have taken place within pens over a period of time.

The advanced surveillance system developed within the PigSustain project is one of the many technological features to be trialled within the new National Pig Centre, developed by CIEL in partnership with the University of Leeds. The facility permits round the clock monitoring of pig behaviour and welfare at all stages of production and allows early detection and intervention of any issues arising. The centralised integration of multi-stream data inputs from across the production cycle enables detailed analysis both in real-time and retrospectively, to enhance productivity and trial new standards for UK herds to ensure sustainable intensification is balanced with the highest welfare standards.

Impact
Over and above improved animal health & welfare and productivity gains, a sustainable pig industry means consumers can continue to benefit from high quality, nutritious food that is readily available at an affordable price. The project also presents an opportunity to educate and inform the wider public about the issues around intensification of agriculture, climate change, and animal health and welfare, and how it could potentially impact on them in the future.
Centre for Plasma in Agrifood (AgriPlas)
‘Wonder technology’ to transform food production and halt AMR.

AgriPlas is the first of its kind in Europe. Located within the Institute for Global Food Security, Queen’s University Belfast, it is a dedicated research facility for the agrifood industry focusing on potential uses of the antimicrobial properties of cold plasma for livestock healthcare & biosecurity, food hygiene and shelf-life extension. Its focus is not only pioneering research into cold plasma but also the potential transformation of commercial food production.

It’s thought that scaled-down cold plasma technology could be available for use outside of laboratories, eg. by food producers or on farm, in as little as three years’ time.

Cold plasma research, particularly in the agrifood space, is still a relatively young field which is increasingly being seen as a potentially revolutionary ‘wonder technology’. It’s believed this is the first time a European university is focusing research on agrifood, agriculture and veterinary scenarios.

Postharvest Cold Storage Facility
Keeping food fresh, tasty, diverse and affordable.

This unique facility offers an effective way to, not only extend the shelf-life of fresh produce, but also discover more about pre-harvest agronomy’s impact on long-term fruit and vegetable storage.

Developed to explore, understand and investigate the impact of different storage atmospheres and relative humidity, the Postharvest Storage Facility offers:

- Three controlled temperature rooms housing controlled atmosphere storage test areas, allowing us to achieve varying concentrations of CO2, N2, air and ethylene during fresh produce storage.
- Lab pods enabling multiple trials to be carried out in the individual cold stores, enabling simultaneous trials on several varieties undergoing differing storage conditions.
- The ability for real time respiration and ethylene to be measured simultaneously. External sensor technology measures the real time respiration rate and ethylene production of fresh produce within the controlled atmosphere to increase our understanding of postharvest crop physiological response.
- A high precision system for controlling storage atmospheres and measuring respiration.

Natural Light Growing Centre
Scientifically proving the impact of full spectrum natural light on crops within a protective environment.

Developed in partnership with RIPE building services Ltd, the Natural Light Growing (NLG) Centre at University of Warwick Life Sciences has been built to realise the development of a new approach to commercial protected crop production utilising full UV spectrum natural daylight.

For the first time, RIPE enables the cost effective replacement of glass with ethylene tetrafluoroethylene (ETFE), a material that allows full UV transmission.

The focus of research includes investigating UV’s impact on plant health, growth and development, nutritional value, flavour and shelf life.
BLINK: BeefLink
Traceability within the beef value chain using rapid DNA fingerprinting.

Challenge
Numerous food scandals in the past decade have opened the eyes of consumers in Europe on the prevalence of fraud in the food industry. Food fraud is in many aspects an appealing activity because the profit margins of this activity can be quite large but the risk of being caught is lower than in other criminal activities due to the low priory of police and judicial authorities. Even though no fraud cases comparable in scale as the horse meat scandal have surfaced in Europe since 2013, the risk always exists. For example, reports of ill cows being slaughtered and sold to the market recently continue to shake the trust of European consumers.

Action
Unprecedented advances have occurred in the scalability and affordability of DNA sequence analysis over the past decade. These analyses have reached the point that it has become feasible to generate an individual genetic fingerprint of each slaughtered animal. This is especially the case for cattle, where each animal is of high economic value. Led by Icelandic food and biotech R&D company Matís in partnership with Agrimetrics, ABP Food Group and A.I.A., this project will develop the necessary tools to use the advances in DNA sequence analysis to increase consumer trust by enabling the traceability of individual cattle.

Impact
It is extremely important for consumers and farmers in Europe regain the trust in the meat processing industry. Improved traceability methods of beef products have the potential to help in rebuilding this trust.

"It is extremely important for consumers and farmers in Europe regain the trust in the meat processing industry."
Predictive AI identifies >£6m in savings across produce supply chain

Challenge
Barfoots are a leading UK food and farming business who supply leading retailers from a network of domestic and overseas farms. Produce is grown and harvested to meet specific shipping windows; harvest delays mean missed shipping windows, which must be rectified via airfreight or third party suppliers – at significant cost. These costs could be significantly reduced if Barfoots was able to predict these delays with more time to spare.

Action
Agrimetrics leveraged its data infrastructure and AI expertise to build a predictive model capable of foreseeing missed harvest shipment windows. This model combined four existing models covering crop, harvest, short- and long-term weather models. This meant harmonizing a wide range of data sources, including Barfoot’s crop records and sensor data, crop forecasts, weather forecasts and local weather observations.

Impact
The resulting model was able to predict harvest shipment with up to 93% accuracy. Furthermore, it could make this prediction 4x earlier than Barfoot’s existing systems. The estimated benefits of this model cost exceed £6million per year; this could be multiplied as the model is adapted for other crops.

Precision strip-tillage approaches and polyculture

Challenge
The CHAP Field Scale Precision Equipment, based at Stockbridge Technology Centre, is being used in the EU-funded Horizon 2020 DIVERSify project. The aim is to increase biodiversity in crop systems through polyculture.

Action
Field validation trials are being used to test the potential of clover ‘living mulches’ to improve crop resilience. Precision cultivation of the living mulch allows drilling of the crop into a prepared seedbed, in strips that can be repeatedly placed with high accuracy year after year, at a commercial scale. This supports germination and establishment rates of the sown crop, while leaving undisturbed strips of clover that fix nitrogen to reduce inorganic inputs as well as maintaining the associated soil and plant health benefits of a minimum tillage approach.

Impact
Applying the leading-edge machinery provided by CHAP’s Field Scale Precision Equipment, with high levels of accuracy and repeatability, is allowing for the thorough validation of crop management options and combinations that maximise productivity while also supporting soil health. It also allows for the refinement of existing approaches which, combined with developing technologies to drive innovative approaches and crop solutions, will play a role in addressing key challenges for the agricultural industry.

when2g0 improves water stewardship for OSR applications

Data-driven decision support tool for farmers further reduces risk of surface run-off.

BASF wanted to further reduce the potential of actives – the chemical ingredients in crop protection products – unintentionally entering waterways. They worked with Agrimetrics to develop ‘wHen2g0’, a smart tool that combines data from Defra, the Met Office and the Environment Agency to calculate the risk of leaching when applying products containing metazachlor and quinmerac. 85% of growers believe the tool to be useful, which has also received praise from Severn Trent Water.

See more innovation at www.agritechcentres.com
Creating the world’s first automated farm

Challenge
Research shows that wheat yields in the UK over the last two decades have plateaued and one suggested reason is compacted soil. Most farms use large and heavy conventional machines, which compress the soil and make the soil less productive.

This project proves the capability and ability of the automated farming systems, in turn reducing the levels of soil compaction and aiding the application of precision farming. The Hands Free Farm also aims to offer a good financial incentive by increasing yields and reducing costs through better application of products and more efficient vehicle use.

Action
Agri-EPI Centre has joined Precision Decisions, Harper Adams University, and FarmScan AG to create the world’s first fully automated farm.

The Hands Free Farm project launched in mid 2019 following the end of the award-winning Hands Free Hectare feasibility study, which was the first in the world to plant, tend and harvest a crop without a driver in the seat or agronomists on the ground.

Throughout the project, Agri-EPI Centre is providing the Hands Free Farm team with development space and project management support at their Midlands Agri-Tech Innovation Hub.

Moving away from the perfect hectare of the Hands Free Hectare project, to the irregular fields of real world farming, the Hands Free Farm uses up to three small tractors, including Hands Free Hectare’s original ISEKI tractor.

The tractors used are equivalent in size to those commonly used 50-60 years ago, which is 75% smaller than modern tractors, and harvesters that are 2m wide instead of 10+m. Aside from the partnership funded by Innovate UK, the Hands Free Farm has strong industrial support from various companies generously giving seeds and fertilisers as well as technology components.

Impact
This project will advance the agricultural industry beyond its already technical levels of today. Developing more technological roles in farming will attract skilled personnel to the industry and make agriculture a more attractive career choice to a wider audience.

In addition, it’ll improve the current ways of working. With traditional methods, farmers have to work 14 – 16 hours per day during busy periods to profit. However, once autonomous farming is commercialised, farmers can reduce the amount of time they spend in the field which will help significantly improve mental health by providing a healthy work/life balance.
Innovation in action

Climate and net zero

Reducing the environmental impact of protecting livestock against pests

Challenge
Ectoparasites such as ticks, flies and lice are significant limiting factors to livestock production efficiency and animal welfare. Primary symptoms of a parasitic challenge include reduction in animal performance and reduced growth, milk production and fertility. Such reductions are economically and environmentally costly.

Action
Rothamsted Research’s North Wyke Farm Platform is teaming up with Devon-based firm Denis Brinicombe Group in a bid to deliver a positive impact upon the environment with regard to ruminant production efficiency. The project is funded by the ERDF sponsored Impact Lab on Environmental Futures and Big Data. Researchers will use the state-of-the-art Robert Orr Small Ruminant Facility, supported by investment from CIEL, which is equipped with 24 automatic feed stations to test the hypothesis that a modification of ruminant diet to include specific feed ingredients will alter the external physiological profile of animals, leading to a reduction in parasitic attack.

Impact
The study aims to provide an innovative approach for improved animal health that reduces dependence upon current pest management tools such as acaricides and other treatments. The successful entry of a new and effective diet-based approach to pest management could also prove effective in treating endoparasite infections and mitigate against the growing threat of antimicrobial resistance (AMR).

Decarbonising hydroponics with GelPonics

Challenge
Hydroponic systems generally use a substrate, such as rock wool, coir or peat, to support plant roots and facilitate water and nutrient uptake. Substrate options that are unsustainable tend to be a large contributor to the carbon footprint of vertical farming or glasshouse food production. With global controlled environment production expanding significantly, alternatives need to be sought that can decarbonise agriculture while meeting grower specifications and, crucially, competing on price.

Action
The GelPonics project aims to develop an autonomous, hydroponic system centred around a novel hydrogel growing media. It is a collaboration between AEH Innovative Hydrogel, Labman Automation and CHAP, with Manchester University’s Graphene Engineering and Innovation Centre, Grobotic Systems and Stockbridge Technology Centre. The project will be delivered in three phases. Phase 1 will optimise the hydrogel formulation and shift-changer nutrient delivery system, encompassing a state-of-the-art graphene membrane, alongside comprehensive industry analysis. Phase 2 will focus on prototyping trials in CHAP’s Vertical Farming Development Centre, and STC’s LED Tomato Glasshouse, to optimise plant growth within the GelPonics system. System development will combine sensors with automation to create a fully automated rig for the hydrogel substrate, integrated with renewable energy. Phase 3 will deliver a full, semi-commercial trial of the GelPonics system for both leafy green and tomato production, as well as demonstrating the technology and its potential for low-carbon horticulture.

Impact
With global controlled environment production expanding, alternative models and sustainable substrates need to be sought to decarbonise agriculture while meeting grower specifications and competing on price.
Linked-data Marketplace accelerates innovation across the agrifood sector

Challenge
Availability and accessibility of data is a major barrier to innovation across the food and farming sector. Valuable data is hidden in private silos generating little or no value; meanwhile, many innovators lack the information they need to build new solutions. Even when data is available, the costs of using it can be prohibitive – it’s not uncommon for 60% of project budgets to be devoted to data transformation.

Action
Agrimetrics vision is to enable a sector where the equitable sharing of data powers the next generation of innovation. They’ve built an Agri-food Data Marketplace that allows organisations to share and monetise data in a fair and equitable way. The Marketplace is built atop the latest linked-data technologies, which accelerates the process of connecting disparate data. Innovative search tools – such as the visual linked-data explorer – make data easier to find and access. Finally, a revenue-sharing model ensures that data owners are fairly rewarded for their data and powerful permissioning and ISO27001 accreditation means they never lose control.

Impact
Agrimetrics have attracted Microsoft as a strategic partner and a range of organisations are sharing their data through the Marketplace, including: Airbus, Centre for Ecology and Hydrology (CEH), ClearSky, Environment Agency, and Weather Logistics. The Data Marketplace has already enabled projects by BASF, Glas Data, and Natural England. In some instances – for example, ‘SAR’ satellite data – access times have been reduced from 12 months to several minutes, whilst eliminating an estimated £12,000 in data storage costs.

Putting a value on Natural Capital
Enabling data-driven decision making about our natural world.

How can you put a value on the natural environment? How do you improve land management decision making? Bringing together all the relevant information, in one place, is vital. Agrimetrics worked with Natural England and Defra group agencies to combine diverse data about our natural world in one, easy-to-use tool: Natural Capital Explorer. The tool will improve data-driven decision making for a range of stakeholders and scenarios, including planning developments and parish planning.
Innovation in action

Working internationally

USA
Canada
Madagascar
Nepal
Japan
Kenya
China
Serbia
UK
Ghana
Portugal
Paraguay
Peru
Cote d'Ivoire
Malawi
Vietnam
Australia
New Zealand
Canada
Serbia
UK
Ghana
Portugal
Paraguay
Peru
Cote d'Ivoire
Malawi
Vietnam
Australia
New Zealand
**Novel non-antibiotic treatment of multidrug resistant organisms in poultry**

**Challenge**
The use of antimicrobial treatments in agriculture is vital in protecting animal health and aiding the production of safe and nutritious food. However, overuse of antibiotics in the global livestock sector is attributed to the rise in multidrug-resistant (MDR) bacteria, constituting a significant threat to broader animal and public health. This is especially a problem in China where antibiotics are still used for growth promotion in livestock.

**Action**
CIEL is supporting a UK-China consortium that secured vital funding to develop a new non-antibiotic antimicrobial treatment that could control the spread and development of antibiotic resistant pathogens in poultry. The project is led by UK company GAMA Healthcare, best known for their infection control products in hospitals. Working alongside GAMA Healthcare and CIEL are Scotland’s Rural College (SRUC) and the Shanghai Veterinary Research Institute. Studies centre on developing an alternative antimicrobial treatment to conventional antibiotics by coupling a cancer medicine delivery system (microparticles) with a new class of short-lived antiseptic, which will be applied to reduce MDR bacteria in on chicken farms.

**Impact**
There are clear veterinary and human health benefits associated with successful implementation of this alternative antimicrobial technology. Further gains include improved food security, food integrity and supply chain resilience, in turn leading to much wider economic benefits. Successful completion of the project could see the technology extended to other livestock species.

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**World-class UK agri-tech in Africa**

**Challenge**
Approximately 80% of the African workforce makes a living from agriculture but many are crippled by a lack of access to financial products to develop their businesses. Price fluctuations for inputs and products, along with crop failure, due to pests, diseases, temperature or variable rainfall, hold the entire agricultural ecosystem back. It is very difficult for credit providers to measure risk in the face of such variables without good data from farmers.

**Action**
AgSpace Agriculture’s GRID system offers a precision data-driven opportunity for overcoming this barrier, giving providers the evidence and the confidence they need to support farmers in increasing yields, growing their farms and ultimately contributing to wider economic development. Developed under a two-year European Space Agency-backed project involving AgSpace, Agri-EPI Centre and RHIZA, GRID gives farmers access to the most advanced agricultural satellite mapping and analysis available, backed by independent agronomic advice. The information helps producers to make better management decisions and allows them to offer evidence of their crops’ performance to financial providers to gain access to credit and insurance. Farmers access agronomy advice by smart phone to improve production while financial providers use the same satellite data to monitor crop performance and build a clear picture of each farm, whatever its size and however remote. It is the first tool on the market specifically allowing farmers and financial providers to track crop performance.

**Impact**
There has been rapid uptake of GRID following its launch in 2019. It is now operational in nine African countries, and involves financial providers including Standard Bank. Further expansion is predicted to create up to 775 jobs between the UK and Africa.

See more innovation at [www.agritechcentres.com](http://www.agritechcentres.com)
Innovation in action

Working with the 4 Centres

CIEL is an important facilitator in bringing industry together to discuss key issues the sector needs to address and identify ways to overcome them. CIEL is a good support network. The team actively works on our behalf and we certainly recognise the value membership brings to our business.

Paul Billings, Germinal GB

CHAP has been a great resource for us to meet others in the industry and develop our network as well learn about ways our technology could help. Through CHAP we have met potential project partners and we plan to partner with CHAP on a number of grant applications.

Dr William Pelton, Phytoform

Agrimetrics provides us with the ability to interact with users, get the data online and link it to other datasets. This enables us to model the data and improve and identify factors that improve yield.

Daniel Kindred, ADAS

CIEL will enable us to further expand our knowledge that keeps us at the forefront of farming developments. Working with CIEL and drawing on its available expertise will benefit Saputo Dairy UK, our farmers and CIEL Members alike.

Steve Harris, Saputo Dairy UK

Our collaboration with Agri-EPI and the South West Dairy Development Centre in Somerset gave us the opportunity to produce robust research in a commercial setting. The farm setup allows companies to obtain accurate feeding data whilst also being commercially viable at the same time. The turnaround time from project ideas to implementation of a trial is very quick and a great benefit for companies.

Georgina Chapman, Nutritionist, ED & F Man Liquid Products UK

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