How is the war in Ukraine affecting British farming?

Whitepaper | August 2022

Livetec systems | Building the **future** of **livestock** protection

Contents

Executive Summary

On 24 February 2022, Russian military forces invaded Ukraine.

The UK government estimates[1] that as a direct result of the war, 1.7 billion people in over 100 countries are now facing elevated food, energy and commodity prices. The global impact is growing daily. It's also being felt close to home with UK farmers and the agricultural industry being directly affected by the consequences of a war being played out on the international stage, over 1000 miles away from our shores.

Livetec Systems has been at the forefront of agriculture in Britain for more than a decade. Our research and development capability, investment in innovation and commitment to sharing our industry knowledge to better the businesses and livelihoods of the nation's farmers means we're uniquely positioned to appreciate the very real challenges now emerging as a result of the Russia-Ukraine conflict.

In this report, we take a closer look at the problems our farmers are being forced to confront because of the war, the challenges that lay ahead and how British farming can mitigate against these issues in the months and years to come.

[1] https://www.gov.uk/government/speeches/russias-attack-on-ukraine-threatens-global-food-security-uk-statement-to-the-osce

Introduction

Emerging from a global pandemic, few could have predicted that a war in Europe would follow.

Russia's decision to invade neighbouring Ukraine has already taken an unimaginable human toll, destroyed infrastructure, displaced millions of people and sent shockwaves through global economies. It's also had a seismic impact on the global food supply chain and food security across Europe, Africa and beyond – an industry that had already been tested by COVID-19 shutdowns and shortages.

You'll often hear Ukraine and Russia referred to as ***"the breadbasket of Europe"***. Collectively, the two nations are the largest exporter of wheat in the world, responsible for 36% of supply[2]. Ukraine is the largest producer of sunflower oil in the world, while Russia is the second largest exporter of corn.

The knock-on impact of the scale of destruction seen in Ukraine is that the nation's farmers are displaced, and their equipment destroyed.

They may be fighting for their country or have their farms occupied by Russian soldiers, meaning crops can't be harvested, and seeds aren't being planted. It's estimated that sowing of crops such as wheat, oats, barley, corn and sunflowers will drop to less than half of the level seen before the war, falling from 15 million hectares in 2021 to 7 million in 2022. The ripple effect of this decline will see exports in 2023 likely severely restricted[3].

In addition to producing a lot of grain, Russia and Ukraine produce a lot of livestock, including poultry and pigs. The implications of war affects farmers' ability to both produce livestock and control disease.

The National Farmers Union (NFU) says UK farmers need more help[4] if they are to scale up production to keep the UK fed and supermarket shelves stocked.

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2 https://www.economicsobservatory.com/how-is-the-war-in-ukraine-affecting-global-food-security

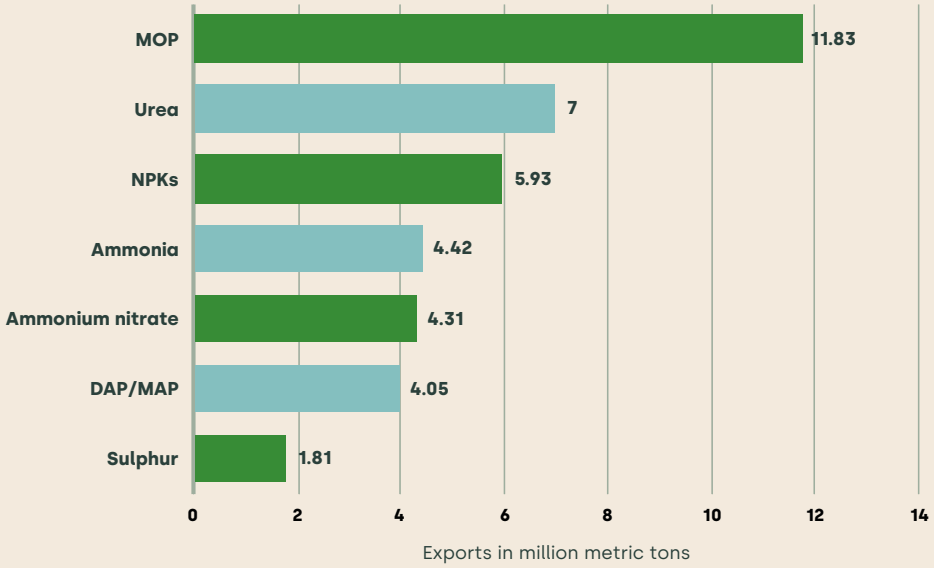
3 https://www.reuters.com/world/europe/exclusive-ukraine-2022-spring-crop-sowing-area-could-be-halved-minister-2022-03-22/

4 https://www.nfuonline.com/updates-and-information/ukraine-conflict-the-risks-and-mitigations-for-uk-food-security/

Restrictions in supply don't just cause shortages – they also lead to costs spiralling, which in turn can impact on the financial viability of farms across the country.

Sanctions levied against Russia, the world's third largest producer of fuel and fourth largest producer of fertiliser, have caused prices to spike alongside gas prices which have doubled and tripled at an alarming rate. Each of those components is vital to the business of farming and required by British farmers across the production lifecycle. With scarcity and cost challenges to confront, a war across the continent is having a noticeable impact in fields, in poultry sheds, in greenhouses and in farm businesses in every corner of Great Britain.

Export volume of fertilizers from Russia in 2021, by type
(in million metric tons)



Source: https://www.economicsobservatory.com/how-is-the-war-in-ukraine-affecting-global-food-security

Understanding the Challenges

The war in Ukraine poses a number of complex problems for Britain's farmers, which overarch human, animal and business considerations.

The tentacles of crop shortages, supply chain disruption and rising costs cut right to the heart of farmers and animal welfare. These issues also inflict an immense amount of operational and financial pressure, which could be insurmountable in the worst of cases.

The most pressing problems to face British farmers in the wake of Russian military action are:

1 Rising Cost of Feed

"Animal feed prices are primarily influenced by fluctuations in the cost of raw materials such as wheat, barley, oats and maize. Supply of, and demand for, other key cereals and grains are also important and can similarly influence prices."[5]

Grain production, sowing and exports in Europe's breadbasket of Russia and Ukraine has been severely impacted by the war, leading to both a shortage of supply and correspondingly, an increase in cost. With those raw ingredients being core components of animal feed, the cost of feeding livestock has risen sharply, leaving Britain's farmers to finance the shortfall.

The owner of the UK's largest poultry producer has said that ***"Prices from the farm gate have already risen by almost 50% in a year"***[6] due to feed costs rocketing as a result of supply chain disruption. This assessment is backed by the NFU, with president Minette Batters saying[7] that **the cost of producing a chicken is 50% higher** today than it was 12

[5] https://www.ibisworld.com/uk/bed/animal-feed-prices/44245/

[6] https://www.theguardian.com/food/2022/may/01/rising-feed-prices-mean-chicken-could-soon-cost-as-much-as-beef

[7] https://www.bbc.co.uk/news/business-60691116

months ago.

Per tonne, DEFRA figures show that the cost of feed barley has risen from £209.03 in January to £281.06 in April, while the cost of feed oats has increased from £166.91 to £212.76 in the same timeframe.

Some farmers report[8] that the real cost of producing a dozen eggs has increased by as much as 30p, while Britain's retailers haven't increased the price they pay by the same amount.

For farmers, the sharp additional financial expenditure required to keep livestock fed has clear profit implications, given revenue isn't keeping pace with the cost of production. It could mean that farmers are left in the red simply by continuing to feed their livestock.

Table 1: Ranking of world production of major food crops (2020)

Commodity	Russia rank	Ukraine rank
Sunflower seed or cottonseed oil	2nd	1st
Wheat and meslin	4th	7th
Barley	2nd	6th
Maize	10th	6th
Fertilisers	4th	18th
Fuel	3rd	n/a

Source: https://www.gov.uk/government/statistical-data-sets/animal-feed-prices

[8] https://www.theguardian.com/environment/2022/mar/31/cost-of-farming-crisis-egg-producers-plea-to-uk-supermarkets-to-raise-price

2 Higher Fertiliser Costs

"As an energy-intensive sector, agriculture was traditionally linked to the energy industry through its input channels. While fuel and electricity are used directly in agricultural production, fertilizers and pesticides represent [the] two most prominent indirect energy inputs. Through these energy input channels, higher energy prices increase the cost of producing and transporting food commodities."

Karel Janda and Ladislav Kristoufek, Institute of Economic Studies, Charles University [9]

Higher energy prices are proven to be linked to increased costs of food production and transportation. When the cost of energy products, including oil and gas, increases, so too does the cost of fertiliser and with it, the cost to farmers.

Russia is the largest exporter of fertiliser in the world. It shipped 11.8 million metric tonnes of Muriate of Potash in 2021, along with 7 million metric tonnes of Urea and 4.42 million tonnes of Ammonia. Potash is especially significant as it is a key nutrient used to boost crop yields.

The war in Ukraine has seen economic and political sanctions served on Russia and its ally, Belarus (also a key exporter of fertilizers worldwide), with bans on imports seeing supplies tightening.

Russia has also taken steps to stop exports, sending prices higher and meaning farmers are faced with a stark choice; pay more and absorb the higher price or use less, potentially reducing crop yields and therefore, future income.

Looking to other sources is also problematic, with import of fertiliser from China prohibited and the use of some substances such as urea tightly regulated.

[9] https://crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2019-02/20_2019_janda_kristoufek.pdf

Figures from the Agriculture and Horticulture Development Board (AHDB) show that the cost of fertiliser was already increasing before the war in Russia. It says the cost of acquiring fertiliser had spiked by between 70% and 140% as a result of the rising cost of gas. However, since the war in Russia, this price increase has quickly escalated, with one tonne of fertiliser costing £650 in February now closer to £1000 per tonne[10].

The cost increase changes are depending on the type of fertiliser being used, farmers opting for liquid fertilisers such as liquid urea-ammonium nitrate are now paying as much as 350% more[11] than they were 12 months ago.

The impact of higher fertiliser costs ripples through the agricultural industry, with the financial fallout felt by both arable and livestock farmers; fertiliser is vital for growing crops such as wheat and corn, crops are also key components in animal feed. Farmers also use fertiliser to grow grass for animals to eat, meaning no farmer is immune to the financial blow.

[10] 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

[11] https://www.theguardian.com/business/2022/apr/10/uk-farmers-fear-fertiliser-fuel-feed-prices

3 Increased Energy Costs and Extreme Price Volatility

"The surge in the oil price is terrible news for businesses and consumers, and fundamentally this clarifies one of the key impacts of the Russia/Ukraine war - it will serve to further stoke inflation. Not only will energy bills keep going up, but food prices look set to jump even higher."

Russ Mould, Investment Director, AJ Bell [12]

Thanks to its wealth of natural resources, Russia is the world's third largest producer of petroleum and other liquid fuels, and the second largest exporter of crude oil[13]. Almost half of the gas used in Europe originates in Russia, while the UK relies on almost 5 million tonnes of Russian oil per annum.

The war in Russia has a complicated network of consequences for energy suppliers and users, with much of its gas travelling through a network of pipes in Ukraine. Any damage to supply pipelines or infrastructure severely limits supply. Immediately following Russia's invasion of Ukraine, the cost of oil per barrel hit seven-year highs and the price remains elevated due to sanctions imposed on Russia, insufficient output and a spike in demand as the pandemic recovery gathers pace.

Wholesale energy prices have also increased following the Russian invasion, with the cost of gas soaring as much as ten to 15 times above the norm[14] in March and remaining at elevated levels.

UK farmers are heavily dependent on energy sources across their business. The importance of gas in the UK food supply chain can't be overestimated, with an increase in costs affecting tasks such as the heating of poultry sheds and processing. In addition to the huge increase in energy costs,costof oil and diesel, vital to power tractors, other farm equipment and for tra nsportation of goods has hit record highs on an almost weekly basis, hitting farmers hard in the pocket.

[12] https://uk.finance.yahoo.com/news/what-russia-ukraine-invasion-means-for-consumer-gas-oil-food-prices-uk-121226298.html

[13] https://www.economicsobservatory.com/how-is-the-war-in-ukraine-affecting-global-food-security

[14] https://www.bbc.co.uk/news/business-60642786

The runaway cost of fuel and energy completes a trifecta of cost increases on commodities intrinsic to farming; fuel, feed and fertiliser.

Such a high level of price volatility makes it hard to plan and from a finance perspective, difficult to know what to do next in order to lessen the blow and reduce the gap between income and expenditure when costs are rising in all areas of the business. March and remaining at elevated levels.

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The Fuel, Feed and Fertiliser Trifecta

Irish farmer Jack Ronan runs one of Ireland's 10 largest farms. He says the reality is that farmers are facing enormous cash flow challenges due to the scale and speed of price increases.

"I've never seen as big a cash burn, ever. We need a bridging loan. The guy who supplies my feed can't afford to give me more credit. What bank is going to finance my losses for the next 18 months?"

4 Labour Shortages

"Data shows how heavily UK farms have relied on Ukrainian workers in particular, raising the question whether this source of workers will be disrupted by unpredictable events in that region."

Madeleine Sumption, Director of the Migration Observatory at the University of Oxford.

67% of the seasonal workers in the agricultural industry originate from the Ukraine in a typical year.

According to migration statistics from the Home Office, Ukrainian nationals are the second most common nationality granted work visas to work in the UK, with the seasonal workers visa invaluable for getting the workforce needed in place on farms across Britain to perform tasks such as planting, picking and packing.

In 2021, British farms welcomed nearly 20,000 Ukrainian workers to help support the labour shortage, assisting with farm work and short-term poultry processing. In contrast, Russians made up just 8% of the total, with 2,280 workers entering the UK.

The conflict has sparked significant fears across the industry, with concerns of how farmers will battle another potential labour shortage at a time when profitability is more at risk than ever and productivity is essential, not just to the health of the business but to meet increased demand for food supplies across the country.

The United Nations estimates[15] that 12.8 million people have been displaced by the war in Ukraine, with millions leaving the country and 17.5% of the population internally displaced. This could have a significant impact on the number of workers applying for a seasonal worker visa and arriving in the UK to perform vital agricultural roles.

Any labour shortage can be catastrophic for agriculture, with crops unable to be harvested left to rot in fields and, as we have seen in the pig industry which was already struggling with a lack of staff at processing plants, animal welfare placed at risk by an inability to move livestock off farm for processing.

This has a direct and immediate cost to farmers in the form of further increasing the cost of welfare, but can also place contracts in jeopardy and limit the movement of animals on and off farm, severely disrupting normal business operations.

[15] https://www.theguardian.com/business/2022/apr/10/uk-farmers-fear-fertiliser-fuel-feed-prices

5 Pressure To Quickly Scale

British farmers are also feeling the fallout of the war in Ukraine in the form of a growing pressure to quickly scale their farms in order to produce more. This would allow the UK to be less reliant on other countries to provide things like grain and sunflower oil.

The problem here is twofold in that increasing production requires more boots on the ground, but with fewer Ukrainian workers arriving, there's a growing workforce gap to fill.

More worryingly, rapidly scaling a farm business demands a lot of factors be considered. Moving too quickly as a result of external pressure to ramp up supply means many of these important considerations can easily be overlooked.

Both crops and animals require biosecurity to stay free of disease - without biosecurity, diseases can spread rapidly, diminishing entire flocks and crop fields.

This has a completely detrimental effect on the farm business' goal but requires time, consultation and a thorough understanding of the risks and possibility for disease incursion to be properly implemented.

The Solution

The challenges facing Britain's farmers as a direct result of the war in Ukraine are numerous, however that isn't to say they aren't surmountable.

While some issues may be outside of our control, such as the cost of fuel, other measures including policy change, along with mitigating measures and consultancy could alleviate some of those impacts.

Key areas to focus on include changes to fertiliser rules at government level to bring costs down by making more use of what is available, expanding the seasonal worker visa scheme and on-farm contingency planning to ensure that farm businesses have adequate insurance, appropriate funding measures are explored and that on-farm operations are not further disrupted by avoidable disease outbreaks.

Reduce Fertiliser Costs

While reducing fuel costs may not be possible, there is the potential for fertiliser costs to be reduced. Government ministers have recently agreed to a series of measures designed to make costs more affordable for farmers.

One notable measure is a government delay on plans to tightly restrict the use of urea-based fertiliser. Farmers will be able to continue to use urea but with the addition of ammonia inhibitors, signifying a compromise rather than total ban.

Another useful measure to help farmers mitigate the higher cost of fertiliser is permission to continue to use manure during autumn and winter sowing. The Environment Agency had imposed a strict new framework last year, under the Farming Rules of Water, which made it all but impossible for farmers to spread organic manure during the autumn and winter seasons. In light of the spiralling costs, updated guidance in this area means that organic manure spreading will be permissible.

Organic fertilisers however can lead to environmental problems and are often the topic of public debate. These concerns coupled with the high cost of fertiliser, calls for innovation within the sector, by way of using technology to process manure as a more acceptable product and support the shift from non-organic and natural fertilisers. Indiscriminate use of non-organic fertilisers can cause problems especially with overuse asa it can trail off into local rivers.

Organic fertilisers however can lead to environmental problems and are often the topic of public debate, whilst the indiscriminate use of non-organic fertilisers can cause problems especially within the local area, as the overuse of these products can cause it to trail off into local rivers, impacting the wildlife. These concerns coupled with the high cost of fertiliser, calls for innovation within the sector, by way of using technology to process manure as a more acceptable product and support the shift from non-organic and natural fertilisers.

The Sustainable Farming Incentive has also been updated, which makes more farms eligible to apply for payment from the government to use green manures and sowing nitrogen fixing plants.

[16] https://www.theguardian.com/business/2022/apr/10/uk-farmers-fear-fertiliser-fuel-feed-prices

While these moves do go some way to helping farmers rely less on more costly forms of fertiliser, some farmers will slip through the gaps as the SFI isn't suitable for all farm businesses and payment rates need to match with the actual cost incurred by the farmer. NFU President Minette Batters said[16], ***"While the offer available now will be suitable for some farms, it's clear that there are still not viable options for all. It's essential... payment rates properly recognise the public goods they will be delivering."***

Increased Seasonal Worker Visas

To help mitigate against the shortage of workers vital to picking, sowing, processing and packing, the NFU has requested an increase in the number of visas available. Around 30,000 have been granted so far, but an additional 10,000 are being requested.

Lifting some of the conditions around a visa being granted could also help to increase the number of seasonal workers entering UK agriculture. Removing the English language requirement for example, could make more seasonal workers eligible for a visa, helping to alleviate labour shortages and ensure that crops aren't left to rot in fields and livestock is processed on schedule to keep farm operations running smoothly.

In the face of spiralling feed, food and fuel costs, the government could once again look at its guidance on wages for seasonal workers which in February were increased 6.5% above the living wage[17]. Bringing the salary requirement in line with the living wage or spreading the cost along the supply chain would help to alleviate some of the financial pressure being felt by British farmers.

[17] 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.

[18] https://www.nfuonline.com/updates-and-information/seasonal-worker-scheme-wage-requirements/

Reduce Reliance on Gas

Carefully choosing fuel sources, and installing efficient technology to maximise the use of fuel could help to drive down energy consumption. Heat exchangers, which many poultry farmers now use, could reduce gas consumption by as much as 55%[18], helping farmers to tamper down some of the increased energy expenditure arising from soaring wholesale gas prices.

Heat exchangers are highly efficient, meaning less of what is used is wasted, bringing more benefit per pound spent on energy than would otherwise be the case.

Manage Food Wastage

With feed another key area where costs are spiralling, reducing the amount wasted or spoiled could also represent significant cost savings.

There are a number of ways in which feed silo storage waste can be reduced, to minimise the amount of food that is wasted or spoilt. Storing feed in a silo typically means that the feed will maintain its nutritional quality for longer, prevent excess spillage, and as long as the silo is well maintained, the feed is protected from the elements and wild animal ingress.

The maintenance of feed silo storage is also critical, and is a part of the biosecurity measures that should be managed and followed on-farm. Where there is a lapse in maintenance, it can lead to significant issues and in cases; disease ingress. Bacterial Salmonella, a major microbial hazard in animal feed, can persist for long periods of time and when introduced to large volumes of feed can lead to contamination of the livestock on-farm.

Ensure Housing is Efficient

Livestock housing in poor state of repair is inefficient to run. Gaps around windows, roofs, floors or around walls let heat escape. Repairing damaged housing stock to ensure optimal ventilation and insulation for example not only makes them more cost-effective to maintain, it helps to ensure better livestock performance and strengthens biosecurity.

Investment in refurbishment or construction of farm buildings can be offset with tax relief allowances such as the Annual Investment Allowance (AIA) and Structures and Buildings Allowance (SBA) as well as the new Poultry Health and Welfare Pathway will provide grants for improvements to support gradual and continual improvement in farm animal health and welfare.

Prioritise Biosecurity

Disease ingress is one of the single biggest threats to on-farm operations today. This is more apparent than ever as the UK's farmers deal with the aftermath of the worst ever outbreak of avian influenza on UK shores.

Having the additional cost of disease to bear on top of the already soaring costs of feed, fuel and fertiliser, could spell disaster for many farms already struggling to match expenditure with income in the face of unexpected price rises across key inputs.

Strengthening biosecurity policies and procedures better protects the farm business, its livestock and livelihood from the additional costs and operational disruption that the presence of disease signifies. Whether that's the cessation of on-farm operations, the inability to move livestock on and off farm, the reputational damage and threat to commercial contracts, disease incursion is costly and inconvenient.

For those farmers wishing to scale their farm to meet the food security challenges or offset shortages of grains and other crops arising as the result of the war, overlooking the importance of biosecurity can compromise not just that growth but the health of the business overall.

Prioritising biosecurity is also a prerequisite for being an insurable business – a vital safety net for today's farmers. Without sufficient measures in place, the money invested within a farm business could be wasted should issues occur.

It is common for farm insurance brokers to need evidence of sufficient biosecurity measures, contingency planning and a risk assessment in place in order to provide adequate cover for the premises. This pre-planning allows farmers and the insurers to fully evaluate the products and protection used within the business, understanding the benefits and the practicality of them to provide the correct level of cover. This additional planning for a farm-business can also help farmers to prioritise the improvements needed on-farm, ensuring that their money is not wasted on measures that will not work.

The more planning that is put in place, the better the biosecurity on-farm becomes.

How Livetec Can Help

While it's clear that farmers can't directly control challenges such as fuel price volatility, there are a number of areas where it is possible to mitigate against the impact of the war in Ukraine and claim back operational efficiency.

Livetec is creating the future of biosecurity and has worked in collaboration with the agriculture industry and Britain's farmers for more than a decade.

We are trusted to help Britain's farmers navigate the challenges they face with confidence and have a range of solutions which are designed to protect the future of farming.

The war in Ukraine is a fluid situation, which is impacting both the cost of commodities and government legislation very quickly. Keeping pace with those changes, and being able to adapt to new frameworks, support systems and regulations swiftly is vital.

Livetec's scientifically led solutions are designed to help British farmers future proof their business. Our wrap around services are delivered by industry experts backed by years of academic and scientific research. We equip farmers to navigate unexpected challenges with contingency plans and best-practise preventative measures to drive down risks and ensure business continuity.

Whether planning for problems, guiding you through new regulations, identifying funding and grant options or making your business insurable, Livetec's expert support and leadership can protect your profitability, your livestock and your livelihood in even the most challenging and unexpected of circumstances.

For more information, visit www.livetecsystems.co.uk

Livetec is the leading provider of livestock protection - the go-to partner for all biosecurity issues across the industry.

We provide an extensive range of innovative solutions for our clients:

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  - Bespoke Biosecurity Services
  - Contingency Planning Packages
  - Biosecurity Services for Insurance Purposes
  - Enterprise Level Biosecurity Solutions
- **On-Farm Operations**
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