



Livestock matters: Economic and environmental impacts on poultry farmers

Livetec
systems

Building the **future**
of **livestock** protection

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INTRODUCTION

Life is anything but straightforward for Britain's livestock farmers.

On the one hand, the future looks rosy. A biosciences study carried out by researchers at Penn State University suggests that agricultural production must increase by as much as 70% to feed the global population by 2050 - substantially more than the 50% increase often cited. Researchers argue that figure is based on old data, meaning agricultural output will need to scale much higher than previously thought.

In addition to the population increase, farmers have another reason to feel optimistic. Global income levels are increasing - a trend that is typically followed by an increase in demand for proteins. As Purdue University agricultural economist David Widmar notes,

"As incomes rise, consumer preference moves from wheat and grains to legumes, and then to meat, including chicken, pork and beef"¹.

However, despite these assurances of long-term, ongoing future demand, today's reality is different. Many farmers are operating in a rapidly shifting and increasingly challenging landscape - a landscape that means many may not be around to capitalise on the possibilities of tomorrow.

Agricultural production must increase by as much as

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THE FEED, FUEL AND FERTILISER TRIFECTA

If we were to assign a watchword to the last 36 months, that word would be resilience. Or perhaps perseverance. Many farmers have found themselves fighting for survival amid a perfect storm of challenges.

The Russian invasion of Ukraine on 24 February 2022 saw 1.7 billion people in over 100 countries facing elevated food, energy, and commodity prices. For Britain's farmers, the fall out was swift and is still being felt.

The sanctions imposed on Russia, the world's third largest producer of fuel and fourth largest producer of fertiliser, sent prices skyrocketing. One tonne of fertiliser cost £650 in February 2022, prior to the invasion, but rose to almost £1,000 per tonne² within six months. The cost of liquid fertiliser jumped by more than 350%.

Rocketing feed prices

The Department for Environment Food and Rural Affairs (Defra) figures tracked feed wheat at £194.20 per tonne in January 2021. By January 2023, that had risen to £252.68 per tonne. Whilst these costs began to drop over the course of 2023, they are now on the rise again, highlighting market volatility and how farmers are at the mercy of external factors.

IBISWorld estimates that the average price of animal feed will rise at a compound annual rate of 8.8% to reach £373.70 per tonne, over the five years through 2023-24³. They are expected to stay at 'exceptionally high levels' for the foreseeable future.

A similar picture can be seen in the impact of fuel prices, too. Wholesale energy prices increased by 15 times their usual rate in the aftermath of the war. Office of National Statistics (ONS) figures show that annual energy inflation at the start of 2023 for gas exceeded 129%.

Current energy prices are lower but, whilst there is an energy price cap for households, no such cap exists for businesses. As such, farm business owners remain exposed to unpredictable price rises, making future resource planning challenging.

A lack of security and stability in these areas means that farmers need to ring-fence more cash to manage the feed, fuel and fertiliser trifecta, simply to survive.

Summary

This perfect storm of combined price spikes led to a significant proportion of farmers stopping production and not replacing their flocks. To prevent this happening again, and secure the nation's food supply, it's vital that measures are explored to protect producers against such volatility.

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THE IMPACT OF PRICE INFLATION

Input price inflation for UK farmers is at a record high but income levels are going in the opposite direction. From £6 billion in 2021, to £5 billion in 2022, and approximately £3.25 billion in 2023, farm income is falling rapidly, squeezed by both disappearing subsidies and commercial pressures.

The loss of farming subsidies has been sharply felt. Of the income figures mentioned above, it is estimated that approximately £3bn came from subsidies that have now either ended or been withdrawn. This loss, coupled with climbing input costs, contributes towards a very challenging climate.

What does this mean for an individual farmer? In 2021, the average farmer could expect to turn a profit of around £51,000, of which nearly £28,000 would have been attributable to subsidy. However, as more of these subsidies expire, Britain's farmers face the nightmare combination of a sharp fall in profit coinciding with rampant agri-inflation and soaring input costs.

Retailers are facing pressure to keep prices low despite the rising costs of raw materials and labour, and are failing to keep pace with inflation-adjusted payments to farmers. That means producing chicken, eggs, beef, pork, and lamb products is often undertaken at a loss. It's an unsustainable scenario.

It is anticipated that the number of full-time farm businesses will decrease by 20% from 54,000 in 2020 to 42,300 by 2030, as many plunge further into the red. This data, compiled by business consultants Andersons⁴, illustrates the sheer scale of financial pressure being faced by farmers around the country.

Consequently, national livestock populations are declining as farms close down or are forced to cut back operations due to rising costs, with cattle, calves, pigs, poultry and breeding stocks all significantly depleted.

The number of full-time farm businesses will decrease by

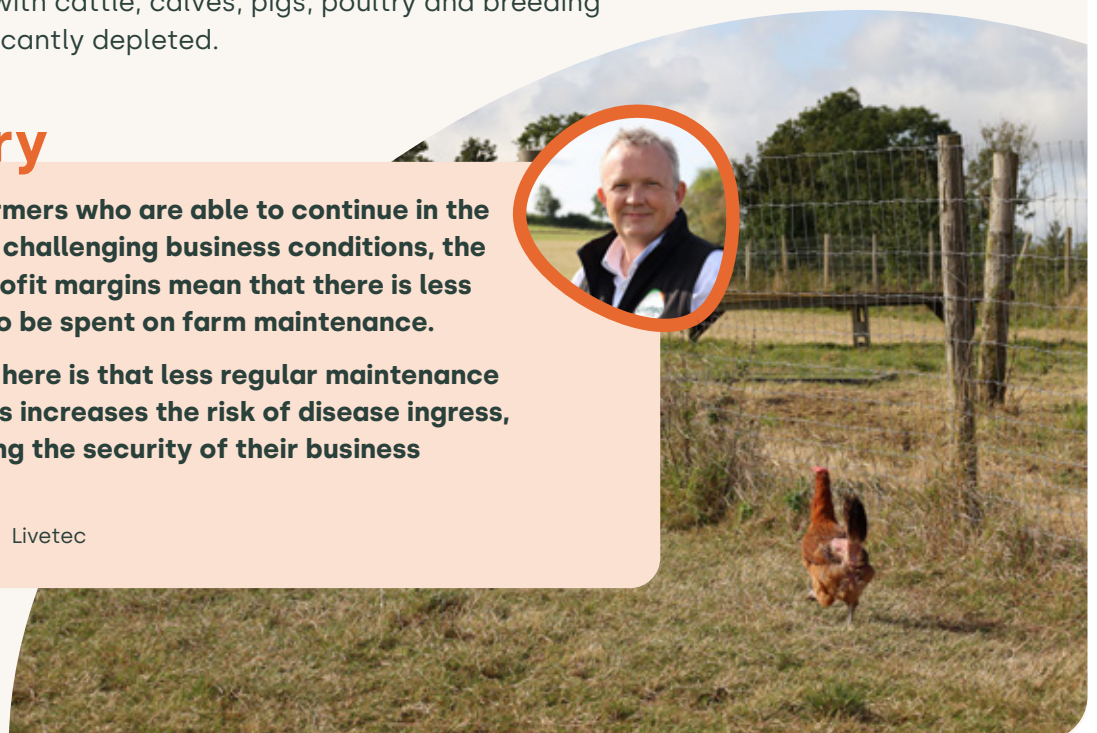
20%

Summary

For those farmers who are able to continue in the face of such challenging business conditions, the restricted profit margins mean that there is less spare cash to be spent on farm maintenance.

The concern here is that less regular maintenance and upgrades increases the risk of disease ingress, so threatening the security of their business still further.

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THE IMPACT OF DISEASE

For farmers already struggling to manage the rising costs caused by wider geopolitical and environmental factors, the ever-present threat of disease can feel like living with a spectre at the gate.

With the sheer number of potential diseases that a flock can be susceptible to, it is inevitable that any keeper, let alone one with large commercial flocks, will spend much of their time and money trying to mitigate and then manage disease ingress and spread amongst their flock. From coccidiosis and avian influenza to campylobacter and salmonella, the list of potential infections is vast.

The cost, whether in time, profit, stress or money is astonishing - so much so that in 2022, the UK government allocated another £200 million into research programmes focussed on zoonotic diseases such as avian influenza. The global experience of Covid-19 certainly focussed minds on the destructive impact of such zoonotic diseases, and so this research funding is a welcome contribution to their control.



The rapid spread of the highly infectious H5N1 strain of the disease saw

207

confirmed cases in 2022-23 season⁵

And this can't come too soon. The avian influenza season of 2021 to 2022 was previously the worst on record with nearly four million affected birds in the UK. This resulted in birds dying of disease or being culled across hundreds of premises of all sizes countrywide.

Causing concern at all levels of government and industry, the continued threat of avian influenza was described as, "very, very scary. It's a huge crisis that could turn into a catastrophe" by Dr Christine Middlemiss, the UK's Chief Veterinary Officer. For the 2022 to 2023 season, it was both shocking and depressing to note that the numbers were even higher.

So far the 2023/24 season is showing a welcome drop in case numbers with viral adaptations and some observed immunity in wildbirds behind this decrease. However this is not expected to last as the virus continue to mutate and so evade any built up immunity. In addition, changes in migratory patterns and the increasing impact of wild and water-birds spreading disease, weighs heavily on the minds of those preparing the nation's response to the upcoming challenges.

The continued threat of avian influenza is very, very scary. It's a huge crisis that could turn into a catastrophe⁶

Whilst there are scientists across the world exploring ways to effectively deal with avian influenza, from vaccinations to genetic modification, these solutions are still some way off, meaning that the UK's farmers must be ever vigilant with their biosecurity measures to limit the impact of this scourge.

And farmers also have to look beyond avian influenza at other zoonotic threats to their flocks. Concerning substrains of Newcastle disease that are present across Asia and Africa, affect backyard keepers as much as commercial farmers and can be easily transmitted via wild birds across great distances - the UK's geographic position does not shield it against such unwelcome incursion.





In response to the Salmonella outbreak of 2020 being linked to processed poultry, and a recognition of the dangers of animals becoming resistant to antibiotics and producing strains of superbugs, there is a critical need for the nation's poultry farmers not to rely on antibiotics but to find other ways to manage and protect against disease.

Of course, a tightening of the regulations around antibiotic use will be welcomed, as highlighted by Jo Raven director of thematic research at the FAIRR initiative, an ESG-focussed investor network, who notes that, **"with approximately 70% of antibiotic use occurring in animal agriculture supply chains, it's clear that stronger regulations, and stricter enforcement, will be necessary to ensure food safety and responsible antibiotic use in the protein supply chain."**⁷

But improved regulation is not enough. A much wider, holistic approach to biosecurity is required more than ever before.

As the pathologies and transmission patterns of these diseases evolve, whether due to antibiotic resistance or changing wild bird behaviours, it is critical that individual farmers and the industry as a whole change their mindset to biosecurity as the first and most effective line of defence against disease.

Summary

The UK is well ahead of the field in reducing the use of antibiotics with a nearly 80% reduction over the past 12 years.

This slashing of antibiotic use has propelled biosecurity to the top of the agenda as the most effective way to protect against pathogen incursion.

Of course, the appeal and value of this biosecurity-led approach is even greater when we consider the added productivity gains that come from such a strategy.

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THE IMPACT OF CLIMATE CHANGE

The threat of climate change poses an existential threat to everyone and everything on this planet. International stories abound of record-breaking temperatures and rising sea levels as well as drought and flooding on every continent.

Closer to home, these concerns are just as pressing - from land erosion on the south coast, to flooding in Scotland and the rising cost of feed as a consequence of drought elsewhere, climate change has a direct impact on the UK. All of the nation's farmers, whether arable or livestock, have to make adjustments to their calendars, sites and processes in mitigation.

The UK has always been susceptible to flooding and this is increasing in regularity. For every 1°C the air warms, it is estimated that it can hold approximately 7% more water⁸, this will lead to an increase in both the number and scale of flooding events. It is predicted that during the 2020s, approximately 35,000 hectares of the most valuable farmland is likely to be flooded every three years. This is calculated to rise, reaching 130,000 hectares by the 2080s - an area larger than Greater Manchester⁹. Water ingress is one of the most common transmission routes of pathogens into sheds, so an increase in flooding risk not only causes significant structural damage but also dramatically increases the chances of a subsequent disease outbreak.

Concerns around rising temperatures are perhaps most acutely felt by, and raise particular challenges to, those in the farming industry. Increased temperatures create a huge welfare concern for all animal keepers. As the UK sweltered in its first official recording of 40°C heat, it was inevitable that this would cause a new challenge for farmers in maintaining high standards of animal welfare.

Looking ahead, the principal focus must be on improving shed construction and ventilation systems to versions designed for such temperatures.

These types of facilities are already used in high-temperature poultry powerhouses such as Saudi Arabia and Brazil, so the blueprint exists, but there will need to be significant investment from the UK's poultry keepers if these hotter temperatures become the norm.

Rising temperatures, particularly when they occur later in the year, result in a change of migratory patterns for wild and sea birds. In October 2023, temperatures of nearly 26°C were recorded - numbers more closely associated with a 'typical' British summer.

The UK has always been blessed with a rich cast of visiting species whose calls and sounds herald in the change of seasons.





However, scientists have noted that the range and type of migratory birds currently seen is changing. In the south of England, where temperature rises are most acute, there has been a dearth of the calls of a cuckoo and willow warbler¹⁰. Current theories suggest that the birds are finding it difficult to adjust their internal clocks to match the changing of the seasons. For other birds, the warmer, longer periods of weather mean that some species are arriving earlier and leaving later as they migrate¹¹.

The concern for poultry farmers

Whilst it is impossible to accurately ascertain what percentage of the UK poultry industry's avian influenza cases are attributable to wild bird infection, it is clear that the ability of wild birds to span vast distances, means that the changes in the composition of the nation's wild visitors affect a farmer's ability to prepare and address the threat of new and evolving pathogens. Whilst some treasured visitors may now avoid the UK altogether, many new ones may start to appear, potentially carrying more virulent strains of avian influenza that can wreak havoc once they enter the domestic flock.

It is critical, then, that as the migratory patterns change, extreme vigilance is practised by everybody on the lookout for these shifting patterns and visitors. This is a concern held by parties at all levels, including central governments.

The Deputy Veterinary Officer for Wales, Dr Gavin Watkins, "**urges you all to review the measures you have in place and identify areas of improvement. Think about risks from direct contact with wild birds.**"¹²

The delicate balance that exists between farmers, their animals and nature is critically threatened by climate change. All those involved with livestock must take into consideration how climate change will affect their animals and their practices, and how they can best negate its impact.

Summary

Changes in global climate are having a demonstrable impact on both the behaviour of wild birds and the ways domesticated stock need to be reared.

There have always been seasonal fluctuations in temperatures and conditions. However, it's undeniable that there needs to be significant investment in farming infrastructure in order to mitigate against the threats posed by all aspects of climate change.

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THE IMPACT OF BRITAIN LEAVING THE EU

Issues created by Brexit remain a modern day challenge for farmers, further compounding what is already a difficult situation for many in agriculture.

The end of free movement has made seasonal labour harder to find, leaving many farms shorthanded. Red tape has made exports more difficult and time consuming, while the end of the Common Agricultural Policy (CAP) means subsidiary payments have also dried up.

At the same time, government-brokered trade deals with countries such as New Zealand and Australia give overseas farmers access to the UK market, while British farmers have lost easy access to their main trading partners.

Just 224 farmers in England were paid under the government's flagship post-Brexit nature-friendly agriculture scheme in 2022 according to research carried out by The Guardian newspaper¹³ - a tiny fraction (0.2%) of the farm businesses that previously received EU payments. Accordingly, many are finding it harder and harder to stay in business.

The number of working farmers in the UK has fallen from 113,200 in 2010 to 92,100 in September 2022



A CAUSE FOR OPTIMISM



There is no airbrushing the difficult reality facing Britain's farmers right now. But there is cause for optimism.

While core challenges such as high feed, fuel and fertiliser costs remain, the industry of agriculture is traditionally one of innovation. It continually strives forward and pushes the boundaries of science, of animal, land and climate husbandry, of technology and of automation.

Our farmers are the custodians of food security, nutrition, and sustainability. From country to country, developed economies to developing ones, exciting advances are emerging at pace.

"In developed countries, farmers have adopted innovation and technology to make agriculture one of the most efficient and effective production systems in the world"¹⁴ recognises David Green, Executive Director of the U.S. Sustainability Alliance.

One of the main characteristics of the British farming community is their resilience. To meet a challenge head-on and prevail.

As more effective livestock protection solutions and genuine biosecurity are adopted by farms, coupled with an openness to adapt to a changing agricultural landscape by embracing new technologies, our farmers can head into the future with confidence. And of course, they can rely on Livetec to be with them every step of the way with our innovative, award-winning products and services.

Summary

The last few years of record disease outbreaks have been incredibly painful for those involved. However, they have also proved to be an invaluable learning opportunity.

At Livetec, we have built our understanding of the unique nature of avian disease spread and this has fed into the development of strategies, products and services that are specifically designed and tested on-farm.

We now know what works, what doesn't, and have a proven arsenal of biosecurity strategies that are efficient and effective.

Together, with a collective focus on improved biosecurity, we can dramatically reduce the negative impacts of disease, and improve the health of the poultry industry. That's something worth being optimistic about!

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Welcome to Livetec

Today's farmers are facing more uncertainty in their business. Rising costs are compounded by falling pay and the spread of disease. There is greater pressure to scale up to feed the nation, but at the same time, less manpower to do so.

These issues mean that farmers must prioritise the health of their livestock and reduce unnecessary costs while maintaining or increasing productivity.

They have to find every possible opportunity to cut down on costs, cultivate leaner operations and take every possible precaution to mitigate the devastating prospects of disease incursion.

Founded in 2010, Livetec specialises in on-farm, disease prevention solutions to support farmers as they develop proactive strategies to protect their livestock and livelihoods - even in the face of lingering post-Covid, post-Brexit and post-Russian invasion issues.

For more than a decade, Livetec has collaborated with farmers facing a diverse range of challenges and partnered with leading academic institutions and other commercial and industry bodies to further scientific research into biosecurity.

Known for its 'lab to farm' approach, Livetec applies this scientific research and contemporary technologies directly to its agricultural products and services, removing the burden of regulation and compliance from farmers at source.

We offer the nation's farmers practical support and trusted guidance to future proof their businesses, plan for problems, obtain insurance and most importantly, maintain elevated levels of biosecurity to ring fence livestock and livelihoods from the threat of disease.

Livetec
are the
industry
leaders
in biosecurity

To find out more, visit
www.livetecsystems.co.uk
or scan here.



BIOSECURITY ADVISORY SERVICE

Actively protecting your livestock against the threat of disease is the single most important action you can take as a farmer to safeguard your daily operations, the health of your livestock and keep production costs low.

In the event of an outbreak at your business, the loss of operational productivity and the associated costs for depopulation, repopulation, cleaning and disinfecting, reputational damage and the potential loss of commercial contracts, can be devastating.

Livetec's Biosecurity Advisory Service helps you to safeguard the welfare and wellbeing of your livestock and your business. By assessing current biosecurity processes and making evidence-based recommendations, we can help you to shore up your defences against disease and define relevant, effective response plans should the worst happen.

To find out more, visit www.livetecsystems.co.uk or scan here.



SOURCES

- 1 <https://www.syngenta-us.com/thrive/research/future-of-farming.html>
- 2 <https://www.foodmanufacture.co.uk/Article/2022/03/29/government-helps-farmers-faced-with-high-fertiliser-prices#:~:text=It%20highlighted%20reports%20from%20levy,around%20%C2%A3650%20in%20February>
- 3 <https://www.ibisworld.com/uk/bed/animal-feed-prices/44245/>
- 4 <https://www.fwi.co.uk/news/farm-policy/farmer-numbers-expected-to-plummet-as-bps-is-taken-away>
- 5 <https://www.gov.uk/government/news/bird-flu-avian-influenza-latest-situation-in-england>
- 6 <https://lordslibrary.parliament.uk/bird-flu-2022-dealing-with-the-uks-largest-ever-outbreak/>
- 7 <https://www.thegrocer.co.uk/food-safety/britains-meat-supply-chains-remain-vulnerable-to-antibiotic-failure/680476.article>
- 8 <https://www.metoffice.gov.uk/research/climate/understanding-climate/uk-and-global-extreme-events-heavy-rainfall-and-floods>
- 9 <https://eciu.net/analysis/briefings/climate-impacts/flood-risk-and-the-uk>
- 10 <https://www.bbc.co.uk/news/science-environment-66858850>
- 11 <https://www.nationalgeographic.co.uk/animals/2017/12/uks-migratory-birds-arrive-earlier-and-stay-longer-due-to-climate-change>
- 12 <https://www.gov.wales/avian-influenza-identified-premises-gwynedd>
- 13 <https://www.theguardian.com/environment/2023/jan/04/just-224-farmers-paid-under-post-brexit-farming-scheme-last-year>
- 14 <https://www.openaccessgovernment.org/agricultural-innovation-2/130235/#:~:text=In%20developed%20countries%2C%20farmers%20have,production%20systems%20in%20the%20world>

Livetec Biosecurity

▶ Biosecurity Advisory Service

Our Biosecurity Advisory Service provides you with an on-farm visit with a biosecurity expert. Our on-farm discovery sessions make us a supportive partner, helping you to minimise risks and imparting knowledge so that you can better protect your farm from disease incursion.



▶ Contingency Plan

Our Contingency Plans encompass every aspect of farming businesses, risks and emergencies that could arise in the future. We help you to design strategies to manage the impact of these concerns. A comprehensive package, this helps make you compliant and insurable.



▶ Biosecurity Plan

Without a Biosecurity Plan in place, you are leaving your business and animals highly susceptible to disease incursion. We document your biosecurity plans to encompass and outline all of the measures that must be followed by every single person on/off-farm to prevent the introduction of deadly pathogens.



▶ Emergency Response Plan

An Infected Premises Response plan or, as we call them, an Emergency Response Plan, significantly enhances your preparedness and is designed to cover everything that APHA and insurance brokers require if and when they visit your farm business. This plan holds all the necessary critical information, in one place, putting your mind at rest during a time of crisis.



▶ National Outbreak Plan

Our National Outbreak Plan has been designed to comply with the regulations and requirements set by the UK government, providing bird owners with everything you need to know should you be impacted by a disease outbreak or fall within a restriction zone.



▶ Cleansing and Disinfection Plan

Our Cleansing and Disinfection plan is designed to give you the framework for all of the measures you need to take, with clear instructions that comply with APHA requirements.



▶ Cost of Depopulation Report

Our Cost of Depopulation calculator will help you accurately assess all catching and disposal costs related to depopulation, assisting you in gaining the correct level of insurance.



▶ The Livetec Systems App

You can stay ahead of bird flu outbreaks with real-time alerts from across the UK delivered to your phone. So, if there's an outbreak near your premises you can be proactive and protect your poultry - whether the threats come from wild birds or neighbouring premises.



[Learn more](#)

To find out more about how our plans can help your farming business, please visit www.livetecsystems.co.uk/plans or email us for more information sales@livetecsystems.co.uk

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