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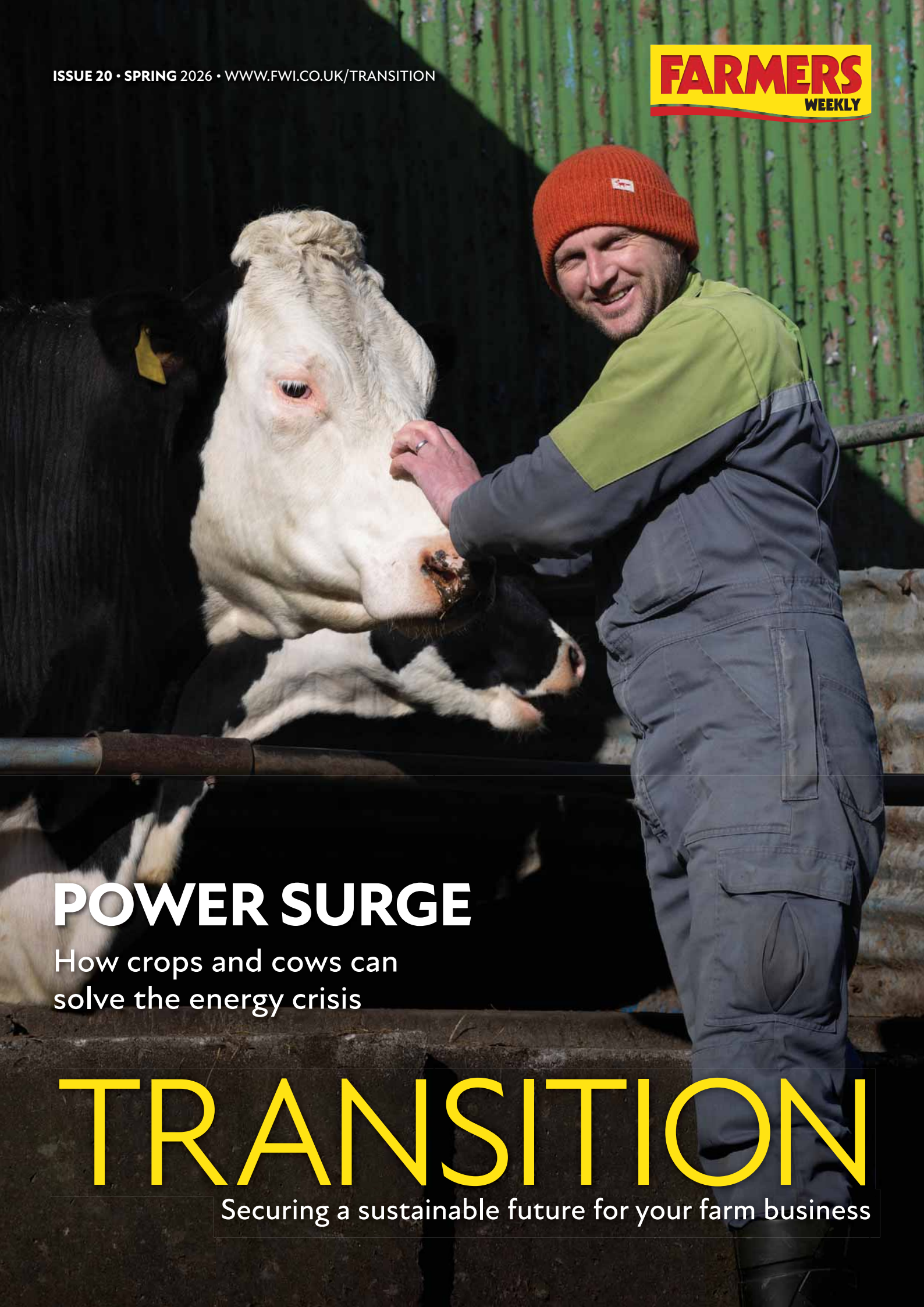
FARMERS WEEKLY



POWER SURGE

How crops and cows can solve the energy crisis

TRANSITION

Securing a sustainable future for your farm business

How to plot a path through global upheaval

Welcome to *Transition* – the quarterly supplement from *Farmers Weekly* to help secure a sustainable future for your farm business. As global events continue to throw the world into turmoil, we hope the following pages might provide some suggestions for long-term strategies that will help plot a steady course through the upheaval and volatility.

Amid soaring fuel and fertiliser costs, our cover story focuses on biomethane energy production – a farm-based diversification that could generate some much-needed income for livestock producers and arable growers.

With farm labour in short supply, we visit one farmer who has torn up the dairy staffing playbook and introduced a shift system to establish a better work-life balance and attract top-notch employees to his go-ahead team.

There is some solid, good news, too. Last year saw UK livestock exports break the £2bn mark for the first time as the UK's reputation for producing high-quality, safe food continues to rise on the world stage. At home, trust and confidence in British farming has also hit new highs. To capitalise on this, our market analysts pinpoint the consumer trends that could unlock better returns both home and abroad.

As always, we'd like to thank our Transition Farmers for sharing their winning strategies – as well as the pitfalls to avoid. We're also grateful to our Transition Partners for sharing their expertise, help and invaluable advice.

For more about our Transition initiative – and farm management advice, please visit our knowledge hub at **fwi.co.uk/transition**.

Johann Tasker, *Transition* editor

OUR PARTNERS

The *Farmers Weekly* Transition Partner Network is a UK-wide community of farmers, industry stakeholders and influencers working together to secure a sustainable future for UK agriculture. If you would like to join and want more information, contact Anna Eccleston at anna.eccleston@markallengroup.com

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CONTENT HIGHLIGHTS

Collaboration is key to building a resilient future for dairy

Oxfordshire-based dairy farmer David Christensen says fair pricing and farmer-led collaboration are central to delivering sustainable milk production

UK dairy farmers are operating in an increasingly complex environment, with volatile markets, geo-political instability, rising input costs and climate pressures all reshaping how businesses are run.

Dairy farmer David Christensen believes that collaboration across the supply chain is essential to tackling these challenges, providing greater stability and a platform for progress.

Transparency in supply chains

The Christensen family has farmed as tenants since 1968 and today runs two dairy herds, milking more than 950 spring and autumn-calving cows.

The family also runs a small ice cream business, while David has recently become joint Chairman of the Tesco Sustainable Dairy Group (TSDG).

The group's focus is on fostering closer, more transparent relationships between farmers, processors and retailers, something which David believes is of mutual benefit and hugely important to building a sustainable future for the sector.

"The first rung of sustainability is a fair price," he says. "Profit is not a dirty word, it enables reinvestment and resilience."

The TSDG enables regular discussions on cost of production involving farmers, processors and retailers, helping ensure pricing reflects changing conditions.

"What we don't want is farmers being starved of cash when costs are rising," he says.

Farmer-led knowledge sharing

Alongside pricing, farmer groups such as the TSDG are playing a growing role in sharing knowledge and improving standards.

"I always say: if there's a problem, the answer is usually in a room of farmers," says David.

He adds that having a structure to facilitate those conversations helps turn discussion into action, particularly when it comes to adopting best practice across areas such as antibiotic use, biodiversity and water management.

Testing ideas before scaling up

Groups like the TSDG can also act as a testing ground for new approaches and technologies.

Proposals can be trialled by a smaller number of farmers before being rolled out more widely, provided there is strong scientific backing.

"The key is making sure the science is robust before making recommendations," he says.

For example, on his own farm, established technologies are already delivering benefits. Wearable sensors on cows monitor behaviour, helping detect fertility cycles and identify illness earlier, allowing faster intervention and reduced reliance on antibiotics.

Balancing production and the environment

Environmental practices are also top of mind for the group. Measures David has introduced on his own farm include nectar and pollen strips, wild bird seed mixes, nesting boxes and hedgerow planting, with 400 meters added this winter.

"We try to soften our farming around the edges," says David, acknowledging that intensive production in field centres can limit biodiversity.

The aim, he adds, is to leave the farm in better condition for whoever manages it in the future.

Looking ahead

Looking ahead, David believes the priority is balancing the needs of farmers, consumers and the wider supply chain.

This balance is particularly important given the wider geo-political context, with David reflecting that "increasingly, I think food production will rise up the agenda again."

"We've got to leave this land in really good order because the country will need it for one purpose or another, regardless of who farms it in the future."

While the challenges are significant, he remains confident in the industry's ability to respond. "If you get farmers talking, they will find solutions."

To find out more

Visit www.tescoplc.com/sustainability/planet/agriculture

TESCO

Meet our Transition Farmers

These 16 farmers are sharing their journeys with us as they adapt their businesses

Beth Speakman
Essex

Farm size 275ha

Enterprises
Mixed arable, beef and sheep

Transition goals
- Bridge income gap
- Fully diversified business
- Widen the rotation

James MacCartney
Rutland

Farm size 162ha

Enterprises
Beef and sheep

Transition goals
- Reduce disease in sheep
- Be better than net zero
- Establish herbal leys

Vaughan Hodgson
P23
Cumbria

Farm size 244ha

Enterprises
Cereals, grassland, broilers

Transition goals
- Support the next generation
- Replace lost Basic Payment Scheme income
- Adapt to uncertain weather

Alan Steven
Fife

Farm size 138ha

Enterprises
Potatoes, brussels sprouts, parsnips, malting barley

Transition goals
- Reduce cultivations
- Improve soil health
- More resilient rotations

Andrew McFadzean
Ayrshire

Farm size 285ha

Enterprises
350 beef cattle, wheat, beans, barley, fodder beet

Transition goals
- Slash finishing time
- Reduce dependence on inputs using solar energy
- Improve grassland

Rachel & Richard Risdon
P30
Devon

Farm size 161ha

Enterprises
300-cow dairy herd

Transition goals
- Secure adequate labour
- Better understanding of Environmental Land Management
- Reduce carbon footprint

Lucy Eyre
Welshpool

Farm size 51ha

Enterprises
Cattle and sheep

Transition goals
- Striking the right balance of livestock numbers
- Reduce inputs and maximise the use of grass
- Re-establish direct meat sales

Eddie Andrew
P14
Sheffield

Farm size 73ha

Enterprises
Dairy, milk delivery service, ice cream parlour and farm shop

Transition goals
- Co-operating to reduce costs
- Establish a new dairy
- Reduce carbon footprint

Irwel Jones
P20
Carmarthenshire

Farm size 375ha

Enterprises
1,500 ewes on owned and rented land, suckler cows and followers, root crops

Transition goals
- Manage natural woodland
- Plant hedgerows
- Rely less on volatile inputs

Andy Bason
Hampshire

Farm size 800ha

Enterprises
Cereals, spring beans, oats, linseed and oilseed rape

Transition goals
- Cut carbon emissions by 30%
- Establish 10ha of agroforestry
- Establish 10ha of woodland

Duncan Blyth
Norfolk

Farm size 2,650ha

Enterprises
Cereals, oilseed rape, sugar beet, pulses, grassland, woodland, wetlands

Transition goals
- Improve soil health
- Develop natural capital revenues
- Achieve net zero by 2030

Fergal Watson
P23
County Down

Farm size 285ha across three units

Enterprises
170-cow suckler herd, beans, wheat, spring barley, oats

Transition goals
- Recruit/retain farm staff
- Restructure suckler herd
- Improve business resilience

Philip Vickers
County Durham

Farm size 1,250ha

Enterprises
Winter wheat, oilseed rape, spring barley, spring beans, lupins, rotational grass; share-farming agreement with tenant sheep farmer

Transition goals
- Maintain margins while changing approach
- Improve soil health and resilience
- Enhance natural environment

Kate and Vicky Morgan
P30
East Yorkshire

Farm size 1,700 breeding sows

Enterprises
Weaning 1,000 pigs a week – finished on-site and through B&B arrangements with local farmers, 140ha rented out

Transition goals
- Facilitate structural change in supply chain
- Establish more influence over own destiny
- Diversify

Ed Shuldham
Wiltshire

Farm size 1,800ha

Enterprises
Cereals, oilseed rape, oats, forage and grain maize, peas, solar, biomass, anaerobic digestion, events and property diversifications

Transition goals
- Help shape Sustainable Farming Incentive through participation in pilot
- Make more use of data
- Take natural capital

Matthew Williams
Shropshire

Farm size 1,100ha

Enterprises
Cereals, oilseed rape, winter beans

Transition goals
- Improve profitability and margins
- Continue to improve soil health
- Control and optimise input use

PARTNER PERSPECTIVE

HUTCHINSONS

Crop Production Specialists

Time to review current farm practices

Farmers must take a hard look at current farm practices to try finding ways of making businesses more environmentally, financially and technically sustainable.

This was the message to come out of an Agriculture & Water Workshop sponsored by Essex & Suffolk Water.

The 17th annual event which attracted almost 100 local farmers and growers, heard from a range of speakers about the need to adapt to the many pressures facing the sector. For some, that might mean finding small "marginal gains", while for others, more significant structural decisions could be needed, Farmacy agronomist, Jim Woodward, said.

"Every business needs to be flexible, adaptable and open to change. The key is to asses your current farm practice, understand the changes that are happening, and alter what you do to get to a 'new farm practice'. Those that don't adapt will inevitably struggle."

Financial pressure mounts

Figures from Hutchinsons head of farm business consultancy, Will Foyle, suggested that subdued commodity prices and stubbornly high fixed costs meant many farms could face a negative margin from production in 2025/26, on top of three years of sub-optimal profits, and the withdrawal of the BPS.

However, the variation in performance between the top, average, and bottom performing businesses was "staggering" and the gap was widening with increased economic and climatic volatility, he said.

One of the biggest pressures was overhead costs, with depreciation in particular posing a "hidden killer" for many businesses, he added. "Gross margins are something farmers have always considered, however, while they are useful, they're not enough on their own, as 55% of costs are not accounted for if you rely on gross margins alone."

Mr Foyle highlighted some key characteristics of top-performing businesses, based on analysis of Defra's Farm Business Survey data. Typically, top performers:

- Produce more from the area farmed (17% higher revenue than the mid-performers) - potentially due to better crop choices, higher yields, attention to detail, and better crop marketing
- Rely less on BPS income
- Have better cost management - machinery costs are 15-20% lower, while labour is 16-38% lower. This is likely due to better budgeting and cost analysis, clear replacement policies, economies of scale, better matching of machinery requirements to farmed area, and use of contractors where cost-effective to do so
- Have lower rent and finance costs (25-30% lower) - driven by lower borrowing interest costs
- Put a similar amount of land into stewardship schemes as other farms, but utilise options more effectively to generate a higher net margin, reinforcing the need for "right option, right place"
- More likely to diversify, and do so more successfully

Help at hand

Although significant improvements had been made to agriculture-related water quality issues in recent years, speakers said nitrate, phosphate, and sediment remained challenging issues for water companies to deal with.

Will Foyle
(Hutchinsons head of farm business consultancy)

Grants are available in certain priority catchments to help farmers address specific water quality issues though.

Farmers are urged to contact their local water company or catchment advisor to find out more about the schemes available in their area.

Six Steps to Success:

1. Complete a full enterprise review (strengths, weaknesses, opportunities and threats) and consider new income streams
2. Understand costs of production and cut overheads by 5-10%
3. Use precision data to target yield improvements - 3% yield gain could be worth 20-30% on the bottom line
4. Secure a structured financial plan and forward budget for a rolling three-year period
5. Build soil health and resilience
6. Develop people and purpose within the business - good, happy staff can make all the difference.

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Low-input farming in the spotlight as costs rise

As the Transition period progresses, geopolitics and conflict have once again put pressure on input cost and supply. **Louise Impey** looks at strategies to protect farm businesses from volatile markets

Events in the Middle East have seen fertiliser and fuel prices skyrocket, renewing interest in farming systems that are less dependent on artificial inputs and not so exposed when global turmoil cause market prices to shift. Moving away from high-input production methods towards a model that prioritises soil health, biodiversity and long-term business sustainability, with its associated cost structure changes, is working well on many farms.

The aim is for nature and farming to work together, for the benefit of wider society, while also ensuring a profitable future for the farm – even without government support. "Farmers have a responsibility to manage the landscape without abusing nature," believes Chris Clark of Nethergill Associates, who says there is a sweet spot for every farm where profitability is at its highest and nature is at its optimum. "We call it farming at maximum sustainable output [MSO]," he explains. "Beyond that point, artificial substitutes or inputs have to be used to drive output. And that increases the farm's reliance on industrial energy, which is proving to be a problem at the moment."

Hitting the sweet spot

To get to this sweet spot, farmers need to sub-divide their variable costs into productive variable costs and corrective variable costs, he believes. Productive variable costs are those that work with nature, such as home-grown feeds, bedding and manures, while corrective variable costs are those based on industrial energy, such as artificial fertiliser. "The aim is to mobilise the >

HIGH-OUTPUT SYSTEMS: ARE THEY ALL BAD?

Common opinion on high-output farming systems suggests they are bad for the environment, incur extra input costs, increase risk and have higher carbon footprints. That is not always the case, says Dr Christina Baxter of Adas, who questions whether minimising input costs is always the better way, especially in arable systems.

Her analysis of Yield Enhancement Network (YEN) data shows that higher yielding crops reduced greenhouse gas intensities by one-third on a per tonne of output basis. In addition, these crops were more effective at capturing nitrogen from non-synthetic sources and had higher gross margins. "High yields don't necessarily mean high inputs," she points out. "Remember that yield dilutes variable costs and that there is a huge range of variable costs used on cereal crops, with the average being £450/ha. That means less than 3t/ha is needed to pay them."

The more pertinent question for most arable farmers is how to make input reductions without compromising productivity, she adds. This year, in particular, the current economic situation indicates that yield will be essential. "It is about management rather than inputs. The other issue is land use – if output declines, we will need more land for food production, so we need to focus our efforts in the right places."

MAKING THE NUMBERS WORK

At Neidpath Farms, Peebles, in the Scottish Borders, the focus for farm manager Matt Griffin has been on building a farming system that works with nature while being financially resilient. Matt is an NFFN member and he has moved away from high-input methods to create more opportunities and reduce the farm's reliance on subsidies.

Changes introduced across the four farms covering 1,012ha since April 2021 include replacing Salers cattle with Angus and reducing six sheep breeds to Romneys and Romney crosses, while moving to an adaptive multi-paddock grazing system with long rest periods.

Fertiliser use has been halved each year, with fuel bills also coming down as the new bale grazing system made setting bales out pre-winter more efficient. Vet bills have remained steady but more emphasis has been put on prevention. Numbers are as follows:

- Concentrate animal feed – down 75%
- Fertiliser – down 100% (£40,000 to £0)
- Fuel – down 40%
- Stocking level – up 40%
- Cattle value – up 500% (£120,000 to £600,000).

Matt's tips for those considering a similar transition are to be prepared for three years of disrupted cashflow, to monitor livestock condition carefully and to reduce stock numbers by 10-20% for the first two years. The reduction is needed while set stocking is replaced with mob- or rotational grazing.

His final point is to use the best water and fencing infrastructure you can afford, even if it means doing the work in stages. That is because the cost of replacing it is more than the savings made on the original purchase.


Matt Griffin

< free-issue resources, such as sunlight, as much as possible, so that you aren't having to push yield beyond what the land is capable of."

Profit margin pressure

Using large quantities of fossil fuels, artificial fertilisers and bagged animal feed will only add pressure to profit margins that are already very tight at a volatile and uncertain time on the world political stage, he warns. "We're currently seeing rising energy and fuel costs caused by the Gulf conflict, as well as disruption to supplies. That really emphasises how unsustainable it is going to be to maximise production in this way."

A report called *Farming at the Sweet Spot*, published by the Nature Friendly Farming Network (NFFN) and The Wildlife Trusts, shows up to a 45% increase in commercial return where nature-friendly farming methods are being used. Taken from 165 farm business accounts, the highest return was achieved by lowland livestock farms (45.3%) and the lowest by lowland arable units (9.5%). ■

CASE STUDY: HOMER FARMING, WILTSHIRE

There was no "light-bulb moment" for Wiltshire farmer Geoff Homer when he decided to change the direction of the family farming business and concentrate on reducing inputs as much as possible. As costs of production rose in both dairy and arable enterprises, Geoff realised that lining other people's pockets was not going to secure the future of the business or create the sustainable farming model essential for taking it forward.

Instead of pushing for higher milk and grain yields, he put the focus on profit and margin. That called for a different mindset and some step changes – getting more milk from grass, learning a lot about nitrogen, reducing overall reliance on artificial inputs and making soil health a priority.


Geoff Homer

Perfect timing

Given recent headwinds and the financial pressures being felt by the farming sector, his timing couldn't have been better. With two tenanted farms and one contract farm agreement covering 1,100ha near Marlborough, Homer Farming does not own any land but does have machinery and cows, along with 13 full-time members of staff. As such, the business structure means any profits have to be shared among two parties. "That concentrates the mind," says Geoff. "I enjoy farming in this way as it drives the thought processes and means we have to farm well. It also ties in with the signals that we are getting from the government."

In the past four years, Homer Farming has slashed purchased inputs as far as it can. With the help of an agronomist and a vet, both of whom are on board with his vision, profits are up, even at current commodity prices. With three dairy herds plus youngstock across the three sites, the system has been changed by introducing different genetics and breeding, so that they can push grazing and the use of home-grown forage as much as possible. "On the contract farm, we have also integrated the dairy with the arable side of the business, milling the crops on site so they can be fed to the cows," says NFFN member Geoff. "Our bagged feeds bill is right down."

Block calving

In 2025, grazing took place for 11 months of the year. The herds have moved to block calving, to help reduce workloads, bring costs down and get more production from grass. Fertiliser has been a particular focus. As well as making better use of slurry and clovers, Geoff made the move to liquid fertiliser eight years ago for the greater precision and efficiency it offered.

He has taken that a stage further and now melts urea on-site, applying it as a foliar

treatment through a Tow and Fert machine. "With bagged nitrogen, you get 50-60% nitrogen use efficiency, and with liquid nitrogen it goes up to 70%," he says. "Foliar nitrogen takes that up to 90%, so applying just 9kg of N/ha is equivalent to 40kg of bagged nitrogen per hectare," Geoff explains.

The Tow and Fert machine is also used across the arable area. Based on last year's figures, polymer urea was £2.20/litre and his home-made urea worked out at 70p/litre. "It allows me to add a carbon source and other things to it too, so we can put in what is needed by the crops as we are going through them."

While insecticide is not used across the arable area, Geoff continues to bring down fly repellent and wormer use in the cattle herd. "We have positioned fly buckets around the dairies and observe the cattle closely. Just like people, some cattle attract more flies than others."

Vet and medicine costs have fallen and he makes a habit of questioning every input that goes into the dairies.

Diverse rotation

Direct-drilling of arable crops started when Geoff had the opportunity to hire a no-till pneumatic drill and give it a go. He then realised the importance of keeping the soil covered and having diversity in the rotation, before taking the plunge and integrating livestock. Reflecting the dairy success, input use has plummeted.

As nitrogen rates have come back, so has the need for fungicides, while using sheep to graze crops in winter and early spring has also contributed to fewer interventions. "Last year, after grazing the wheat, there was no need for any plant growth regulators and we used just one fungicide for yellow rust at a cost of £9/ha. The dry weather helped, of course."

Four years ago, Geoff started grazing winter barley with sheep, as it had an early net blotch outbreak. "I knew that fungicides would not work so I had nothing to lose. It was successful, so we now graze wheat, barley and oilseed rape." Putting the sheep across crops removes the diseased leaves and takes away some biomass, he explains. "It shocks the plant, which then reacts by putting its roots down and then regrowing."

Grazing oilseed rape requires more caution, as it is important the sheep do not remove the growing point, he adds. "We have not used any autumn or spring fungicide on the rapeseed crop for the past two years, except for a sclerotinia treatment, and flea beetle has not been an issue."

An interest in soil biology has seen Geoff working with his agronomist Ben Arthur to brew microbial inoculants, which are then applied at drilling. The idea is that they kick-start the soil biology and support healthy plant and root growth, eliminating the need for seed treatments and starter fertiliser.

Next steps

His next step is to do more to exploit biology. He has a compost turner on order and will be using manures to produce compost for use across the farm. "We are also going to start growing four-way variety blends," reveals Geoff. "They should help with our mission to keep cutting inputs and reducing risk but maintaining yields."

HOMER FARMING AT A GLANCE

Chisbury Lane Farm (home farm)
- 140ha of medium to heavy clay loam
- Converted to autumn calving in 2013
- Moved from pedigree Holsteins pushing 11,000 litres to a 570kg cow producing 7,000 litres, 4.5% butterfat, 3.6% protein
- New heifer shed, parlour and farm entrance in 2019, plus lined lagoon expansion and extra cubicles

Warren Farm
- 220ha medium to heavy clay loam, originally contract farmed and became a farm business tenancy in 2016
- Milking 340 spring calvers, 6,000 litres, 4.8% butterfat, 3.7% protein
- New parlour, 5,000 railway sleepers, new water system and 113ha split into paddocks
- 80ha recently sold – now two landlords

Waglands Farm
- Contract farming agreement was started in 2022
- 600ha of medium clay loam soil with half of the farm very flinty, and 100ha for the dairy
- 300 autumn-calving cows producing 7,000 litres, 4.5% butterfat, 3.6% protein
- Crops include grass, maize, wheat, rye, spring barley, peas, oilseed rape and cover crops

The Milkyard
- Started January 2021 with an on-site vending machine for pasteurised milk
- Moved on to making ice cream
- Currently selling 60 litres/day of milk, plus other local produce
- Plans to push ice cream production and produce yoghurt and butter

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UK farms could profit from biomethane revolution

The potential market for biomethane production is huge for UK agriculture. **Jonathan Riley** looks at farmer opportunities to decarbonise and diversify

The UK produces about 7 terawatt-hours (TWh) of energy from slurry, food waste, manure and crops, each year meeting just 1% of gas demand. However, the potential biomethane demand and output levels dwarf that figure.

The National Energy System Operator has recommended to the government that UK supplied biomethane should increase to 36TWh by 2035 and 65TWh by 2050. It sees biomethane as essential to achieving an affordable energy transition to low carbon sources. But a report by bioeconomy consultancy Alder Bioinsights suggests output could potentially reach 120TWh of biomethane produced by 2050 – enough to heat almost half of the UK's homes.

The UK's largest gas distribution network operator, Cadent, has confirmed it aims to decarbonise gas in its pipelines by reducing its use of fossil fuels and switching to biomethane. The company supplies 11m homes and 40,000 businesses and says the switch is good news for UK agriculture, which is expected to supply the majority of feedstocks.

Over the past year the biomethane sector has experienced an unprecedented level of government interest, according to Cadent. The government is now actively preparing a long-term policy support package for the biomethane sector to meet the country's decarbonisation targets and support British farmers.

Cadent chief strategy and regulation officer Dr Tony Ballance says: "What we have here is a situation where the stars are aligning for the farming sector – the UK right now being hungry for home-grown, renewable energy, and a farming sector that has all the ingredients to make it happen. Whether that is growing crops to feed the anaerobic digesters, or having a biomethane production facility on your land, biomethane is an incredible opportunity. It means farmers can develop new income streams, continue to grow food and improve soil health, and help deliver a more cost-effective way of decarbonising the UK's energy needs."

Later this year, Cadent will begin offering a new cost structure for biomethane in a bid to make injecting the gas into its network more accessible to small-scale producers. The company hopes this will accelerate growth in the biomethane sector and should mean new opportunities for farmers to grow feedstocks will increase rapidly in the coming months and years.

Buyers are already keen to build long-term relationships with farmers and set up multi-year offtake contracts, to lock in their input materials >

PHOTOGRAPHY: BIOLECTIC, MAG/JUDITH TOOTH, NEW HOLLAND, JONATHAN PERUGIA/GAIA VISUA, TOM HAWTHORNE, NATHAN STIRK

in a competitive market. In the past 12 months, large businesses – such as pharmaceutical company Astrazeneca, and food and drink giant PepsiCo – have decarbonised their UK gas demand by signing contracts with biomethane producers Future Biogas and Engie.

The general gas network is also ready to accommodate biomethane at scale. Cadent says it wants to work with farmers and developers to ease the process to connect into the network, as well as make it more affordable. For example, where there is opportunity to "cluster" new farm sites, it wants to consider the options for connection costs to be shared. "There is an immediate opportunity here for farmers to increase their income streams while continuing to use the land for growing food and crops," says Tony. "We want to make it very clear that we are interested in working with all potential developers, no matter the size of the operation," he says.

So what are the benefits, opportunities and systems available to reduce emissions from biomethane production on farms?

Biomethane benefits

Cost-effective decarbonisation

The Green Gas Taskforce report produced by business consultant Baringa showed that biomethane from sustainable feedstocks – especially when delivered through large-scale anaerobic digestion (AD) plants – could cut the cost of reaching net zero by £150bn-£220bn. This would make it one of the most cost-effective climate solutions in the UK's net-zero pathway.

Seamless supply change

One reason for the lower cost is due to biomethane's chemical structure, which is identical to natural gas. That means there is no need for costly changes to the existing supply chain systems and domestic equipment.

Energy supply

A downside of solar and wind power is that they are both weather dependent and supplies fluctuate. Because AD plants run 24 hours a day, the energy supply is constant, providing known amounts of fuel to networks and farm equipment.

Environmental

The potential environmental benefits are enormous – models calculated by the Anaerobic Digesters and Bioresources Association suggest 27m tonnes of carbon dioxide could be removed from the atmosphere each year. Individual farms can reduce their carbon footprint by 30%. This is achieved through the capture of fugitive methane and carbon removal during the AD process. Carbon removal occurs when biogas is captured from feedstocks and split it into carbon dioxide and methane, creating refined biomethane.

Because methane is roughly 80 times more potent as a greenhouse gas than carbon dioxide, over the first 20-year period, removing it from slurry before it reaches the atmosphere is key in reducing farming's carbon footprint.

Valuable by-products

The by-products of biomethane production can also help to cut emissions and offer cost-effective alternatives to artificial fertiliser and livestock bedding. Digestate from the AD plant is nutrient rich and the nitrogen content is in a form

CASE STUDY: TOM HAWTHORNE, FLAWBOROUGH FARMS, NOTTINGHAMSHIRE

Farm owner Tom Hawthorne says Flawborough is using its land as a natural asset to work with the private sector. The farm extends to 300ha, but a key part of the Flawborough Farms' business is contract farming for 13 other holdings and estates, taking the overall farmed area to about 3,200ha.

"Our mainstay is still winter wheat, which takes up half the farmed area," says Tom. About 25% of the rotation is under maize, or whole-crop barley and rye, to produce feedstocks for the Future Biogas contracts. The remainder is down to oilseed rape, beans, spring barley and oats as break crops. "I don't have a problem with using the land for non-food crops. Above all, our aim is to be sustainable and that means being financially sound," says Tom.

Using the land to grow non-food crops is part of Flawborough Farm's history. "We are the third generation here. My grandfather used a quarter of the farm to grow crops as feed that fuelled the horses, and my father grew industrial oilseed rape. So non-food crops are not a new thing here," Tom reflects. "We are simply using our assets to link up with the private sector and make an income that is free from any government support."

Contracts with Future Biogas

Agreements are up to 15 years long and based on a cost of production plus margin model. Costs of growing the crop are calculated with figures on fertiliser, seed, agchems and operational inputs totalled up per tonne.

Once the costs are known, Future Biogas adds on a margin figure for an average yield. Payments are made in December, about six weeks after harvest, and there are no rejections, quality queries or storage issues. "It means we are paid a fair price that isn't subject to the usual volatility in wheat prices, and that really helps because know exactly what will get in terms of margin," says Tom.

An additional payment is made if the crop is grown using sustainable techniques such as low tillage and no artificial fertilisers. This is achievable because the digestate resulting from the AD plant processing is delivered back to Flawborough and applied to the growing crop farm free of charge.

For each tonne of crop, Future Biogas returns 500kg of liquid and 200kg of solid digestate. Digestate contains nitrogen, phosphorus and potassium, as well as high-value micronutrients that are not present in inorganic fertiliser.

"The whole setup is circular, and because we can cut down on our artificial fertiliser use, it reduces our carbon footprint too," says Tom.

Gas bottled using the Bennamann system can power converted T6 and T7 Case New Holland tractors

that is readily taken up by crops. Using digestate decreases the quantity of fertiliser needed by up to two-thirds. It also reduces the reliance on inorganic fertilisers.

That is crucial in farm carbon footprint calculations because inorganic fertiliser production consumes large amounts of energy, usually in the form of fossil fuels.

Another beneficial by-product is green bedding. The solid material left over from the AD process can be dried, pasteurised to kill off bugs, and converted into bedding.

Carbon dioxide production

When biogas is "upgraded", the biomethane and carbon dioxide are separated. While the biomethane gas is used for energy generation, the carbon dioxide fraction can be filtered to food-grade quality, which can be harvested for products like carbonated drinks.

Biomethane systems available

There is a wide range of systems suitable for farm production. The range covers slurry-, waste- and crop-fed digesters that create heat and electrical energy, along with alternative setups that capture fugitive methane from feedstocks and convert it to fuel to run machinery.

On-farm digesters can provide power for the home and business or – where the infrastructure is available – supply national gas networks. Farms may also operate as feedstock providers for off-site, large-scale AD plants that then feed biomethane into national gas networks.

Feedstock supply

One route is to supply feedstocks to a separate large-scale digester business such as Future Biogas. It operates 11 plants around the UK, including Lincolnshire, East Anglia and Yorkshire.

Feedstock director Angela Battle explains that the company has large-scale digesters fed on maize, rye, barley and other agricultural feedstocks.

The sites are supplied by a network of about 400 farmers, with each site sourcing feedstock from growers within a 15-mile radius. The aim is to keep transport use down, to minimise costs and limit the carbon footprint of the whole production process, says Angela.

How it works Future Biogas plants produce biogas and separate the biomethane from the carbon dioxide, she explains. The biomethane is then fed into the gas network as a direct replacement for natural gas. The carbon dioxide is currently used for industrial use such as putting bubbles in fizzy drinks, but the company are exploring permanent geological storage, which has the potential to make the entire gas production process carbon negative.

Future Biogas returns the digestate produced to the growers who supply the feedstocks. This meets the key aim of decarbonising the farming sector by providing low-carbon, nutrient-rich biofertiliser that improves crop yield and soil health.

The new economic model is based on long-term profitability without government subsidies, says Angela. For example, Future Biogas's site at Gonerby Moor provides more than 100 gigawatt-hours of renewable gas annually, which is load balanced through the grid to provide the gas needs of Astrazeneca's manufacturing operations.

On-farm AD and CHP unit

On-farm AD plants operated in tandem with a combined heat and power (CHP) unit are usually relatively small-scale units of 11-75kW, designed to run on slurry, manure and food waste.

The range in power outputs makes the system suitable for a wide range in cattle herd sizes – for example, 11kW is suitable for herds as small as 50 milking cows. Efficiency rates can reach 98% and, unlike wind and solar power, the energy is produced whether it is calm or windy, wet or dry, night and day, says Biolectric's UK operations director Gary Hague.

How it works Biolectric's AD plant and system is modular with installation typically taking about four days. Operation and energy production can begin immediately, explains Gary. The first step is the slurry intake, which is pumped from the farm's reception pit into a heated, insulated digester tank. "The fresher the slurry, the better – to capture as much methane as possible to conserve its energy potential and with the least loss to the environment," he says.

Inside the digester, temperatures are kept at about 42C. This supports methane-producing bacteria to break down the organic matter into biogas, which is approximately 60% methane and 40% carbon dioxide, says Gary. Cooled and filtered biogas, then passes into a combustion engine connected to a generator to produce electrical energy.

The generator supplies farm equipment such as robot milkers, lighting and ventilation, while heat produced by the digestion process can be used to heat water, dry crops or heat buildings.

Processed slurry or digestate is pumped into storage and separated into liquid and solid fractions which are important by-products. The liquid fraction can be used as a nutrient-rich fertiliser that can reduce a farm's carbon footprint and cut fertiliser bills. The solid digestate can be dried to create bedding, potentially saving thousands of pounds in bought-in straw, sand or >

< shavings, Gary points out.

The most cost-efficient way to manage a system is to use the power on the farm substituting it for bought-in energy. But the setup offers the opportunity to operate a hybrid model selling any surplus gas to the grid. Combined with savings and output, payback times are remarkably short. Setup costs start at £180,000, rising to £480,000 for the larger systems, however, payback times range from seven years down to as few as three years for a larger-scale system.

Bottled gas production

The Bennamann methane capture system creates automotive grade biomethane. It is ideal as a power source for vehicles and heating on remote, small-to-medium farms.

How it works The first step in the process is slurry collection from livestock housing, which is pumped into a reception tank. Slurry is then macerated on its way to a storage tank to prevent a crust from forming and to promote the release of biogases.

Bennamann director of public affairs Gilles Mayer says: "A cover that is designed to capture fugitive methane directly from the storage tank has been used previously, but this is undergoing a redesign so is not currently commercially available."

For now, the system relies on a slurry-fed AD plant to create biomethane. The captured raw gas can be piped through primary and secondary gas filtration systems to draw off hydrogen sulphide and moisture. Further upgrading takes place when the feedstock passes through a BioCycle unit – a processing unit that is available as a static or mobile unit. The unit upgrades the methane to a purity of 93-97%. A single BioCycle unit is capable of producing 180,000kg of bottled biomethane a year, says Gilles.

For on-farm use, products can be stored in tanks via pressurisation at 250 bar to create compressed natural gas or by subjecting the gas to extremely low temperatures to create liquefied natural gas (LNG). Cooling the biomethane to -162C and turning it into LNG reduces the volume to 1/600th of the gas state.

The biomethane produced is a high-grade, clean-burning fuel that is available for a variety of uses, explains Gilles. Outlay for the system varies widely according to the type of storage and upgrader systems chosen, but payback time can be as little as two to three years.

Bottled biomethane uses

Biomethane produced by the Bennamann system is used for the following:

- Tractor fuel for the converted Case New Holland 180hp T6 and the 270hp T7
- On-farm energy via the bottled gas for heating or electricity generation through a combined heat and power unit
- Off-grid power and charging through electric vehicle (EV) generators
- Grid injection – any surplus biomethane can be blended into the national natural gas grid where connections are available. ■

TRANSITION FARMER EDDIE ANDREW, CLIFFE HOUSE FARM, SHEFFIELD

Transition Farmer Eddie Andrew has long been a champion of low-carbon energy and he aims to be fossil-fuel free at Cliffe House Farm in the next five years.

Eddie is strongly in favour of slurry-fed anaerobic digestion (AD) plants and will have a Biolectric system installed this autumn. Slurry-fed systems have an unlimited, cost-effective supply of low-carbon fuel without having to give up land for food production, says Eddie. "This helps to protect our business and the country from volatile global fuel prices. It also reduces emissions in both the farming and energy sectors," he adds. Because biomethane is a cost-effective energy source, it could also contribute to lower food prices for the long-term.

At Cliffe House Farm, the foundation pad is ready for the 37kW Biolectric system to be installed in September. "We designed our new building with underground storage that will allow fresh slurry to be scraped into a reception pit and pumped automatically into the AD plant," Eddie explains. "The closed system means we will prevent emissions and gain sufficient, constant electrical power to run three robot milkers and cooling plants for the milk."

The major difficulty with the investment has been affording the £250,000 cost after additional costs incurred during construction of the cow shed swallowed up the budget. To continue with the project, the farm turned to its dairy-product customer base and the local community to set up a power purchase agreement. Funds raised by the community will buy the equipment and will then effectively become Cliffe Farm's power supplier. "It means we have an energy supplier that we can work closely with, and the community setup will offer us a known price for the energy we consume," says Eddie.

As well as the electricity production, the farm will produce biomethane for a hydrogen electrolyser to sell bottled gas to Sheffield Council's bus fleet. However, an alternative option being considered is to produce biomethane for the national gas network due to the farm's close proximity to Sheffield. Whichever the outlet, Eddie is committed to creating green energy from the farm's slurry. "Biomethane production is the golden goose that nobody seems to be aware of. We need to stop looking at our slurry storage as waste stores, and start to see them as fuel tanks," he stresses.

● **Turn to p5 to read more about our Transition Farmers**

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How market insight can guide Transition strategies

Consumer tastes and attitudes towards food and farming are constantly evolving. **Jonathan Riley** looks at the trends and hears how market insight can help livestock and dairy farmers benefit

Market intelligence is a vital tool in the Transition toolbox because it can highlight shifting demand and identify potential business opportunities, according to the AHDB.

With that extra insight, marketing and production strategies can be fine-tuned to better align with consumer demands that can help make the business more sustainable.

Current trends

Trust in British farming

Consumer trust in British farmers has risen to a record high, says AHDB lead retail insight manager Grace Withers.

Surveys carried out by the AHDB and Blue Marble show 77% of consumers believe farmers are trustworthy, with responses indicating the importance of traceability, provenance and animal welfare standards linked to British produce. The survey showed that trust means consumers are seeking out British products, which is a potentially valuable advantage for home-produced food, explains Grace.

Natural products

Consumers are turning their backs on ultra-processed food and are looking for healthy, natural alternatives. For example, lean meat, block butter and whole milk have shown positive trends over the past 12 months, says Grace.

Weight loss

Health drives are also increasing demand for red meat and dairy protein. Drug-based rapid weight loss programmes are increasingly popular but can cause a degree of associated muscle loss.

To combat this, people are turning to nutrient-dense red meat and dairy products such as natural yoghurt, which supply roughly four times the amount of protein compared with some plant-based alternatives, she says.

Cost focus

While consumers are seeking out protein-rich foods, the cost of more expensive cuts remains beyond some household budgets. This has seen a trend away from certain beef cuts and volume growth in lamb and pork.

Treats and eating in

Pressure on budgets has also seen a trend towards eating out less frequently.

This has boosted demand for premium retail products such as specialist cheeses and yoghurts as people look to replace the feel-good factor of eating out with treats at home.

Export growth

Britain's positive reputation for high-quality, healthy and traceable food extends beyond home markets, says AHDB international trade development director Jonathan Eckley. Last year UK meat and dairy exports exceeded the £2bn mark for the first time, driven by upturns in both volume and value.

The EU is still the key market but export activity to the Middle East, Africa, Asia and the US are increasing in quantities and scope of products that British farming can supply, says Jonathan.

This demand for protein is expected to keep growing as incomes and populations increase. There are also crucial export regulations being negotiated, he points out. In January this year, the UK government signed the UK-US Economic Prosperity Deal, which paves the way for sales of 13,000t of British beef each year.

In May, negotiations between the UK and the EU on sanitary and phytosanitary (SPS) regulations are expected to be at an advanced stage.

Once the agreement is finalised it will align the UK and EU SPS standards, making exports less complicated, which will benefit UK businesses and could grow the export market still further.

PHOTOGRAPHY: ANGUS FINDLAY, HOWIE AND SONS, EMILY FLEUR, HAPABAPA/ISTOCKPHOTO

Strategies to capitalise on consumer trends

Farmers can use market intelligence tools to spot emerging trends and align production and marketing with changes in demand, Grace explains.

Marketing strategies

The growth in consumer trust, local food sourcing and naturalness can be used as leverage in price negotiations, justifying a push for premium positioning of brands with retailers.

Targeted marketing should emphasise exactly what purchasing trends suggest is important,

such as the local, home-reared aspects of the product and guarantees of its production methods and wholesomeness, she suggests.

Social media is an increasingly powerful marketing tool and farm businesses can capitalise with regular, upbeat posts that demonstrate higher production, welfare and environmental standards. Social media can now also act as a direct selling platform. The TikTok shop was launched recently and has been used successfully to sell farm produce direct to customers.

Dairy strategies

Increases in demand for natural products such as butter and cheese might favour a diversification into processing. For example, cottage cheese has seen strong market growth, accounting for a third of the increase in cheese in the past year.

Another significant growth area is the health product kefir, with February sales figures up 44%, according to market analyst NielsenIQ 52 (NIQ 52). It is easy to produce, so venturing into this market could provide a valuable diversification, she says. Longer term considerations could include switching to the organic market. Sales in organic milk saw an 11.1% year-on-year increase, NIQ 52 figures show.

Direct selling through vending machines has also proved valuable in the dairy sector.

Red meat strategies

Potential openings for red meat could also be via direct retail through farm shops, box schemes and online stores to exploit the increased demand for local, unprocessed food.

Alternatively, farm businesses could join forces with already established online or local direct-selling outlets. Native and local breeds can add weight to the local story.

However, demand has also increased for wagyu meat due to its perceived eating quality, so wagyu genetics may yield benefits.

Traditional breeds also help pork and bacon sales, but the big differential for consumers remains outdoor-bred, which commands a significant premium.

Export strategies

The export market for British meat and dairy is an exciting space to be in and the AHDB is on hand to help with insight and advice, says Jonathan.

There are two routes into this potentially lucrative and growing market. One is to export direct. While this is a potentially valuable strategy, it does require significant investment in administration and equipment which must be inspected and meet the precise requirements of the chosen market, Jonathan says.

The second route is to partner with a business that is already exporting and act as a supplier of produce that meets the specific requirements of whichever market they are selling to.

Because the commitment is significant, consumer insight and market intelligence are vital research points, Jonathan says.

A successful approach to exporting requires watching the markets over an extended period of time to spot emerging opportunities, he says. It is then down to forging relationships with buyers.

A starting point is to get to the people who represent the market by visiting trade shows. Some are held in the UK so this would be a relatively easy step before looking to other global events. Crucial, though, is to keep the British reputation in the forefront of your mind, Jonathan stresses.

It is vital to maintain and improve standards of production, health and welfare because buyers are rigorous and valuable markets could be jeopardised if standards slip. ■

CASE STUDY: FERGUS HOWIE, HOWIE & SONS, ESSEX

Arable and pig producer Fergus Howie has used market research to develop strategies for both the home and export markets. The 220-sow breeding-to-finish herd is run alongside a 3,600-acre contract farming business near Tiptree in Essex.

Central to the marketing strategy for the pig unit has been the move to distance the farm from the threat of cheap, imported pigmeat undercutting UK ex-farm prices.

Fergus says he couldn't compete on price with cheap, intensively produced imports, but market research showed there was demand for a higher welfare, high-quality product.

"So instead we developed the Wicks Manor brand and invested in a cutting line to produce our own bacon, ham and sausages. The brand was formed around a high-quality reputation and underpinned by Red Tractor standards. Initially we sold at 18 different farmers' markets every month."

But the strategy was switched to supplying local outlets and now, 20 years later, the farm sells to Tesco, Asda, Waitrose and Co-op stores in the Essex area.

"We know roughly what supermarkets want profit margin but from there we can set our own, sustainable price," says Fergus.

As part of the brand's development, further research revealed that quality and traceability were key factors for overseas markets. Fergus was supported by the AHDB and travelled to a trade fair in Hong Kong, where he saw first-hand that there was a significant demand for UK produce.

"As Wicks Manor visited more trade shows and took space on the AHDB stands, demand grew. We found that the huge Asian market wanted the same as the British consumer – quality and traceability," he says.

The word "British" and the union flag are seen by overseas buyers as marques of quality. "They still think of a British man wearing a bowler hat and playing everything with a straight bat, so we have a head start with marketing," he says.

But production is nevertheless strictly licensed and the administration process is time-consuming and costly. To be export-approved, a Food Standards Agency accreditation is needed. Then regulations for countries may well differ, requiring more paperwork and investment, says Fergus.

For example, Wicks Manor has just achieved accreditation for the Japanese market. But the gain required further investment in facilities.

However, the hard work, market insight, commitment and investment have paid off for Wicks Manor. The farm, pig business and processing now employ 50 people, and throughput has grown utilising sourced Red Tractor pork to complement the farm's production of roughly 110 pigs a week.

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Wales' Sustainable Farming Scheme: What you need to know

The decision-making clock is ticking for farmers in Wales to commit to the new Sustainable Farming Scheme before the 15 May deadline. **Debbie James** reports

Spring is a busy and tiring season in agriculture as farmers juggle the demands of lambing, calving and establishing new crops.

This year, Welsh farmers have another task to shoehorn into their arduous workload – principally, a decision-making one. It has been years in the making, indeed at times it seemed the day might never come, but Wales' new post-Brexit subsidy scheme for farmers is finally up and running, the application window live, and the cut-off point is fast approaching.

The deadline date, 15 May, will be etched into farmers' minds as the traditional, final day for submitting their Single Application Form to claim the Basic Payment Scheme (BPS). Indeed, they can still apply for the BPS if they decide not to join the Sustainable Farming Scheme (SFS), and do so until that direct payment is phased out, but will face a 40% cut this year.

Some farmers are optimistic about joining the SFS, seeing it as a "no-brainer" for their businesses since they already meet some, if not all, of the demands on the list of actions the Welsh government expects in exchange for payments.

Payments

That tiered system allocates £70/ha on their first 70ha and the rest of the payment is capped at £2/ha, to make the budget go further. There is other cash too, for woodland and habitat maintenance, at £62-£69/ha, and a "social value" payment adds another £107/ha, while a one-off £1,000 "stability" payment is there for farmers farming 100ha or less.

For some, however, joining the scheme is not straightforward, with the onus on habitat provision a key sticking point.

Habitat requirement

The government insists they must actively manage at least 10% of their land as habitat, and without committing to that, they can't join. But some farmers say they simply can't meet that demand as either they don't have existing habitat or would need to cut stock numbers or crop acreage to achieve the 10%, which would effectively cut their farming income.

Wendy Jenkins, farm business consultant at Cymru Agricultural & Rural Advice (Cara), is supporting clients through the process and understands why some are fearful, particularly when it comes to the habitat requirement. But she is more reassured since the finer details on how farms can get to that 10% were published. When farmers apply to join the SFS, and many are doing so already since the application went live on 2 March, they must declare on that form how they plan to achieve their 10%.

Habitat can include any they already have – broad-leaf woodland in groups of more than 0.1ha counts, for instance. If farms don't have enough existing permanent habitat, there are alternatives that can be temporary and mostly factored into a farm's rotation and field management fairly comfortably, Wendy advises. "There are quite a few options which farmers shouldn't struggle to achieve; arable growers could leave a field in winter stubble for example, that will count as habitat."

There are a few practical choices for grassland farmers too, she adds. "Establishing a mixed species ley for three years is on the list and that would tick off the habitat requirement for all of those three years. The late cut grassland could work for a lot of farmers too because it can include improved grassland – they will be allowed to fertilise it if they so wish before closing it off on 6 May until 15 July. That's perhaps quite a good one for grassland farmers who might want a late cut of hay."

Mandatory actions

There are 12 mandatory actions in total, including the habitat requirement, that the Welsh government expects in exchange for handing over cash to every farmer who joins the SFS.

Wendy sees most as not being too onerous, and she points out that many farmers are in fact already doing a number of the actions identified anyway, particularly if they are farm assured. "The soil testing requirement, for example, is fairly standard, and if farmers aren't already doing it, then it would be a good thing for them to do anyway."

Even some of the actions on that list of 12 that farmers might not otherwise have considered are achievable without too much extra work, she thinks. "The government wants farmers to complete six hours of training a year and a health and safety course, but these are all online and free," she says. Farmers will have a choice too, accredited courses that Farming Connect will run on topics such as animal health will count towards those six hours. >

< Benchmarking – a common feature in farm businesses and one that is proven to lift efficiency and therefore profitability – is another expectation. But a new tool, Farmdata Plus, should make that easy to do, Wendy adds. "All farmers must do is to input some figures into that app, choose key performance indicators [KPIs] like scanning percentage – sheep farmers will know that figure off the top of their heads anyway. The data will only need to be an input, farmers won't be judged on it. The government isn't insisting farmers make annual improvements to those figures, it's just there to encourage them to do some benchmarking."

Hedgerows and trees

The two options that consultants say are causing their clients the most concern are hedgerow management and tree planting. Instead of cutting hedges annually, the government says farmers must limit it to every two years, but it is allowing several exceptions, for hedges that border roads, footpaths and cow tracks for example, or if farmers need to do some ditch clearing.

After significant pressure from the industry, the government watered down its ambition on tree planting, to a requirement for every farmer to plant 250 trees by 2028, whatever the size of the farm, although some see that as unfair because whether a farmer has 10ha or 1,000ha, the same number applies.

There is an opportunity for farmers to build on the basic payments in two layers, but even though the scheme is live there is still little detail on these and no mention of the payment rates – the government has promised to share that with farmers this summer. All that is known is that money in the layer known as "Optional" will be directed towards enhanced habitat management and enhancing some of the other options in the entry-level "Universal" layer.

Unknowns

Strategically, does it therefore make sense to hold fire on some previously planned farming operations, which might feature in this layer, until the actions and payment rates are unveiled? "If a farmer is planning to create habitat to qualify for the 'Universal' payments, by using the herbal ley option for example, they don't need to do more than is necessary to get to the 10% for now, and use the 'Optional' layer to increase payments should they so choose," says Wendy.

Other unknowns are the actions and payment rates in the third, "Collaborative" tier, which is intended to get groups of farmers working together, on supply chain projects perhaps, trialling more innovative approaches. Like Scotland, Wales is ambitious to lower the age of slaughter of beef cattle, therefore innovations around that might feature on the Welsh government's radar for this layer.

While the SFS still has many detractors, what is undeniable is that the final iteration has come a very long way since the first consultations in 2019 on what was then known as Brexit and Our Land and Sustainable Farming and Our Land, which barely mentioned food and farming. ■

TRANSITION FARMER IRWEL JONES

With a freshly lambed flock to manage and land that needs attention after a wet and challenging six months, Transition Farmer Irwel Jones has yet to take a deep dive into the Sustainable Farming Scheme.

From what he has picked up so far though, there is no question of him not signing up. "Joining is pretty much a no-brainer for us as we have a lot of existing habitat already, and I'm hoping that the 'Optional' and 'Collaborative' elements will suit us, too."

A source of frustration for Irwel though is that, theoretically, he is adhering to the rules of a scheme that the business won't sign up to until May, and with some uncertainty maybe around the rules and payment rates. This is because Wales goes to the polls on 7 May for the Senedd election and there is no assurance on who will form the next Welsh government. "The rules and payment rates may change again," Irwel worries.

He is comfortable with the detail laid out in the scheme so far as the "Universal" actions work for him. "I haven't really got a problem with these actions as most of it is just good practice, we would be working towards these anyway." Irwel's one concern is corroborating those 12 actions. "I worry that evidencing may be onerous and time consuming and will lead to a proportion of the money intended for farmers being diverted to consultants."

While the payments are important for his business, there is perhaps good reason why he has spent very little time considering the nuts and bolts of the scheme. "I have instead been trying to focus on getting our costs on the actual farming side of things down so that we are not as dependent on government payments going forward."

● See p5 for more on our Transition Farmers

PHOTOGRAPHY: VICTOR HUANG/ISTOCKPHOTO, ADOBE STOCK, RICHARD SWINGLER, ISTOCKPHOTO

Biomethane: a growing opportunity for UK farmers

The UK is moving fast on biomethane. With 38 applications of interest submitted in Cadent's first ever cost-sharing assessment window, we are opening the door for farmers to diversify their income with confidence.

Across the UK, farmers are increasingly looking for resilient, long-term ways to diversify income, while making full use of their farm's resources. Biomethane, a renewable and low-carbon gas, is fast becoming one of the most practical options – and the numbers now back it up.

In the first application window under Cadent's new cost sharing biomethane framework, 38 applications were submitted to build new or expand existing biomethane plants. These applications cover nearly all Cadent's network, including the East of England, East and West Midlands and the North West – regions dominated by agricultural activity. **Many of the plants are expected to use agricultural feedstocks such as manures and crop residues to produce biomethane.**

If progressed, these 38 applications would mark **one of the largest collective expansions of UK biomethane capacity to date**. This level of response sends a clear signal: developers and landowners see biomethane as a real opportunity.

Until recently, the first developer to connect in a constrained area had to cover the full cost of reinforcing the gas network to accommodate more biomethane – a hurdle that stalled many otherwise viable projects. Cadent's new approach removes much of that risk. Now, developers can access up to £2 million per project towards network reinforcement costs. Where several projects come forward together, they can also cluster, sharing any additional costs rather than carrying them alone.

For farmers, this means a fairer, easier route to market, either as a supplier of feedstock to biomethane producers, or as a producer themselves.

Cadent already connects 47 biomethane plants, delivering enough energy to heat the equivalent of 351,000 homes. Our aim is to increase this significantly, to the equivalent of 1.8 million homes by 2035. This won't be possible without the UK's farmers.

For farmers, **the benefits are clear**: a steady revenue stream, better use of organic wastes, improved nutrient management and a role in supplying low carbon energy that's needed now.

Although the first application window has closed, more are planned. Farmers considering biomethane – whether as a supplier of feedstock, or as a producer themselves – can still register interest and start exploring what's possible for their land.

Please visit cadentgas.com/our-services/biomethane for more information.

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Alongside this, TIAH's ***Nutrient Management*** training supports farmers in understanding how to manage land more sustainably while maintaining productivity. This course explores ways to enhance soil health, improve biodiversity and reduce environmental impact, helping businesses align with current and future policy requirements.

Practical learning

Together, these learning pathways provide a joined-up approach. Financial performance and environmental management are increasingly interconnected and making informed decisions in both areas is essential for a successful modern farming business.

The training is designed to fit around busy schedules, allowing users to learn at their own pace. Modules are clear, practical and relevant, offering actionable insights, rather than theory alone.

Whether you are reviewing your business strategy or looking to improve specific areas, these courses provide valuable tools and knowledge.

Importantly, the content is suitable for a wide range of experience levels, from those new to business management through to more established operators looking to refine their approach.

TIAH continues to expand its offering, having also developed courses on adopting new technology and the steps to successful recruitment, with new materials on water quality coming soon. This will further support farmers in addressing protecting important water resources while maintaining efficient production systems.

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IHT threat to succession and coccidiosis challenge

Transition is following a group of farmers on their journey to adapt and meet the challenges of farming. **Debbie James** reports on the progress of two farms

FARM FACTS
Watson Farms, Ards Peninsular, County Down
- Farm size: 285ha
- Annual rainfall: 810mm
- Soil type: Sandy to medium loam

Fergal Watson

The watering down of the initial proposal to tax inherited farmland has done little to protect family farms like Fergal Watson's. For beef farmer Fergal, raising the initial planned threshold from £1m to £2.5m only limits the damage it will inflict on the farming business he runs with his wife, Lucy, on the Ards Peninsula in County Down.

His mother, who is 81 years old and has dementia, owns the farm and when it passes to Fergal upon her death he will have to hand over £1m to the Treasury.

One of Fergal's Transition goals is to improve business resilience but, unless the IHT policy is scrapped, he will need to sell land to pay that sum, which means scaling down the enterprise.

That Transition aim is being further tested because investment in the farm is being stifled as Fergal has no power of attorney over his mother's affairs.

"Everything is on hold right now, there are things I would like to do but I can't at this point in time. I have to make decisions day by day."

Strengthening cattle numbers is the one change to increase business resilience within his control and a trouble-free calving period this spring is aiding that ambition. Seventy-five cows and heifers from the 200-head herd delivered calves in the first three weeks and only three were caesarian births. It can mean very long working days, but when calving isn't keeping Fergal awake, IHT is.

TRANSITION CHALLENGES
- Recruiting and retaining staff
- Restructuring suckler herd
- Improving business resilience

"We are a family farm, all we want to do is produce good food, but this looming IHT would be the biggest thing to hit me in my farming career.

"I have been to Westminster to talk to politicians, written emails to MPs about how IHT is going to affect our family and how unfair it is."

His daughter, Éabha-Marie, who is 17, has her heart set on farming and Fergal worries about the impact of IHT on that next generation of farmers. His only glimmer of hope is that the existing government or a new government will change its mind on IHT in his mother's lifetime. Until then, he can't progress the business.

"I am not in a position where I feel comfortable changing direction, I just have to do as best as I can, try to keep cattle numbers as high as I can to get as much out of the farm as I can for now, without stretching myself too far financially or taking too many chances."

See p5 for more on our Transition Farmers

Vaughan Hodgson

Coccidiosis is the biggest challenge in the Hodgson family's 116,000-bird broiler enterprise, commonly causing the feed conversion ratio (FCR) to increase from the 1:55 achieved when birds aren't infected to at least 1:6.

Authorised medication has at times been successful, other times not, but lessons learned along the way are helping to inform decision making on future controls. After a significant outbreak in December 2025, disinfection at turnaround has been stepped up and a new additive is being trialled in drinking water.

It is a work in progress and, as Vaughan Hodgson emphasises: "The results have yet to be determined."

He intends to trial the additive for three crops, to test its performance in a winter, spring and summer crop. "That gives us a fair range of weather conditions and different flocks and should give an idea if it is going to work or not."

Coccidiosis is a perennial health issue he is determined to get on top of, to improve bird welfare and financial performance. The challenges it presents are enormous. Frequency of "top up" litter in the sheds has had to be stepped up to protect bird welfare, an unpleasant and costly job.

Infection mostly occurs shortly after thinning at 32 days, after a proportion of the flock has been removed to lower stocking density, which creates an element of stress in the birds. Mortalities don't increase but birds never regain pre-infection performance and fail to reach predicted slaughter weights. "A FCR in the 1:6s instead of the 1:5s might not seem much but in broilers it is a tremendous difference and financially it is really damaging because feed is our number-one cost. If the birds aren't converting feed into meat we are simply spending money but not getting a return," Vaughan points out.

"We lose margin and potential income – not a few hundred pounds but umpteen thousand when it is a bad challenge."

TRANSITION GOALS
- Supporting the next generation
- Loss of Basic Payment Scheme
- Increasingly uncertain weather

FARM FACTS
JG & DE Hodgson, Kirkbride, Wigton, Cumbria
- Farm size: 244ha
- Annual rainfall: 1,250mm
- Soil type: Heavy red clay, silty sand, black peat

PHOTOGRAPHY: STEFFAN HILL, ANGUS FINDLAY

Well-maintained equipment is an important factor in staff motivation

Steve Cope checks the silage quality with daughter Ellie

Staffing doubles as farm tackles labour challenge

Dairy farmer Steve Cope has doubled his labour force from 10 to 20 workers as part of a transition in his staffing policy. **Jonathan Riley** finds out why

Like many other UK dairy businesses, Steve and Carolyn Cope's Bawhill Farm in Shropshire relied on a steady flow of Eastern European workers to milk the cows. But Brexit rules put paid to that strategy.

Up until Brexit, staffing had been relatively straightforward, says Steve. The workforce of two older UK staff and eight from the EU worked well as a team and took good care of the farm's 1,100 milking cows.

Cows are milked three times a day at Bawhill Farm and there was an acceptance among the team that farmwork meant long hours with limited downtime. The farm operated a 12-days-on, two-days-off system – a long-established work pattern that is common in the dairy sector. But once the UK left the EU, it was obvious the traditional staffing and recruitment policy was no longer sustainable, says Steve. And, it wasn't as simple as just switching to UK-based labour.

"It was difficult to attract workers from the UK who were put off by the long hours and a lack of apparent career progression in the dairy sector. It quickly became very clear we would have to change our whole approach," says Steve. He started researching alternative recruitment policies online. A family member who was working in a hotel chain also suggested how the leisure industry was evolving to cope without EU workers. Steve took advice from staffing and recruitment specialist Real Success, who explained that the transition would be a long process.

"We are still on that long journey," says Steve, who stresses that while the process is very much under way, he is still learning and adapting the staff structure. The first issue was that British workers have different career expectations to their Eastern European counterparts. "British people don't expect to work 12 days without a break – they want regular breaks and a better work-life balance," says Steve. "The hotel sector has moved towards employing staff on shift work patterns so that is where we have focused, made changes and adopted a new process," he adds.

Steve Cope says staffing changes are a work in progress

Before Brexit, the farm employed seven or eight EU workers and two UK staff. All of them worked long hours with some at the farm for 70 hours a week. Now the farm employs 20 workers, each making a vital contribution to the team. But instead of the long hours, they tackle the workload in a patchwork of shifts. "My attitude has changed. If someone said they wanted to work 70 hours a week, I would see that as too much of a risk now," says Steve.

"The likely outcome of those long hours is fatigue. It is far better to have sharper, focused people doing the job. It's better for productivity and it's better for the welfare of the cows," he says. "I hope too that it is a better place to work and the feedback suggests that we are on the way to achieving that aim," Steve adds.

The biggest practical challenge in managing the team is controlling the rota and making sure there are no shortfalls or overlaps. To keep on top of the rota the farm uses a software package to set out the shifts. As well as being able to offer staff regular time off each week, Bawhill has addressed the issue of career progression. Despite the team's growth the business invests more in the individuals with better communication and understanding of each member's goals.

"We recognise that everyone is different. If people are happy with less responsibility and just want to keep doing what they like doing then we are comfortable with that. But if others are more ambitious, then we want to be a responsible employer and help facilitate their progression too," he says. To achieve this Steve is working at developing more regular discussions with team members to help build up individual profiles and goals. Profiles are documented and regularly revisited and coaching sessions can be arranged if needed to help staff develop.

Efforts are also being made to help staff understand how their roles affect the productivity of the business. For example, the farm has held staff sessions with Real Success and the farm's nutritionists to explain how management inputs and feed affect the productivity of the cows.

PHOTOGRAPHY: RICHARD STANTON

Members of the Cope Farming team have regular catch-ups

"Helping the staff to have the big picture gets them involved in the whole production process. If we all understand how things work and what we can do to improve, then we are all pulling in the same direction, and that is a positive thing," says Steve.

He is also fostering communication within the team. "We have a meeting room where we have regular chats, a WhatsApp group, and we try to remember everybody's birthdays," he says. "I hope that, in time, it will all add up to better team spirit and that extra level of communication means we will all work together when challenges arise."

Mindset change

A change of mindset is the key to successful recruitment and staff retention, according to Paul Harris of agricultural employment specialists Real Success. The firm has helped guide Steve Cope and the team at Bawhill as they transition to the new recruitment policy. Paul suggests the biggest challenge in farm recruitment is moving on from the traditional strategies and switching to a different mindset.

In the recent past, farm recruitment has focused on two strategies – drawing in European labour and a local search for individuals with experience in farming, says Paul. The driver for that has been to find people who are willing to put up with the often harsh conditions of working in all weathers and sometimes mucky handling of farm animals. But the chances of attracting those people has diminished.

Supplies of EU labour have dried up since Brexit, while UK workers have alternative employment options that have become more appealing. The manufacturing, retail, construction and leisure sectors have all responded by improving working conditions and career progression prospects. "So farming needs to up its game and change its mindset. It must look again at the challenges and adapt the business to offer what potential employees are looking for," advises Paul.

UK candidates are more discerning – nobody wants to work long hours anymore. The lack of clear prospects, tough working conditions and long hours have to be reviewed and addressed. Paul suggests the starting point is stepping back and viewing the farm behind the farmgate as a prospective place to work with a focus on the following five key areas:

1 Safety Health and safety protocols must be in place, understood by everybody and reinforced as part of the workforce culture. Equipment should be well maintained, up-to-date, reliable and capable of carrying out the tasks it is assigned to. Having modern equipment and technology are strong motivators both in terms of keeping and attracting staff.

2 Clean, modern environment Staff rooms, toilets and washrooms should be clean. "We have for too long expected farm staff to accept that an outdoor industry means low standards in sanitation and breakout areas," says Paul.

3 Work-life balance Staff will want regular time off and shorter working weeks than have been the norm in farming. This can be achieved by covering the same total amount of man hours but employing a higher number of staff working on shorter shifts.

4 Career progression Many UK candidates want a role where they can achieve their personal goals and ambitions. Candidates want a farm business to invest in their development in exchange for a commitment to support their business in the future. Offering training and development gives you an advantage in attracting high-quality candidates.

5 Farm reputation These factors will improve the reputation of the farm as an employer. To enhance it further, consider having a farm Facebook page or website with a gallery and frequent updates to demonstrate the good points about working at the farm. With these five factors addressed, attracting good workers will be easier, Paul explains. The Facebook page and farm website are also good places to advertise for workers because prospective candidates can see the positivity surrounding the business. Other places to search are online jobsites and universities and colleges, which need not be strictly agricultural. Students on food, engineering and technology courses have transferable skill sets for modern farming.

Once you have the applications, the interview process should cover questions that will assess what the candidate would do in certain situations to gauge their experience and attitudes. It should also allow the candidate to ask questions about the farm. While it is a positive approach that will appeal to the candidate, the questions they ask can also reveal what their motivations and expectations are, suggests Paul.

Once chosen, the new staff member should have an induction and training to ensure they are brought up to speed, he concludes. ■

WHY TRAINING IS A VITAL PART OF RECRUITMENT

Training is critical in farming progression because it equips the farm workforce with the skills to cope with change, according to The Institute of Agriculture and Horticulture (Tiah). It also clearly demonstrates that farming is not a dead-end job.

A training programme, tailored to meet individual staff member's needs, shows that it is possible to move from entry-level positions to more senior roles.

The upshot is employees feel valued, which as well as increasing productivity, increases staff retention rates. And, seeing a stable team with known progression steps helps to attract more people into the industry. Tiah offers tailored and accredited development programme through its 24/7 online learning hub.

Users can record their training to amass an evidence-based record of competency for audits or career advancement.

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Water quality: Preparing for tighter rules

The government has set out proposals to tackle all forms of pollution in its Water White Paper released at the beginning of the year. **Louise Impey** reports

Primarily focused on water companies and signalling a major overhaul of England's water system, the government's Water White Paper also targets farmers, pledging to hold them strictly accountable for the 40% of river pollution attributed to the sector. The paper sets out proposals to consolidate current farming regulations. These proposals are:

- Clearer and stronger national standards
- Boost Environment Agency inspections
- Improve slurry storage capacity
- Tighten rules on the use of sewage sludge on farmland
- Extend environmental permitting to cattle businesses.

Having a single set of standards to cover a more joined-up, prevention-first approach has been broadly welcomed by the industry, although there are concerns about how any changes will be introduced and what they will cost. Allowing the proposals a generous transition period and accessible grant funding will be essential, highlights the NFU, adding there are two particular areas that could have implications for farmers and growers – reforms to the way that sewage sludge is used on farmland and the extension of environmental permitting to include cattle.

With sewage sludge, Defra says it is consulting on how sewage sludge is used and regulated and whether it should also come under the environmental permitting regime. The review is being driven by concerns that harmful pollutants, including PFAS (forever chemicals), microplastics and heavy metals, are finding their way into watercourses, with commentators pointing out that the current guidelines on using sewage sludge are more than 30 years old.

The government's ambition to extend environmental permitting from pig and poultry businesses to cattle farming has been criticised by the NFU. The union suggests permitting regulation is likely to cover dairy farming and intensive beef production, although there is little detail on the cattle numbers that would trigger the need for a permit. The diverse range of production systems, extensive grazing periods during certain times of the year, the lack of mitigation options for certain businesses, plus the cost and paperwork associated with the implementation of a permitting regime, makes the proposal to extend environmental permitting directly from pigs and poultry to the dairy sector completely unfeasible, the union states.

The NFU has urged Defra to carefully consider its approach with two key asks:

- Defra to commit to the inclusion of an industry-led option in any future consultation on the extension of environmental permitting regulations
- A ministerial-level commitment from Defra and the Environment Agency to work fully alongside the industry to aid the design of an industry-led solution that is outcome-led.

How can farmers prepare?

Whatever the outcome of government decisions, the direction of travel is clear: tighter rules on nutrient management, slurry storage and diffuse pollution are on their way. Staying ahead of regulation >

< means preparing early, expecting stronger scrutiny and knowing where the risks lie – that way, farms will be in a better position for what lies ahead.

1 Understand your farm's risk profile

Identify any hotspots for sediment loss, be aware of where water leaves the farm, recognise fields that slope towards watercourses, consider whether compacted headlands are channelling run-off and locate where field drains are discharging. Have a documented risk assessment ready for when inspections and assurance audits occur.

2 Get slurry and manure storage up to scratch

Storage capacity remains a weak point on many farms so be prepared with plans and costings as grant funding windows open. Aim for five to six months minimum slurry storage capacity, check that bases and walls are impermeable, separate clean and dirty water, and ensure there are proper covers on new or amended stores. If importing manures, check that field heaps comply with rules on siting, run-off prevention and timing.

3 Tighten nutrient management

Regulators will be checking that farms are doing everything they can to minimise N and P losses. Carry out soil testing every three to five years, use up-to-date fertiliser recommendations, account for the use of organic manures, avoid autumn applications to high-risk land and calibrate sprayers and spreaders annually. Where appropriate, consider the use of precision technology to reduce costs and losses.

4 Improve soil structure and resilience

A healthy soil is the first line of defence against water pollution. Build resilience by using cover crops to reduce run-off and aid nutrient cycling, introduce a controlled or reduced traffic system, establish grass buffer strips along watercourses, place in-field grass waterways to prevent erosion on slopes and make use of organic matter additions.

5 Separate clean and dirty water on yards

Yard infrastructure may need updating, especially where rainwater from roofs needs diverting away from slurry systems. For lightly contaminated yard areas, think about additional guttering and downpipes, use of silt traps and sediment tanks, as well as drain inspection and maintenance. A blocked drain or cracked concrete apron needs repairing promptly.

6 Train staff and review emergency plans

Make sure you can demonstrate due diligence by being prepared. For this, have protocols for slurry spreading, carry out weather checks before application, keep staff training records, develop an emergency pollution plan and have spill kits in high-risk areas.

7 Keep ahead of inspections

Maintain up-to-date field records, prepare nutrient management plans, keep soil analysis results and have maps showing buffers and no-spread zones. Slurry store calculations are also relevant.

8 Think beyond compliance

Market forces and supply chain standards may go beyond rules and regulations, so demonstrating robust water stewardship can be a condition imposed by food processors and retailers. This helps to develop stronger relationships, both with buyers and with local communities. ■

WHAT HELP IS AVAILABLE?

Anglian Water has various grant schemes aimed at finding solutions to local water quality challenges, which open at key times of the year:

- **Farm Innovation Grant** – up to £7,500
- **Training Grant** – up to £600
- **Closed Transfer Scheme** – up to £2,500
- **Event Grant** – up to £1,000
- **Farm Cluster Grant** – up to £30,000
- **Nozzle Improvement Grant** – tbc
- **Land Management Grant** – tbc
- **Pigs on Grass** – up to £1,500
- **Special Projects** – tbc
- **Trials** – tbc

WHAT IS ENVIRONMENTAL PERMITTING?

Environmental permitting is a regulatory process in the UK that requires businesses to get legal authorisation from the Environment Agency (EA) or local councils before operating activities that could harm the environment or human health.

It ensures compliance with conditions to control pollution to air, land and water. Currently, it is a mandatory requirement for pig units with 2,000-plus production pigs or 750 sows, and poultry farms with 40,000-plus birds. Permits focus on managing emissions, waste and pollution risks, requiring site plans, risk assessments and annual reporting. The EA, which produces detailed guidance for agriculture, conducts inspections at least once every three years.

A key component of permits is the use of best available techniques, which are defined as the most effective, advanced and economically viable methods for minimising emissions and environmental impact. For a standard rules permit, the initial application to the EA typically costs £4,000. More complex installations can cost in excess of £12,000. Thereafter, annual fees apply.

When asked about the likelihood of environmental permitting being extended for other livestock, Defra farming minister Dame Angela Eagle points out that the 40% of water pollution coming from agricultural run-off is too high. "There's no excuse for allowing it to carry on," she says. "Damage is being done and we need to take measures to prevent that. If permitting can help – I want to look at it."

She accepts there are other techniques that could help. "There are all sorts of ways to reduce run-off from slurry applications and no final decisions have been made. However, this is a problem that we have to deal with – nothing is off the table."

GOVERNMENT SUPPORT

The Capital Grants 2026 offer, which opens in July, has £225m to support farmers to deliver environmental improvements. Eligible items in the offer are in six groups – one of which is water quality. A £25,000 funding limit applies to this group, which contains items and equipment for yard management, livestock management and drainage and filtration.

A full list, along with guidance notes, will be published in May. Catchment Sensitive Farming (CSF) support is required for 24 items, so farmers are being advised to get organised and book visits, where possible. Included in this 24 are automatic slurry scrapers, sprayer washdown areas, self-supporting covers for slurry and anaerobic digestion stores, as well as underground and above-ground tanks. Demand for previous rounds has been very high and Defra is expecting strong interest again. As a result, it will be issuing updates as the budget is allocated.

Otherwise, the latest round of the Farming Equipment Technology Fund (FETF) opened in mid-March, with a closure date of the end of this month. Also run on a first-come, first-served basis, this is the last round of the FETF in its current form. Grants are available to help buy equipment or technology for three groups, with slurry management being one of them. The others are productivity and animal health and welfare.

Eligible items must be new or ex-display, with the Rural Payments Agency paying 40-50% of the cost. If successful, there is a minimum grant contribution of £1,000 and a maximum of £25,000 for slurry items.

CASE STUDY: RISING NITRATE LEVELS IN GRAFHAM WATER

Grafham Reservoir has a large catchment of 3,200sq km, of which 70% is farmed, says Kim Hemmings, catchment adviser with Anglian Water. In recent years, there has been a rising trend of nitrate levels found in the water, she reveals, with base levels in 2019 being 10mg/litre, but by 2022 that figure had risen to 20mg/litre. "Currently, it's at 35mg/litre and we need to understand why it has gone up and what can be done to change that situation. The legal nitrate standard is 50mg/litre."

Under scrutiny

Grafham Water is fed by two rivers – the Ivel and the Ouse – so the quality of the water in the rivers is fundamental to the quality of the water in the reservoir. That means the impact from farming is under scrutiny, as well as other activities in the region that may be contributing. "We don't think farmers are doing hugely different things and yet more nitrogen is being released from the land," continues Kim. "Of course what has changed in that time is the climate, with more droughts and floods, so that could be contributing to the rise. The wetter months may be having more of an effect than we envisaged."

Another feature of the catchment is a high number of anaerobic digesters, which means that digestate with its high readily available nitrogen (RAN) content is spread on the land, she notes. Some 30,000t of nitrogen fertiliser is applied across the catchment on 200,000ha, so its accurate and targeted application is key. Monitoring by Anglian Water showed nitrate discharges of 9-13kg of N/ha a month in early 2025, which is why solutions are being sought.

The water company has recently funded the creation of a farmer cluster group, so that farmers and experts can work together to address water pollution and limit nitrate leaching. "It's only just started but we are already rolling out a testing programme for the outfalls from farms. The more information we can gather on how land use, cultivations and cropping are affecting the picture, the better advice we can give on minimising nitrate losses."

Another trial being conducted is the use of ASC per plant sensors, which give high-resolution pictures of the crop and the weeds across 36m. By building a picture of crop biomass, normalized difference vegetation index values and weeds throughout the growing season, it allows variable-rate applications and better targeting of inputs. "Hopefully, this will improve nitrogen use efficiency, get more of the nutrient into the plant and prevent any unnecessary losses. It will help target the use of pesticides, too," Kim adds.

David Felce, a Linking Environment and Farming demonstration farmer and a member of the cluster, is participating in the sensor trial and is acutely aware of the connectivity between his farm and Grafham Water. "We have drainage ditches on our field boundaries, which take the water away. In our case, it then passes though two SSSIs [sites of special scientific interest] before it ends up in Grafham Water."

Right balance

He believes that having well-structured soils and efficient drainage ditches is essential for productive farming and long-term sustainability. "We know that waterlogged soils have higher nitrous oxide gas losses as well as productivity limits, so we need to strike the right balance between getting the water off the land and preventing drainage channels becoming pathways for nutrient losses."

However, on some land going into a biodiversity net gain deal, he takes a different approach. Where a temporary wetland is being established, the field has been split and now lies very wet. "Drainage for ecology and biodiversity is very different to that required for productivity," he points out. "Context is everything."

Having a wetland will help with water management in a couple of ways, believes David. "It slows the flow at wet times of the year and helps improve water quality through nutrient and sediment filtering."

David Felce

PHOTOGRAPHY: ADOBE STOCK, CLAYDON, TIM SCRIVENER, GEORGE CHANCELLOR, ANTONY ROBINSON, ISTOCKPHOTO, TAGPHOTO/ISTOCKPHOTO, GNP

Lagoon gets go-ahead and new holding adds resilience

Our *Farmers Weekly* Transition Farmers are striving to secure a better future for their businesses. **Debbie James** reports from Devon and East Yorkshire

Rachel and Richard Risdon

Engaging with the Environment Agency (EA) has helped dairy farmers Richard and Rachel Risdon find a way forward after unexpected challenges around creating slurry storage on a new holding.

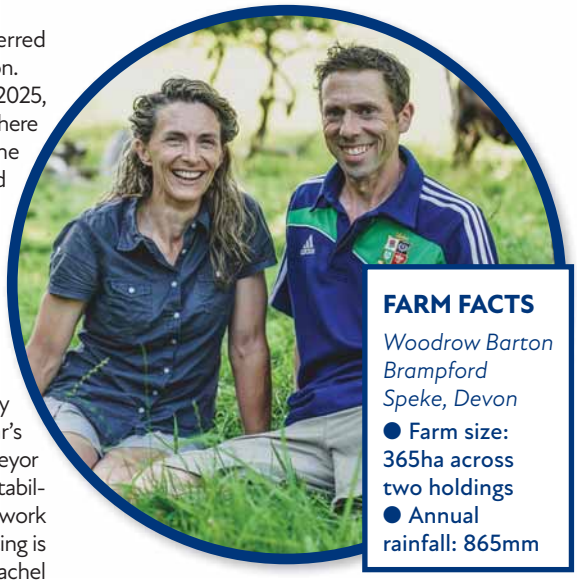
They became tenants of their second farm, a 253ha holding in north Devon, in April 2024 and factored a lagoon into their budget as existing storage was incompatible with running a 350-cow milking herd and complying with nitrate vulnerable zone regulations and Farming Rules for Water.

But professional support fell short, including a failure to advise that the lagoon would require full planning permission. The farm sits on the edge of the Exmoor National Park, where strict rules on air quality made the prospect of consent for an earth-banked lagoon unlikely. The Risdons' own research later established that if the lagoon was relocated a short distance from their preferred site, it wouldn't need full planning permission.

When excavation work started in August 2025, they were presented with another hurdle – there was insufficient soil to form the sides of the lagoon as planned and approval was required for materials to be imported. With the clock ticking on their winter housing period, the Risdons did what many farmers are reluctant to do and contacted the EA. The process that followed was very constructive, says Rachel.

Although derogations for spreading slurry outside defined periods are not routinely permitted, the business was granted a year's grace to enable another consultant and surveyor to be instructed and the job completed. A stability test is being carried out to check that all work done so far on the site they started excavating is correct before further material is added. Rachel says contacting the EA proved to be the right approach. "A lot of farmers, ourselves included, are very worried about contacting the EA, but when we held our hands up and told them what had happened, they were very reasonable because we had been really honest and open. The EA were sympathetic because they could see we had tried to do the right thing."

Work will start on the 7,700cu m lagoon this spring and it is the remaining infrastructure project in the Risdons' plans for their 10-year farm business tenancy.



FARM FACTS

Woodrow Barton
Brampford Speke, Devon

- Farm size: 365ha across two holdings
- Annual rainfall: 865mm

TRANSITION CHALLENGES

- Securing adequate labour
- Better understanding Environment Land Management
- Reducing carbon footprint

Kate and Vicky Morgan

Purchasing a farm has allowed pig producers Vicky and Kate Morgan and their family to strengthen the business and move towards greater self-sufficiency. The Morgan family acquired the 129ha former livestock holding in November 2025 after the owner retired from farming. Located 10 miles from the home farm, it will provide straw for their pig unit while the expanded acreage offers additional land to spread slurry generated by the herd, says Vicky.

"We have always wanted to be more self-sufficient, and when this opportunity arose it was a good fit for our existing business," she says. The acquisition also offers the option for expanding livestock activities in the future should they decide to follow that route.

Among the features that appealed were the farm's three existing holiday cottages, as well as facilities to construct a further five, which are scheduled to launch this summer. Holiday accommodation is a diversification the Morgans have experience of and excel at as they have six lodges at their principal farm and last year converted a former pumphouse.

Pig production remains the core business and is the main source of income, but the diversification is important, especially during periods when the pig sector is under financial pressure, as it is currently. For the Morgans, an outbreak of porcine reproductive and respiratory syndrome (PRRS) added further pressure. Introducing a vaccination programme is now helping to protect the herd, but it took time to get on top of the disease "We went for mass vaccination on the breeding unit and came out the other side, but it lingered for quite a lot longer on the finishing unit; we are still vaccinating piglets for PRRS now," says Kate.

"It is a disease that lingers, it is difficult to get rid of it altogether." But once it was eliminated from the breeding herd, 2025 was one of the unit's most productive years. "The breeding unit flew last year, from March onwards we probably never produced as many pigs as we did in 2025 and they were good pigs," Vicky adds.

"We now have more of an awareness of what can go wrong because that was the first proper disease outbreak we have ever had on the unit."

FARM FACTS

DP Morgan, Pockthorpe, East Yorkshire

- Farm size: 1,700 breeding sows across two farms
- Annual rainfall: 162mm
- Soil type: Chalky wold

TRANSITION GOALS

- Facilitate structural change in supply chain
- Establish more influence over their own destiny
- Diversify

● See p5 for more on our Transition Farmers

PHOTOGRAPHY: EMILY FLEUR, WAYNE HUTCHINSON

Where to find project articles

The Transition initiative offers a vast bank of practical articles, which can be downloaded for free

Business resilience

- How to make rotations more resilient – Summer 2021 (p15)
- Advice on building climate resilience into business plans Winter 2023-24 (p7)
- How to stress-test your farm business – Summer 2022 (p10)
- Why better planning can reduce machinery costs – Winter 2023-24 (p30)
- How to protect your business from a crisis – Summer 2024 (p23)
- How to boost financial resilience – Winter 2024-25 (p7)
- Five ways to build resilience on arable farms – Winter 2024-25 (p24)
- Raby Estate embraces change to secure future – Summer 2025 (p17)
- How family charters could strengthen farm businesses – Autumn 2025 (p23)
- How to transition from price taker to price-maker – Winter 2025-26

Supply chain

- How supply chain is helping farmers work with nature – Summer 2022 (p15)
- How TCFD will hit farming – Spring 2024 (p36)
- Supply chain funding – what's on offer for regen farming - Spring 2025 (p18)
- How looking beyond the farm gate can secure a better future - Summer 2025 (p7)

Carbon management

- Measuring and managing carbon: What to consider – Autumn 2021 (p11)
- Four popular carbon calculators compared – Autumn 2022 (p7)
- The carbon trading conundrum: Risk or revenue generator? – Autumn 2022 (p23)
- Trading carbon and natural capital – a lawyer's eye view – Autumn 2022 (p29)
- How to get a carbon-based income from woodland – Autumn 2022 (p31)
- Is there money to be made from carbon farming? – Autumn 2022 (p41)

Collaboration

- How collaboration cuts costs and increases efficiency – Winter 2021-22 (p47)
- Local farmers unite to clean up polluted river – Winter 2022-23 (p45)
- How collaboration delivers landscape-scale change – Summer 2023 (p19)

Data and tools

- How data helped transform beef herd efficiency – Autumn 2022 (p10)
- How to take a data-led approach to sub-field costs Spring 2025 (p7)
- AHDB baselining project hailed as game changer - Summer 2025 (p12)
- How to get the most out of farm data – Winter 2025-26 (p17)

Diversification

- The benefits of Paulownia trees for net-zero targets – Spring 2022 (p47)
- Expert advice for making trees work on your farm – Autumn 2023 (p32)
- How trees can enhance and support your business – Summer 2025 (p28)

Emissions management

- How livestock farmers can cut greenhouse gas emissions – Autumn 2021 (p19)
- What arable farmers can do to reduce emissions – Autumn 2022 (p12)
- The vital role of soil in emissions reduction – Spring 2023 (p27)
- How pig producers can strive towards net zero – Spring 2023 (p29)
- How fenland farmers cutting GHGs from peat – Summer 2023 (p11)
- Project shows how farming can hit – or better – net zero – Autumn 2023 (p17)
- Tips to tame emissions from housed systems – Winter 2023-24 (p22)

Inputs

- How to get the most from nitrogen fertiliser – Spring 2023 (p11)
- How science is adding value to livestock manure – Spring 2023 (p17)
- What to consider when replacing farm machinery – Summer 2023 (p24)
- Zero subsidies puts focus on cost control – Summer 2023 (p16)
- Zero grazing switch helps reduce dairy feed costs – Summer 2023 (p22)
- Grassland dairy adopts low input system – Autumn 2024 (p28)

Natural capital

- Hedgerows can boost farm income – Autumn 2021 (p26)
- A guide to unlocking value from natural capital – Spring 2022 (p39)
- How farmers can benefit from biodiversity net gain – Spring 2022 (p44)
- Opportunities for livestock farmers from natural capital – Spring 2022 (p51)
- How 'mega-cluster' project benefits farming and nature – Winter 2023-24 (p16)
- How to prepare your business for private funding – Summer 2024 (p31)
- Generating income from the environment – Autumn 2024 (p18)
- How to cut losses in newly planted trees – Winter 2025-26 (p20)

Productivity

- Can an all-forage diet be practical and profitable – Summer 2021 (p19)
- Why better productivity is all about the right balance – Winter 2021-22 (p41)
- Five ways to increase farm output and maintain margins – Spring 2022 (p64)
- Six challenges on your Transition journey – Spring 2024 (p18)
- How to manage crops and soil after a washout season – Summer 2024 (p12)
- How stacking could secure a sustainable future -Autumn 2025 (p7)
- Using a business review to set a new direction – Winter 2025-26 (p11)

Renewable energy

- How alternative fuels are helping to reduce emissions – Spring 2023 (p21)
- Experts outline on-farm renewable energy options – Summer 2023 (p30)
- Renewable energy systems: Which is right for your farm – Autumn 2023 (p26)

Staff issues

- Why training and development are key to success – Winter 2021-22 (p53)
- Stepping back ways to reduce effort and stress – Autumn 2023 (p12)
- Tips to retain staff in a tough market – Winter 2023-24 (p26)
- Eight ideas to help you recruit staff – Summer 2025 (p21)
- Look to new recruitment areas to beat the labour crisis - Autumn 2025 (p19)
- Better mental health can bring business bonuses – Winter 2025-26 (P24)

Support schemes

- Advice for navigating farm support changes – Summer 2021 (p7)
- How to start your journey towards the phase-out of BPS – Autumn 2021 (p34)
- How optimising inputs can help meet SFI targets – Autumn 2023 (p23)
- Scottish support schemes – Autumn 2024 (p12)
- SFI update – all you need to know – Autumn 2024 (p23)
- Welsh Farming Scheme – Winter 2024-25 (p18)
- NI support scheme – all you need to know – Spring 2025 (p13)

Water management

- How growers are de-risking maize production – Winter 2022-23 (p63)
- Why farmers must act to secure adequate water – Winter 2022-23 (p41)
- Key water company incentives and initiatives – Winter 2022-23 (p57)

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