



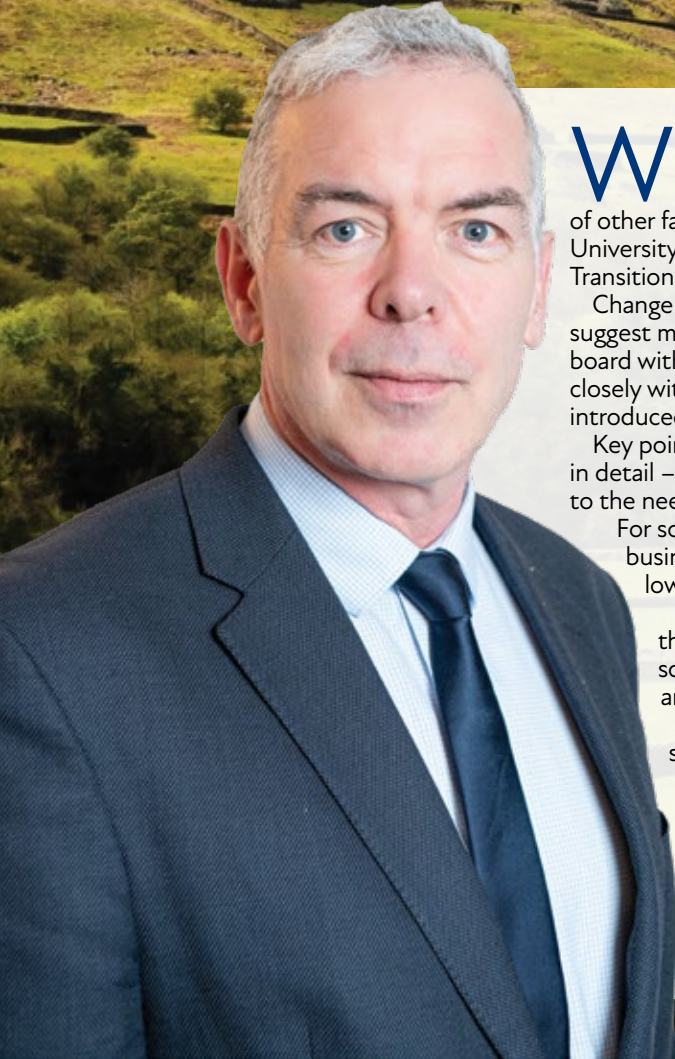
CHANGE MAKER

Benefits that
make a difference
on your farm

TRANSITION

Securing a sustainable future for your farm business

How to embrace positive change



Welcome to *Transition* - the quarterly supplement from *Farmers Weekly* to help secure a sustainable future for your farm business. Our cover story is an invitation for you to join us – and hundreds of other farmers – at Transition Live on 9 May. The event – at Cambridge University’s Park Farm – boasts a host of speakers who will demystify the Transition process (see p14-15).

Change for the better is a theme which runs through this issue. Experts suggest making a farm future-ready – starting by getting the workforce on board with a vision for the business. The process continues by working more closely with staff to help them adapt as a series of small step-changes are introduced.

Key points, easy wins and obstacles to overcome along the way are examined in detail – from issues around climate change and government policy, through to the need for good marketing, employee recruitment and retention.

For some farms, the way forward may be to collaborate with neighbouring businesses on machinery purchases and operation – so we have the lowdown on the latest information on setting up a machinery syndicate.

We conclude from our recent *Transition* report on a farm walk at the Rothamsted Research facility at North Wyke in Devon, where scientists have found that switching typical livestock farmland into arable production is not the panacea some people claim.

As always, we are grateful to everyone who has taken the time to share their stories with us as they strive to secure a sustainable future for their businesses – including our Transition Farmers, who are working to embrace positive change.

We are equally grateful to our Transition Partners for sharing their expertise and advice along the way. For more about our Transition initiative, 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



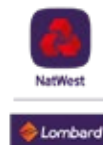
Climate change rules – risks and opportunities for farm businesses See p6



How to prepare your business for change See p10



Six key pointers to plan your Transition journey See p18



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 Healthier yields ✓
 Healthier environment ✓
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Claydon Opti-Till® provides sustainable crop establishment not only reducing your costs but also achieving yield and environmental benefits too.

REDUCING COSTS

Drilling direct and eliminating unnecessary cultivations can save you thousands in establishment costs every year.

Compared to conventional establishment Claydon Opti-Till® saves approximately 60% on costs with a time saving of around 80%.

For Claydon customers, fuel is one of the main areas for savings:

“With the plough-based system our 15,000-litre tank had to be filled five times a season. Now the tanker visits twice, which is 60% less.”

S Middleton, East Yorkshire

Savings can also be made on capital equipment:

“Opti-Till® allows us to farm more land with less labour and machinery. Recently, we cut costs even more by reducing the number of tractors from three to two.”

D Cooper, Norfolk

IMPROVING YIELDS

Reducing costs doesn't mean an accompanying reduction in yield – far from it. Claydon users on a wide range of soil types find yields are maintained or improved; trial results support these findings.

Agrii trials in Kent in 2023 compared Skyway spring barley establishment using drills from 7 different manufacturers. The Claydon drill



The Claydon drill – delivering multiple benefits across wide-ranging conditions.

yielded the highest with 7.46 t/ha compared to the site average of 7.06 t/ha. The roots of the Claydon crop were also the deepest and most well-developed.

BENEFITING THE ENVIRONMENT

The Claydon drill's leading tine technology only moves soil in the rooting and seeding zone, leaving soil structure intact, retaining moisture during times of drought and cutting erosion during times of heavy rainfall.

“We have some light, drought-prone land towards the coast that, under conventional tillage is prone to soil being washed away in heavy rain. With the uncultivated strips it leaves between the drilling rows, the Claydon system helps minimise this problem, while also retaining moisture in dry conditions.”

J Lee, Devon



Neighbouring fields in Belgium – Claydon (top) vs plough (bottom).

For more information about how Claydon drilling can help you with sustainable crop establishment, visit claydondrill.com or contact your nearest Claydon dealer.

Meet our Transition Farmers

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

Karen Halton

Cheshire



P19

Farm size 240ha

Enterprises

530-cow dairy herd

Transition goals

- Recruit/retain staff
- Maintain animal health and welfare
- Increase direct sales

James MacCartney

Rutland



P20

Farm size 162ha

Enterprises

Beef and sheep

Transition goals

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

Vaughan Hodgson

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

Devon



P17

Farm size 161ha

Enterprises

300-cow dairy herd

Transition goals

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

Kit Speakman

Essex



Farm size 275ha

Enterprises

Mixed arable, beef and sheep

Transition goals

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

Eddie Andrew

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

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

County Down



P17

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



P12

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

East Yorkshire



P20

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

TCFD rules: Threat or opportunity?

Big companies are being forced to report on climate change-related risks. **Jonathan Riley** looks at how this new legislation will ultimately affect farms



Climate change is a financial threat to big business. Supply chain disruption caused by extreme weather is expected to cost many billions of pounds. Governments and global economic institutions are so concerned by this threat they have implemented legislation forcing large-scale companies to report on what protections they have put in place to safeguard supply lines (see “What are the TCFD regulations?” below).

While farm businesses are not the initial target, they are expected to be drawn in as big companies look to ensure their whole supply chain is on board. In the coming years farms could face extra administration and additional investment to make changes and prove a level of climate resilience that will satisfy their customers.

But, although it sounds like an extra burden, industry experts suggest the farms that prepare

now could strengthen links with customers and ultimately have a competitive advantage. We asked Kite Consulting’s Hayley Campbell Gibbons, Agricarbon’s Tom Sadan and Joe Spencer and Mark Lumsdon-Taylor of accountancy firm MHA to explain the new rules and assess the threats and opportunities.

TCFD AND FARMERS

TCFD focuses on:

- **Governance** – who is responsible for the company’s response to climate risk
- **Strategy** – how the business responds to climate-related risks and opportunities
- **Risk management** – how the company identifies, assesses, manages and reports on climate-related risks and opportunities
- **Metrics and targets** – which indicators the

company has selected to measure its environmental performance and targets.

“If you think that this doesn’t apply to you because the legislation targets large companies, think again,” says Joe Spencer. Some of the big businesses required to report under the legislation have strong links with farming. For example, the large dairy and meat processors, most supermarkets and UK banks all work directly with farmers.

“In the near future, we also anticipate TCFD requirements will be extended to include medium-sized companies,” adds Mark Lumsdon-Taylor. That means an increasing number of agriculture-facing businesses will be applying pressure to their farmer-suppliers to report on climate-related risks, their emissions and make revisions to the way they farm.

Farms are already beginning to feel the effects of the legislation, and it will likely gather momentum in the next two to three years as companies get to grips with the requirements, forecasts Agricarbon’s Tom Sadan. For farmers, the administration could become fairly taxing – a lot of form-filling and extra audits, Tom says.

The practical changes could also be onerous, like controls on antibiotics use, moving away from unsustainable sources of soya, and switching to reduced tillage. Every single company that you supply could come up with something entirely different, adding further time and complexities, he adds. At worst, if a farmer-supplier can’t comply with a company’s TCFD strategy, that company might have to mitigate the risk by offering a contract to a farm business that can.

WHAT ARE THE TCFD REGULATIONS?

The regulations stem from recommendations made by the United Nations Financial Stability Board’s Taskforce on Climate-related Financial Disclosures (TCFD). Although the taskforce has been disbanded, its recommendations have been widely accepted by governments, companies and financial bodies, so the process is still commonly referred to as TCFD.

The recommendations set out a framework for companies to disclose information on climate-related risks to their operations to provide potential investors with greater trans-

parency. In 2021, the UK government amended the Companies Act to introduce mandatory disclosures. Since January 2022 they have applied to businesses with more than 500 employees. By 2025, the rules are expected to be extended to include an assessment of a company’s contribution to climate-related risks – the so-called Sustainable Disclosures Requirement (SDR). TCFD recommendations overlap with environmental, social and governance (ESG) reporting rules. It can be said that TCFD focuses in more detail on the E and G.

WHAT ARE THE FARM-LEVEL RISKS?

Farming businesses will eventually be expected to set out risks and the contingency plans they have in place. These include risks to inputs and production from increased extreme weather events such as storms, drought and flash floods.

The potential effect of longer-term climate changes such as sea level rises and a farm's location will also come under scrutiny. Kite Consulting's Hayley Campbell-Gibbons says: "For example, a processor may identify that its sites or farmer-suppliers are situated in a location becoming more prone to droughts or flooding. The disclosures report must state which areas of their milk field may be at greatest risk, and what effect any loss of production would have on the business."

A contingency plan would show the adaptations that could be made at farm or factory level to reduce the risks, or whether the business can source from alternative farmer-suppliers or resite operations to areas with less risk. Beyond the physical factors there are transitional risks to businesses from policy changes, shifts in markets and new legislation – the effect of these must all be accounted for.

Climate-change and farms

In a recent survey conducted by Kite Consulting, dairy and livestock farmers reported already facing challenges from a wide range of climate issues. More than 95% of farmers expect there to be a financial cost from climate change and almost three-quarters (74%) consider related risks to their farm strategies. But less than half of those (48.7%) have so far made plans.

Financial costs

The survey revealed that one-third of farmers considered slurry storage and spreading legislation a big challenge in the face of more extreme weather. Kite Consulting looked into those two key issues and analysed how much it would cost to improve climate resilience for the sector.

The consultancy considered capital investments based on increasing slurry storage to eight months and raising silage capacity to provide 18 months' storage to protect against shortages.

"We estimated the total cost to the UK dairy industry from these two issues alone would be £2.4bn," says Hayley.

Aside from these two issues, there has been no accurate assessment of the financial and physical impact posed by climate change to business. The potential financial risk across livestock, dairy and arable could amount to many billions of pounds, she says.

And it is that vulnerability that has caused alarm among shareholders and financial institutions.



Extreme weather challenging farm businesses		
Climate issue	Farmers affected (%)	
Drought	79.9	
High temperatures	58.4	
Flash flooding	36.4	
Icy conditions	18.8	
Excessive rainfall	14.3	
Effects of extreme weather		
Climate-related issue	Farmers reporting effect (%)	
Feed shortage	65.6	
Heat stress	51.9	
Field operation disruption	48.7	
Forage loss	46.8	
Grazing season shrunk	40.3	
Top five strategic changes as a result		
Rank	Area of change	Farmers making changes (%)
1	Slurry management	46.8
2	Forage crops grown or their timing	45.5
3	Housing	43.5
=4	Grazing season	31.2
=4	Fans	31.2

Source: Kite Consulting survey

Opportunities

Because the legislation has forced companies to change their position, they are now looking deeper into their farmer-suppliers' situations and having to understand their difficulties, says Hayley. TCFD could shift the conversation from farming's emissions and carbon footprint to understanding the risks climate change poses to food production, she says.

Tom points out that the language being used by the companies is supportive and could mark a change in the farmer-buyer relationship, with potential financial backing to help farms adapt.

Companies such as Nestle, Arla and Barclays are working with suppliers to help them change. Kite is working with supermarket Asda to help form its TCFD strategy, while Agricarbon is baselining farms for Nestle, First Milk and Diageo. So, for those willing to transition, this change could be positive, working more closely with customers, suggests Tom.

10 REASONS TO TAKE NOTE OF TCFD

MHA has compiled a list of 10 reasons why farm businesses should consider acting now on issues like TCFD and ESG standards.

- 1. Supply chain** If the customer company has to report its emissions and you are not reporting them too, then it may be easier for them to switch to another farmer-supplier
- 2. Government departmental work** All government departmental tenders now require evidence of ESG compliance to be eligible to tender
- 3. Efficiency improvements** A robust review programme will improve efficiency
- 4. Better business loan terms** Lending institutions may refuse loans for non-compliant companies and offer better terms for those that are
- 5. Competitive advantage** A clear environmental programme and risk analysis can deliver an exploitable edge over competitors
- 6. Impact investment** Investors seek out businesses that can prove their climate resilience
- 7. Attracting and retaining staff** Employees are increasingly selecting companies to work for that have a forward-looking approach
- 8. Marketing and PR** A strong TCFD/ESG commitment will provide a basis for marketing activity
- 9. Leading the way** Improving environmental credentials helps show the whole industry in a better light
- 10. The best you can be** Better environmental credentials show a positive attitude towards a client, its customers, its stakeholders and staff

HOW COMPANIES ARE RESPONDING

Arla Foods UK’s head of sustainability, Camilla Riddiford, explains the effect of the TCFD legislation on the business and how they will work with farmers.

“In 2023, we published disclosures related to climate impact and risks covering many of the TCFD requirements,” says Camilla. “The legislation has prompted us to consider our most material risks with respect to climate change and how we implement actions to mitigate them.

“In particular, this led us to the development of our climate check tool for our farmer-owners, and sustainability incentive model [SIM],” she says. “To develop SIM for farmers we have used our climate check data to determine the most cost-effective levers for our farmers to meet a 30% reduction in climate emissions target by 2030.”

She also set out the potential effect for UK farmer-suppliers. “Many of our customers have set reduction targets, which set goals for the emissions from products that customers purchase. To enable our customers to achieve this we have developed the Customer Sustainability Programme. This gives our customers a closer link to Arla’s farmer-owners through on-farm R&D projects and pilots, access to more accurate on-farm data with carbon dioxide footprint per kg/milk, and customised data reports and claimable carbon dioxide equivalent reductions.”

Other companies with an agricultural supply base have also directly identified farm businesses in their reports.

- Nestlé’s TCFD report it states that it will encourage farmers in “implementing agroforestry and increasing productivity without increasing land use”.
- It adds that it will “increase its farmer-suppliers’ resilience by supporting the transition to regenerative agriculture practices such as cover crops, organic fertilisers, agroforestry and intercropping practices for all crops”.
- Barclays Bank highlighted to its shareholders that there were potential market risks facing meat and dairy production. Its TCFD report states that livestock farmers face higher transition risks arising from the shift away from meat and dairy towards more plant-based diets. And it highlights concern over potential future taxes on emissions that may affect production methods, supply chain and farm viability. ■



ACTIONS FOR FARMERS

It is important to seize the chance now, says MHA’s Joe Spencer. Farms that get ahead of the curve can build links with buyers and market their position. Reporting companies will need information, and to assess what work is being done they will need a start point.

Baseline your farms now and record and track every area of the business, says MHA’s Mark Lumsdon-Taylor. Those farms that can show they have reviewed risks, can provide data and suggest mitigating actions will have the competitive advantage, he says. Work to tackle the changing climate’s impact on productivity should not be put off, says Agricarbon’s Tom Sadan. Demonstrating responsibility and preparedness when faced with climate challenges will be vital to long-term business sustainability, he adds.

The first step is to review the farm’s exposure to climate risk, says Kite Consulting’s Hayley Campbell Gibbons. There is a case for applying the principles of climate-related financial disclosure at farm level. The simplest way to do that is to carry out a review of the business, she says. The process should identify risks and quantify the impact on operating profit, value of outputs and yields. The review would then highlight options for increasing resiliency through mitigations and adaptations.

Kite advises farmers to apply a stress test typically asking:

- What risks does climate change pose to my business now, and over the next five years?
- What would be the impact of that risk to my farm, crops or stock and business?
- What adaptations and solutions might mitigate the impacts or reduce the risk?

Once risks and impacts have been identified and ranked in terms of likelihood and severity, any mitigations should be costed and written up. A climate risk assessment with a resilience score, mitigation guidance and an action plan can then be produced for the farm business.

Example risks and mitigation measures

Animal and plant disease

Increased risk from insect- and wildlife-borne viruses and bacteria, and longer-term survival of pathogens in warmer, wetter conditions

Mitigation For arable systems, consider

new disease-resistant crop varieties, biological, cultivation and rotational controls. For livestock, increased building capacity and improved shed ventilation, breeding for disease resistance, cattle vaccination and disease surveillance

Heat stress

Extreme temperatures affect livestock health and cause reproductive issues which hit flock and herd performance

Mitigation Sprinklers, misters and fans, better ventilation, increased building capacity, shaded areas in fields and sufficient water trough space.

Soils

Heavy rain, stronger winds and drought will cause erosion, structure damage and microbiology loss in soils

Mitigation Switch cultivation methods, add organic matter, tweak rotations, include cover crops, change species in grass-seed mixes, adjust stocking density with tweaks to grazing management

Feed, forage and bedding

Volatile weather affects supplies and the price of bedding feed and forage. Increased competition from the renewables sector is adding upward price pressure. Feed ingredients, particularly protein sources with poor environmental credentials, are also coming under more scrutiny

Mitigation Consider alternative bedding materials and feed sources. Increase capacity for forage storage and maximise yields

Flooded land

More flooding from rain and rising sea levels

Mitigation Consider managing flood-prone land differently. For livestock farms change traditional stocking rotations to avoid potentially flooded land. To ensure milk collections are not affected, look to increase bulk tank sizes to allow extra storage capacity. In arable, improve drainage systems, watercourses and soil structure

Source: Information based on Asda’s TCFD document, compiled by Kite Consulting



Secure your family land with solar

Diversify your business, generate additional income and continue farming your land, while combating climate change.



No one in the rural community needs to be told that the current economy is hard on farmers. Costs are high, profits are uncertain and the future feels very unclear. Diversifying farm income is one way to make sure that your business can continue moving forward. Leasing land for solar and storage is a sustainable way to secure long-term, index-linked income for your farm for decades to come, and you can still farm the land once the panels are in place.

Solar is becoming an increasingly popular option for farmers and landowners across the UK – it's weather-proof, comes with decades of guaranteed income and has the added benefit of having significant positive impacts for the land, the local community and the environment. Every solar project generates green, renewable electricity for businesses, utilities and communities, and contributes towards meeting vital government targets aimed at combatting both the energy and climate crises.

Leasing your land for solar doesn't mean abandoning traditional farming practices, either. Solar farms are the perfect place to graze sheep, so you will find that by renting

your land for solar you're able to make the acres work twice as hard – income from the panels, and income from your flock. Solar panels provide shade and shelter for sheep, while the secure fencing offers protection from predation and harassment. Research across the world suggests that solar grazing is a win for your sheep, and your bottom line.

As well as financial benefits, a solar lease can be a bonus for land quality and local biodiversity. Properly managed, solar farms can be havens for local wildlife, and there is even evidence to suggest that projects planted with pollinators in mind can have a positive impact on food production. The disruption to the land from the solar panels is minimal, and land is returned to its original state or better when the lifespan of the project is up. There is also research which infers that the quality of soil under solar panels improves during the duration of the project.

Lightsource bp is a leader in UK solar and to date have developed around 20% of the operational large-scale solar in the country. We've got a superb local track record, making us the ideal partner for any landowner looking to make the

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How to prepare your business for change

The move away from direct payments is the biggest change English farming has seen for a generation, as ‘public money for public goods’ becomes a reality. **Louise Impey** examines the implications – and opportunities – for farmers

While farmers have always faced change, the agricultural transition period requires most of them to implement new practices and embrace new thinking to achieve successful business transformations, at a scale not seen before.

Payments for environmental goods and services, rather than area payments, are the new normal in England, with the ambition being that at least 70% of farmers will be participating in the Environmental Land Management scheme alongside food production by 2028. The detail of what that looks like at farm level continues to emerge, with twists and turns along the way, as Defra monitors the uptake of new schemes and how they are being implemented.

The latest tweak is a cap on six Sustainable Farming Incentive actions, limiting them to 25% of an applicant’s land – with farming minister Mark Spencer explaining that the limit is being introduced so food production remains the primary purpose of farming.

Preparing for change

Change is as much about the people in the business as it is the processes, says Richard

Wordsworth, senior adviser with the NFU. Those who are open to change are in a good position, he believes, but there are many reasons why others aren’t engaging with the process or haven’t got a plan.

“Time, money and family issues are the main ones,” he says. “This is a generational change, so it’s inevitable that people are being left behind. It’s not an easy task managing today’s challenges while planning for the future.” For others, working out how they are going to succeed is a cause of anxiety and stress, which can hamper progress, he notes.

Financial help can come from both public

and private sources (see “What funding is out there to help with change?”) or a combination of the two. For other support, there are business advisers and life coaches, as well as mediation services and professional support. The Royal Countryside Fund has been very active in this area, running Ready for Change workshops and its Farm Resilience Programme. From there, 55 farm support groups have been established, to share knowledge, practice and advice.

Defra has also recognised the scale of the challenge and set up its Future Farming Resilience Fund, putting £32m into the programme to help farmers prepare. The advice is free to

MEDIATION – WHEN YOU CAN’T AGREE ON CHANGE

Complex family dynamics can get in the way of change at farm level, especially where there are interwoven strands of families, businesses and history – with little distinction between professional and personal lives.

Separating the people from the problem helps to take some of the emotional stress out of any dispute about the future, which is why

mediation can be a helpful tool. Seen as an effective means of resolving issues and coming up with a workable compromise, mediation is an informal process that allows everyone to explore creative solutions to any dispute.

Mediators are independent third parties, skilled in helping all participants reach a mutually acceptable outcome.



Environmental payments will offer some businesses a lifeline as area payments continue to shrink

farmers and can be accessed on a one-to-one basis, up until March 2025.

How to change

Recognised change management expert Dr John P Kotter, of the Harvard Business School, has developed an eight-step change process that is accepted by those who need to achieve a successful business transformation.

It is relevant to farming businesses – the steps involve having the right people in place, communicating the vision clearly, and empowering everyone involved to execute the plan, to an agreed timescale. Where the farm team is comprised solely of family members, the eight steps still apply.

1. Establish a sense of urgency – for most farms, the starting gun was fired when Defra announced that the Basic Payment Scheme would be completely phased out by 2028, with other types of funding coming in. It gave farms seven years to change.

2. Create a working team – committed people are essential for developing a plan, leading the change and understanding how to operate in a new way. This may require recruitment, as well as provisions for training, marketing and new kit.

3. Develop a vision and strategy – defining what success looks like and how the future will >

WHAT FUNDING IS OUT THERE TO HELP WITH CHANGE?

There is public and private funding available to help implement the changes that are expected on farms. Not all of them are open to every business and some are competitive.

PUBLIC FUNDING IN ENGLAND

These Defra schemes are either under way or awaiting the next round. Broadly, they fall into two main categories – help with managing land to benefit the environment, and help to increase productivity. They are:

- **Sustainable Farming Incentive (SFI)** – three-year, open-to-all agreements with quarterly payments. Farmers are able to choose on a pick-and-mix basis from nine actions that reward sustainable farming practices. A further 50 actions are on their way later this year, as part of the combined SFI/Countryside Stewardship offer.
- **Countryside Stewardship Capital Grants** – three-year agreements to achieve specific environmental benefits related to trees/boundaries, water quality, air quality and flood management, with favourable payment rates for hedge planting, new tracks, concreting etc, some of which need Catchment Sensitive Farming approval.
- **Farming Equipment and Technology Fund** – grants of up to £50,000 for productivity/slurry items (closing date 17 April) and up to £25,000 for animal health and welfare items (current funding round closed). The latest list has 24 new items of productivity equipment, including 6m direct drills, grain stirrers and combine-mounted weed seed reduction systems.
- **Future Farming Resilience Fund** – free, bespoke advice to farm businesses from local advisers trained to identify the changes necessary for future success. Some 17 providers are being funded by this Defra initiative, which is open until March 2025.
- **Farming in Protected Landscapes** – up to 100% of the costs of a project for farms in areas of outstanding natural beauty, national parks and the Norfolk Broads, running until March 2025. Applications are judged on the outcomes for climate, nature, people and places and must support and improve at least one of these.
- **England Woodland Creation Offer** – for new woodland, the scheme gives about £8,500/ha towards planting costs, along with various additional contributions. In addition, there is a £400/ha annual maintenance payment for 15 years for a minimum size of 1ha (which can be split into blocks).
- **Woodland Management Plan** – for existing woodland, there's a one-off payment of £1,500-£3,000 available to create a 10-year UK Forestry Standard

management plan, with three years given to complete the works.

- **Higher Tier Woodland Management** – multi-year grants, most for five years, for specific capital works or items and management payments for woodland improvement.

PRIVATE FUNDING

Private nature markets – some of which are still emerging – tend to require longer term agreements in return for specific actions. They include:

- **Carbon** – farmers improving carbon stocks and creating carbon credits can earn £15-£75/t of carbon through various providers – some require 30- to 100-year commitment, but soil carbon is for 10 years.
- **Biodiversity net gain** – farmers creating or restoring habitats and then managing them for biodiversity uplift could earn £20,000-£40,000 per biodiversity unit from property developers. Agreements are for a minimum of 30 years.
- **Nutrient offsetting** – payments for reducing nitrogen and phosphorus run-off in local waterways in long-term agreements covering 80-125 years, again from developers. Analysts suggest rates of £1,800-£4,000/kg of nitrogen and £14,000-£100,000/kg of phosphate.
- **Water quality** – water companies pay for practices that result in operational costs savings – payment rates vary and agreements last from one to 10 years.
- **Natural flood management** – payments for interventions that slow the flow of water and reduce flooding damage and disruption from organisations such as insurance companies, usually agreed for a period of more than 10 years.



< be different is key to getting change to occur. If this is difficult to do, make use of a free one-to-one consultation via the Future Farming Resilience Fund to help formulate a business plan.

4. Communicate the change – every team or family member must understand how the new vision is going to be executed and what their role is, so communication is key. It's a journey they are all embarking on, so dialogue must happen between everyone.

5. Empower employees for action – with a strategy or structure in place, find out what the barriers are and deal with them. They may be emotional barriers, such as nostalgia, or resistance to moving into the unknown, due to anxiety and stress.

6. Generate short-term wins – change takes time, so focusing on the little things – a drop in fuel use, a yield improvement, more earthworms – helps to keep everyone on track and maintain levels of enthusiasm. Celebrate them with the team.

7. Consolidate gains for more change – use the small wins to accelerate the team towards the next goal, such as rolling out direct-drilling or moving to mob grazing. This also helps to identify what went right and where improvements are required, so that victory isn't declared too early.

8. Anchor new approaches in the business culture – a positive attitude among the team is important as the farm pushes forward with change. Recognise and reward the key players and instil a sense of pride in every accomplishment – it helps to cement why the change was made in the first place. ■

TRANSITION FARMER: PHILIP VICKERS



A huge amount of change has taken place at Raby Farms since Philip Vickers became farm manager almost three years ago and the transition of the business got under way. The farm looks very different now, he acknowledges, with a regenerative system in place across 1,250ha and soils being in much better shape than they were. He credits the estate's owner, Lord Barnard, with having the original vision and being the driving force behind the change.

Profitable food production remains the priority, but new income streams are being embraced where relevant and the farming business has put sustainability at the heart of everything it does. That fits with the policy of the whole of the estate, Philip explains, as it realigns for the future, meets the various requirements being asked of rural businesses, and sets it up for the next generation.

Direct-drilling is used wherever possible, with organic matter being added to soils to reduce reliance on artificial inputs and get nutrient cycling working well. A much more diverse rotation, with both winter and spring cropping, is in place – with livestock also being integrated. This year has been a stern test of the system, Philip points out, as the atrocious weather has made field work very difficult and crops have been subjected to constant rainfall. "We did get our autumn-drilled crops in, which must be partly due to our use of direct-drilling and the infiltration capability of the soils. It meant we were able to travel when others couldn't and the whole drilling operation was quicker."

Philip admits to using some conventional establishment techniques in autumn 2023, due to the wet conditions. "Interestingly, by the end of March, it didn't look any better than the direct-drilled areas." As a result, he has just sold one of the ploughs. Having a vision and a strategy from

the outset helped to make the change happen, he explains. "There isn't an iron-fist approach here and there doesn't need to be. I am lucky with the calibre of the team I work with and their willingness to make things happen." By communicating what he hopes to achieve, the staff have put things in place that work. "We all help each other out rather than tell each other what to do."

With the whole team motivated – helped by input from a very experienced soil scientist – there have been considerable achievements. Fuel use has come right down, nitrogen fertiliser applications are lower, some fungicides have been replaced with bio-alternatives and margins have been maintained. While the basics are in place, there's still a long way to go, admits Philip. "It is harder work as a system – you need to get out with a spade and have a look at the soil in every field."

The timescales are longer too, he notes. While the soils are livening up and crops have rooted well this year, there have been some weather-related failures. "We lost a chunk of our oilseed rape and we didn't manage to get many of our cover crops in the ground, due to excessive rainfall."

After such a wet winter, he is aware of the septoria threat in crops and will be using an early fungicide to deal with the inoculum. However, a biological lodus-type product will be applied instead of traditional chemistry, in line with the estate's ethos. "Hopefully, it will strengthen the plants by triggering their natural defences and help them to withstand disease pressure," he says.

● Follow Philip Vickers and our other Transition Farmers as they adapt their businesses for the new environmental schemes. Find out more on p5



Food production and environmental improvements can go hand-in-hand if managed correctly



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Come to Transition Live

Meet industry experts at our flagship event to help secure a profitable and sustainable future for your farm business

Hundreds of farmers and growers have already booked their places at *Farmers Weekly's* Transition Live event on 9 May. The event, held at Cambridge University's mixed, arable and dairy farm, is part of *Farmers Weekly's* Transition initiative, which aims to explain the complex production, policy and environmental issues facing British farmers.

The day will start with a keynote address, followed by talks and panel discussions. Speakers will include farmers, researchers, policymakers and industry specialists, who will cover three key areas:

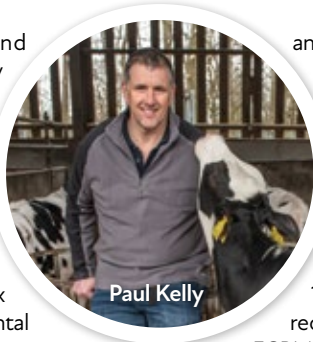
- Food production
- Environment
- Business.

There will be opportunities to put questions to the industry experts, compare notes with other farmers, share ideas and talk to the host dairy farm manager.

Transition Live host farm

Visitors to Transition Live will hear how Cambridge University's farm manager, Paul Kelly, has improved the herd's carbon footprint while cutting costs and boosting efficiency.

The farm has a housed 230-cow Holstein Friesian dairy herd, a 265ha contract-managed arable unit and a flock of 250 North Country Mules. It also operates as a Linking Environment



Paul Kelly

and Farming (Leaf) demonstration unit and a commercial business that is battling with the same environmental, production and policy challenges facing farmers across the UK.

A recent audit of the dairy unit showed the carbon output has been cut from 1.27kg/kg fat and protein corrected milk (FCPM) to 1.04kg/kg FCPM since 2019, when Paul joined the team. This has been achieved with investments in slurry handling, housing improvements and the installation of a small 44kW slurry-fed anaerobic digester (AD) plant.

The dairy herd produces 13,000cu m of slurry a year and it was costing up to £40,000 annually to export slurry because they didn't have sufficient storage, says Paul. To resolve this, a 6,000cu m slurry tank was installed in 2021. Slurry is now applied to grassland and arable crops, which has reduced artificial fertiliser requirements by 9.25t of ammonium nitrate.

The AD plant initially produced almost two-thirds of the farm's electricity requirements. But a challenge came in the form of a legislation

change dictating the length of time slurry must be held in the digester. The Environment Agency now stipulates slurry must be retained longer in the reactor – 28 days rather than 21 – to maximise methane extraction, explains Paul. It has meant slurry throughput has been cut by 25% and the energy output is only sufficient to meet 50% of the farm's needs, he says.

Other efficiencies brought in since Paul joined include LED lighting in the dairy buildings and youngstock sheds, cutting the farm's carbon output by 19t carbon dioxide equivalent/year.

Dispensing with soya and using multicut forage regimes have also helped reduce the proportion of bought-in feed, improving the carbon footprint still further. Looking ahead, Paul hopes to see the farm's 13-year-old robot milkers with up-to-date and more efficient robots. "As farm managers, we really have to analyse and adopt new methods and techniques to make us more efficient. We have to look to

ourselves to take stock and look at what we are doing and see how we can improve," says Paul.

"To that end, I am looking forward to hearing from the speakers and meeting other farmers to learn from the wealth of knowledge they will bring to this event." ■



AGENDA

The event opens at 9am with tea and coffee and an opening plenary on regulation, policy and outcomes from *Farmers Weekly's* Transition editor, Johann Tasker, as well as a welcome from one of the team at Cambridge University Farm. The afternoon sessions will open with a keynote address.

TALKS AND PANEL DISCUSSIONS

Food production	Environment	Business
<p>Optimising margins in arable Headline speaker: Edward Vipond, farms manager, Troston Farms</p>	<p>Generating an income from natural capital on your farm Headline speaker: Emily Norton, director, Soil Association Exchange Partnered with Environment Bank</p>	<p>How to take risk out of your farm business Headline speaker: Nick Down, head of sustainability, Velcourt Partnered with Strutt & Parker</p>
<p>Securing the future for livestock production Headline speaker: Professor Jude Capper, Harper Adams University and ABP chairwoman Partnered with AB Agri and KW</p>	<p>Next steps in improving soil health Headline speaker: Professor Jackie Stroud, soil scientist, Warwick University Partnered with Claydon Drills</p>	<p>Land use change: Managing capital, cash and tax Headline speaker: Johnny Wake, managing partner, Courteenhall Estate Partnered with GSC Grays</p>
<p>A smarter approach to crop production Headline speaker: Dr Simon Griffiths, John Innes Centre Partnered with Bayer</p>	<p>Carbon farming: How to get it right Headline speaker: Dr Liz Genever, beef and sheep consultant, Liz Genever Consulting Partnered with Agreena</p>	<p>Long-term planning to family farming Headline speaker: Professor Matt Lobley, Exeter University</p>
<p>Adding value through collaboration Headline speaker: Gary Markham, director, Land and Family Business Partnered with UPL</p>	<p>Trees on the farm Headline speaker: Stephen Briggs, farmer and lead consultant, Abacus Agriculture Partnered with Wanderlands</p>	<p>Diversification or specialisation: Which is best? Headline speaker: David Linton, Barenbrug UK</p>
<p>Generating revenue from landscape-scale farmer customers Headline speaker: Tim Field, North East Cotswold Farmer Cluster Partnered with Frontier</p>	<p>Making renewable energy work on your farm Headline speaker: Jonathan Scurlock, NFU chief adviser, renewable energy and climate Partnered with Lightsource BP</p>	<p>How to improve and reward sustainable agriculture Headline speaker: Liz Bowles, chief executive, Farm Carbon Toolkit Partnered with Lloyds Bank</p>

SPEAKER INSIGHTS

Food production
Professor Jude Capper of Harper Adams University, who is also ABP chairman, will outline the “Securing the future for livestock production” topic before the expert panel takes up the discussion. She will look at ruminant livestock and set out why they are integral to sustainable farm systems. The positive effects of livestock on soil health, biodiversity and landscape maintenance are overlooked, leaving farming’s detractors to misrepresent the contribution of farmed animals, says Jude. The benefits and contributions, which will be set out and discussed, need to be better communicated to all stakeholders, she suggests.

Business
Liz Bowles, Farm Carbon Toolkit chief executive, will cover how to improve and reward sustainable agriculture. Liz has recently prepared a key report on the financial and climate effects of regenerative farming. But she will look beyond regen at how to farm sustainably. Understanding the financial effect of climate change is vital for farmers and policymakers, says Liz. If more people appreciated the costs of climate change, it would aid planning, she says. The role of external funding, and whether it goes far enough to make farms sustainable, will also be discussed.

Environment
 Beef and sheep consultant **Liz Genever** will open discussions on carbon farming and how

to get it right. Liz explains that she will set out the principles of getting carbon into the soil through organic matter and look at the potential role of livestock in rotations. Feeding the soil with organic matter will improve its nutrient retention and availability, she says. This in turn, will promote plant health, cutting carbon losses and reducing artificial inputs. Liz will also look at the role of improved soil structure and how it delivers better carbon retention and water management.

DATE AND VENUE

- **Time** 9am to 4:30pm
- **Date** 9 May 2024
- **Venue** Cambridge University Farm Park Farm, Madingley, Cambridge, CB23 8YW
- **Contact** If you have any questions, email transitionlive@markallengroup.com Book tickets online at bit.ly/transition-tickets



BASIS CPD POINTS
 Transition Live is a Basis-registered event and attendees can qualify for 3 points. You will need your Basis account number and to complete a form showing your attendance at the designated point on the day.

EXPERT PANEL

Transition Live also boasts a wealth of experience across its panels, which will discuss and widen the topics set out by the headline speakers.

- **Jo Franklin** Farmer, Kaiapoi
- **Patrick Barker** Farmer, EJ Barker & Sons
- **Flavian Obiero** Tenant farmer and farm apprentice butcher, Tynefield Farm
- **Tanya Coleman** Principal consultant, Kite Consulting
- **Lee Reeves** UK head of agriculture, Lloyds Bank
- **Molly Bidell** Head of natural capital, Knepp
- **Rory Hodgson** Senior land manager - South East, Environment Bank
- **Jonathan Armitage** Head of farming, Strutt & Parker
- **Joe Stanley** Head of sustainable farming, GWCT's Allerton Project
- **Thomas Gent** UK market lead, Agreena
- **James Small** Partner, Small Bros
- **Sean McCann** Chartered financial partner, NFU Mutual
- **Stuart Jackson** Head of technical for UK and IE, UPL
- **Vicky Robinson** Head of sustainability, Agricultural Industries Confederation
- **Tim Oliver** Founder, Wanderlands
- **Tom Bosson** Relationship director, Lombard
- **Ben Bell** Digital activation specialist, Bayer Cropscience

How advice helped farmer assess carbon footprint

A joined-up approach with a bank and a consultancy service is key to increasing the environmental and financial sustainability of one farm business in Scotland.



Castle Sinniness is a 240ha grassland farm located on the south-west coast of Scotland, managed by Robert Fleming.

The farm runs 150 Aberdeen Angus breeding females and 300 mainly Polled Dorset and Roussin ewes, and Robert has reviewed practices to stay profitable and improve environmental sustainability.

To initiate the process, Robert spoke to his farm's bank, the Bank of Scotland, about joining the Soil Association Exchange consultancy service. The service is designed to help farmers accelerate their transition to net zero and identify the financial and environmental advantages for their land.

Lloyds Banking Group will fund the service for up to 1,000 of its largest agriculture customers, helping them to improve the ecological footprint and overall sustainability of their operations.

"I wanted a broad-spectrum view of the whole farm to learn from it and adapt. A significant concern for us has been the farm's carbon footprint," says Robert. He added that he wanted to play a part in cutting the farm's carbon output and to leave it in a better state for his children.

The first step in the exchange's review was a full-farm assessment, which looked at six different areas: soil health, water quality, biodiversity, carbon emissions, animal health, and social elements and community. This whole-

farm approach produced a clear understanding of the business' environmental impact.

From here, Robert was able to match the farm with funding that could help make the transition to sustainable practices. He says he was also keen to uncover potential improvements and opportunities that might have been overlooked. "I'd not considered how we might change and balance our livestock ratios differently. After going through this service, we aim to flip our ratio from 80% cattle and 20% sheep, to 20% cattle and 80% sheep. Beef will always have a role here, but we'll now be keeping cattle for their grass management benefits instead of viewing them in isolation as a beef suckler herd," he explains.

To address the need to capture and sequester more carbon within the business, the farm has embraced the concept of agroforestry, particularly the silvopasture system.

Robert explains: "[Silvopasture] integrates trees into grazing land and offers multiple benefits, including enhancing carbon sequestration, increasing biodiversity, and providing a shelter belt for sheep, which is important as we lamb outdoors." This has significantly improved the farm's environmental footprint, contributing positively to biodiversity, soil health and climate change mitigation. "Averaged across five sample sites on farm, we store 328.53t of carbon a hectare, with 14.82% of soil organic matter.

We'd like to get above 400t of stored carbon a hectare, and increase this annually."

Robert says the data is essential to be able to demonstrate what the farm does. "If we want consumers to pay a higher price, we have to be able to show how we can have a positive effect on the environment," he adds.

He explains having tailored advice and insights has been invaluable in terms of making informed decisions and entering investment opportunities with greater confidence.

"Financially, we'll aim to make use of several grants and funding opportunities," he says. These include the Scottish government's Agroforestry scheme within the Forestry Grant Scheme for the tree planting ventures, the More Hedges/More Woods Woodland Trust schemes for hedgerow support, the Agri-Environment Climate Scheme for hedge planting and fencing, and the Preparing for Sustainable Farming funding," he says.

Castle Sinniness Farm's transformation into a model of sustainable and environmentally responsible farming showcases the possibility of blending traditional pastoral farming with regenerative approaches to pave the way for a more environmental and financially sustainable future in agriculture.

To find out more visit
www.soilassociationexchange.com

Transition Farmers expand and restructure businesses

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

Woodrow Barton, Brampford Speke, Devon

- Farm size: 161ha
- Annual rainfall: 865mm
- Soil type: Clay loam over river gravel



Richard and Rachel Risdon

Tenant farmers Rachel and Richard are significantly increasing their land base by taking on the tenancy of a second farm in north Devon. This will see them scale up their dairy farming business from 161ha to 414ha, milking 650 spring-calving cows across both sites.

The move comes as the Risdons are approach-

ing the halfway point in their 20-year farm business tenancy at Woodrow Barton, Brampford Speke, near Exeter.

Although their landlord may extend their agreement, with one eye on expansion and a desire to secure the future of their dairy enterprise, the couple are taking on another tenancy. It will also enable them to offer their herd manager a joint venture opportunity and give him a chance to build up his own equity, according to Rachel.

Jonty Moore has worked for the Risdons for four years and has been on a profit share for the past two. The agreement will be based on a New Zealand-style, lower-order share milking arrangement. He will own the machinery and take charge of staffing the farm. This is part of a solution to achieving one of the couple's transition goals – to secure adequate labour – by offering an opportunity over and above a paid salary.

The Risdons are further ahead with another goal too, reducing their carbon footprint, joining the Leaf net-zero project and being appointed a farm consultant to work with. One

TRANSITION GOALS

- Securing adequate labour
- Better understanding of ELM scheme
- Reducing carbon footprint

of the changes they are introducing is to include more diverse species in their reseeding mix. "We don't know how herbal leys will work in our rotational grazing system, but we are giving it a go," says Rachel.

Gaining a better understanding of the Environmental Land Management (ELM) scheme was another target the Risdons set themselves when they became Transition Farmers. "We are doing less well on that; it can take hours to read through everything," she says.

As a tenant farmer, Rachel is concerned that ELM will drive up rents. "If farmers can receive a big payment for growing bird seed, why would they bother renting it out?" she questions. "That's where the government needs to think more carefully about what food we need to produce in this country, or it will skew the markets."

● Turn to p20 for more on our Transition Farmers

Fergal Watson

The first Stabiliser calves are being born at Watson Farms this spring, two years after suckler beef producer Fergal made the decision to move away from continental breeds.

One of his transition goals was to restructure his herd and he is making some progress. He first used Stabiliser genetics on his Simmental heifers two years ago and the resulting female progeny are now giving birth at his farm on the Ards Peninsula in County Down. "The calves don't look very exciting for the first few months, but they then shape up," says Fergal.

He is also phasing out the Limousin and Charolais. "Limousins are too wild and dangerous to handle, and the Charolais calves are a bit lethargic getting on their feet and suckling. They are good breeds, but I wasn't happy to

accept having lazy 50-60kg Charolais calves and wild Limousins."

Simmentals are being retained, but the herd will be predominantly Stabiliser. "The Stabiliser is not as big as the breeds I have had. But a suckler cow is unproductive and consuming feed for six months in the winter, so a smaller cow means less feed and cost, and more efficiency," he says. "A 700kg cow will eat a lot of feed, but the trade-off with having a smaller cow is a calf that is likely to be 30kg lighter at slaughter." He now has five Stabiliser bulls, all sourced from herds in Northern Ireland, and one Simmental.

Staff recruitment and retention was another area Fergal wanted to improve on. His wife, Lucy, took a career break from her job as a civil servant last year after one of the farm staff retired. She intended to work in the business for a year, but enjoyed it so much that she is now in her second year working on the farm. Her job allows a career break of up to five years, so she could be actively farming for the longer haul.

Improving business resilience is another transition aspiration and the Stabiliser fits well with that, says Fergal. But resilience has taken a

FARM FACTS

Watson Farms, Ards Peninsula, County Down

- Farm size: 285ha split across three units
- Annual rainfall: 810mm
- Soil type: Sandy to medium loam



knock overall on the 138ha combinable crops enterprise. In the 12 months to October 2023, the region experienced seven record-breaking dry and wet weather events. "We harvested 32 days later than we normally would, quality and yield were down and the arable side of the business lost money," says Fergal.

Six things to tackle on your Transition journey

When it comes to securing a profitable and sustainable future for your farm business, some ideas are easier to implement than others. **Louise Impey** looks at six important areas

Successful farming businesses will need to be streamlined, efficient and diversified for the significant challenges that lie ahead, while having built-in resilience and being financially astute.

Those that survive will adapt the fastest and meet the objectives that the industry has been set by the government, leaving a better environment for the next generation, maintaining food production and reducing carbon emissions.

There are six key areas on which to concentrate when it comes to future management success, says Grace O'Dwyer, deputy head of agriculture at HSBC Bank, who urges every farming business to look carefully at how it is doing.

"The question we often ask is, when the chips are down, what are businesses doing to help themselves," she says. "We know there will be good and bad years in farming, which is why we take a long-term view with our clients, but the flip side of that is nothing stays the same. So what's being done about the emerging risks?"

Success will come where the following areas are being addressed, she advises.

1 Climate change

Climate change adaptation is ongoing at the farm level, as hotter summers and warmer winters prompt changes in management practices. The predicted 10% increase in winter rainfall in the next 30 years means water management and water use efficiency measures are high on the to-do list, with factors such as drilling date and crop type already being used to help.

As rainfall intensifies, keeping soils in good condition will help improve water infiltration rates and reduce soil erosion and run-off. Water efficiency measures – from building a new reservoir or installing rainwater harvesting – will limit drought risk.

Trees and hedges will have a role in providing shade and shelter for livestock, while flood mitigation measures should be considered for rainfall extremes. "We know that what are currently one-in-five-year events will become every-other-year events, so there are things that can be done to prepare for that eventuality," says Brendan Freeman of the UK Climate Change Committee.

Of course, climate change is not all about threats – there are opportunities too. These range from longer grazing periods and extended

production seasons, to earlier maturity and new crops. Not surprisingly, the fastest growing crop sector in England is vines. By 2032, it is predicted that 7,600ha will be under vines, up from present levels of 4,300ha.

2 Supply chain consolidation

Consolidation is taking place and net zero is driving that process, while changing market demands also play a role, say commentators. The food industry is intent on making significant changes to ensure supply chains are fit for the future and farmers who engage with their partners are the most likely to reduce price volatility and help increase the security of supply. "This is about working together," says Grace.

"On your own, you can be in a more vulnerable position and, as a country, we need food security." There are some good examples – just one of those is the relationship between Baird's Malt, Fettercairn Distillery and a group of 200 local malting barley growers in the north of Scotland which guarantees a sustainable and local supply of the most important raw ingredient required for their whisky.

The growers must be within a 50-mile radius of the distillery and have to commit up to 122t of malting barley – a minimum of four loads/year – to be part of the initiative. A total of 22,000t of malting barley is supplied each year by the group, with the emphasis being put on supporting the local community.

On a national level, ADM Agriculture is rewarding growers for implementing regenerative agricultural practices across milling wheat

and oilseed rape, as it takes steps to ensure the resilience of supply chains. Payments will be received on a per-hectare basis, using a score-card concept, topping up the crop market price.

3 Farm policy changes

Production subsidies have been replaced with payments for delivering environmental services and public goods, with farms being encouraged to do what's right for both the business and the environment. For English farmers, the Sustainable Farming Incentive (SFI) is open for applications, while larger Landscape Recovery projects are also being funded for farmer groups to deliver nature recovery at scale.

Capital grants are also on offer – many of which provide much-needed funding for



POTENTIAL SFI ACTIONS FOR A 980HA MIXED FARM		
Code	Action	Payment (£/year)
IPM1	Assess integrated pest management and produce a plan	1,129
NUM1	Assess nutrient management and produce report	652
LIG1	Manage grassland with very low inputs	18,373
SAM3	Herbal leys	115,503
NUM3	Legume fallow	57,463
SAM1	Assess and test soil, produce a plan	5,757
MPA1	Management payment	2,000
Total		200,877

PHOTOGRAPHY: FARLAP/ALAMY STOCK, TIM SCRIVENER, RICHARD STANTON



STARTING OUT TRANSITION

and data functions in an open integration strategy, to benefit farmers and technology providers in what he describes as a win-win. “It will be designed for everyone,” he says. “We are working together on a partnership approach that will remove these islands of technology that exist.”

In-built data security is a must, he acknowledges. “Our premise is that if you create data on your farm, it belongs to you.” Artificial intelligence [AI] is a massive opportunity and a project within Open Digital Farm will address that, he says. “The idea is that it will enable step-change in AI use on farms. The obvious way of using it is in precision farming, but there are more specific tasks that could be achieved through the use of AI.”

6 Labour and skills

Access to labour and skills is essential to the future of any business – it’s the people who make a business a success.

To attract and retain staff, there are several considerations, says Liz Tree, project manager for Morrisons’ Sustainable Farm Network, who specifies staff facilities, investment in training, shared values and work/life balance.

“There’s more diversity in agriculture now,” she points out. “If we want to inspire the next generation, we need to recognise that some flexibility is required. More than one-third of those working in agriculture leave their employment each year.” ■

improvements that are required for future success. The SFI – which is suitable for tenants and landowners – can be used to derisk the business and complement food production, while delivering for the environment.

Making it work requires planning and forethought so it fits around the farm. In our example (see “Potential SFI actions for a 980ha mixed farm”), a mixed arable and livestock farm with no existing Countryside Stewardship agreement will be implementing a series of actions.

These equate to £205/ha, but means extending the rotation to eight years – with five years of cropping and three years of herbal leys. With sheep already on the farm and a grassweed problem, some arable land is coming out of production to put the business on a different footing.

4 Farming system

Sustainable, resilient farming systems are increasingly being specified by the end market, which can be costly but have long-term benefits. While premiums for more sustainable practices have been slow to trickle down the supply chain, there are rewards for farms from better soil health, improved water retention and nutrient cycling.

A shift to lower input use, reduced cultivations and better animal welfare is helping, as are options involving land use change such as tree planting, rewetting and flood management. Often described as future-proofing, making a business more resilient gives it a buffer against shocks, and the ability to recover.

Food giant Nestlé, for example, sees regenerative agriculture as a farming system that aims to conserve and restore farmland and its ecosystem. The company has committed to net zero by 2050, with a 20% reduction in emissions by 2025 and a 50% drop by 2030.

As a result, it is looking to co-fund certain on-farm activities – which is why it is involved with Landscape Enterprise Networks (Lens). Lens is a network of those seeking outcomes from the farmed environment, with farmers who can provide said outcomes being paid for the implementation of certain practices.

Measurement, reporting and verification is important with Lens. “If you don’t want to share your data, it may not be right for you,” says Richard Jenner of Openfield.

5 Data and automation

Uptake of automation, digitisation and data is another area that farm businesses will need to engage with. For that to happen, seamless integration is essential, say farmers, having spent far too much time grappling with technology that exists in isolation and restricts choice and the potential for integration.

“Plug and play” technology with open standards and full integration is the ideal, believes Kevin Gooding of Diometer, who is developing the Open Digital Farm concept with 25 industry partners. It combines hardware, software

TRANSITION FARMER: KAREN HALTON



Karen Halton employs 11 staff on her diversified dairy farm and is clear about what works when it comes to recruitment.

“We give them opportunities and we believe in them,” she says. “They can see a progression route, as we pay them well and invest in training and development. We celebrate achievement and provide social occasions, too.”

She adds that the farm business will only survive if the staff are thriving. “They are all asked what they want from us when they

start working here – it is much more than just meeting their basic human needs.”

Karen confirms that they also deal with issues. “Sometimes people have to leave. Good teams don’t tolerate poor performance and it becomes clear if it is damaging the business for them to stay.”

● Follow Karen Halton and our other Transition Farmers as they adapt their business for the new environmental schemes. Find out more on p5

Diversification and disease control bring big changes

FW's Transition Project is following a group of farmers as they adapt their businesses. **Debbie James** reports on the progress of two more of our farmers

FARM FACTS

*Flitteriss
Park Farm,
Braunston,
Rutland*

- 800-ewe closed flock
- Annual rainfall: 720mm
- Soil type: Heavy clay



James MacCartney

Achieving his goal of running a closed sheep flock to improve ewe health has been a slower process than James MacCartney anticipated, involving three years of breeding replacements and screening for disease.

That patience has paid off, as the flock is now self-replacing with 800 ewes lambing this spring.

James decided to make changes to his sheep enterprise after maedi visna (MV) was picked up during routine blood testing.

"We'd had a lower-than-normal scanning percentage and initially went down the minerals and trace elements route," he explains. "It was two years down the line before we tested and that's when we knew we had a problem."

Until that point, his policy was to buy in replacements, but what he was also importing onto the farm was MV. One hundred ewes were culled after that initial test, followed by an annual programme of testing and culling. "Testing for MV is quite expensive. It costs about £5 a head and we test everything, so that's £4,000," says James. But his aim is to have an MV-accredited flock and once he has achieved that, only a small percentage will need to be screened.

Discovering MV in the flock focused his mind on the disease risks associated with buying in sheep, so he started breeding his own replacements. "Until we got to a position where our numbers were sufficient, we had to keep

TRANSITION GOALS

- Reducing disease in sheep
- Being better than net zero
- Establishing herbal leys

buying in, but only from MV-accredited flocks. We have now reached a point where we are self-replacing," he says.

Establishing herbal leys is another of his transition goals and his planned progress on this is impressive. In 2021, he planted 2.8ha with diverse seed mixes and is scaling that up to 81ha over the next three years.

"Any reseeding we now do is always into herbal leys," James explains. "We have very heavy clay soils that hold on to moisture. We can't do anything to change our land, but we can tailor the seed mixes to ones that work for us."

Receiving Sustainable Farming Incentive (SFI) payments for growing herbal leys provides financial encouragement to experiment, he adds. "Countryside Stewardship is quite prescriptive, but the SFI has given us more freedom to get on with it."

● **Turn to p17 for more on our Transition Farmers**

Kate and Vicky Morgan

Investing in a second farm with buildings is helping pig farmers Vicky and Kate Morgan take back control.

The appeal of the former 12ha pig breeding site was its farmyard and the potential to replace ageing infrastructure with modern sheds and straw yards for 4,000 weaners.

One of the reasons for buying the farm, which is about 15 miles from the home farm at Pockthorpe, was to reduce reliance on third-party bed-and-breakfast providers.

Vicky says availability of third-party accommodation is increasingly limited. "There is a lot of competition from big vertically integrated multiples adding to the pressure," she says.

"Building our own will give us the opportunity to run it to our standards."

The Morgans will still work with third-party farmers when the new infrastructure is up and running in September 2024. "These farmers have been working with us for many years and are highly valued and appreciated. They do a great job," says Vicky.

But reducing reliance on sites that charge prices which can be unjustifiable will help the sisters achieve a transition goal – to establish more influence over their own destiny.

They have also made significant progress with one of their other goals: to diversify. In April 2023, they welcomed the first visitors to their six holiday lodges, Kesters Country Lodges, and a few months later a one-bedroom former pumphouse conversion opened at Pockthorpe.

Although the payback period on the conversion of the old building at Pockthorpe is likely to be 10 years, the project has served two purposes. "We knew we needed to diversify to provide long-term financial stability and the pumphouse was a lovely old building that we needed to do something with," Vicky explains.

FARM FACTS

*DP Morgan,
Pockthorpe,
East Yorkshire*

- 1,700 breeding sows
- Weaning 1,000 pigs a week – finished on-site and through B&B
- 140ha rented out



Her sister, Rachel, is running the lodges with help from their mother, Sue. But it is not easy balancing the diversification with farming full-time. "It doesn't seem fair that farmers have to do something else on top of working in a demanding full-time job, just to spread the risk," says Vicky.

Combining a working farm with a passion for the environment

Fourth-generation farmer Ben Butler is adamant that it is possible to balance pursuing a passion for the environment with running a successful business



Ben Butler took over as director of 1000-acre Manor Farm in Avebury, Wiltshire from his father Robin in 2014 and has inherited his long-standing interest in adopting nature-friendly farming practices. Signing up to the Woodland Trust's MOREhedges scheme has helped Ben on both fronts.

The farm, which has been in the Butler family since 1937, is a mix of around 750 acres of arable and 250 acres of grassland. In total Ben has around 2,000 acres across various sites.

They raise about 100 head of beef cattle, graze around 140 ewe lambs and, on the arable side, rotate wheat, winter barley, spring barley, oilseed rape and some spring beans and spring linseed.

Combining a working farm and making the finances work while doing their bit for wildlife and conservation remains "hugely important".

But while the challenge is one Ben and his father have long embraced, there has been an added complication.

Manor Farm is on a World Heritage site and home to the largest Neolithic henge monument in Britain, meaning it's a hugely popular tourist attraction and "very challenging to run a business".

Ben said "Avebury has the famous stone circle and we are in the same World Heritage site as Stonehenge. We receive 350,000 visitors a year, and this is just a normal village so that is a quite a lot of pressure.

"Trying to achieve planning permission or basically dig a hole without someone looking over your shoulder is difficult."

Ben added, "Should we be producing food or giving up farmland to wildlife? That's a good and topical question. I actually think you can do both and I think we have been doing it successfully.

"Certainly since we started we have successfully – and the data shows it – been producing foods and farming on a good scale, but around the edge of fields you don't have to farm right up to the fenceline any more. There is a place for wildlife.

"Wildlife is a benefit to what we do. The public want to see it. It's good for the image of the industry and it's good for the environment.

"There has been no detracting by planting up hedges. And what we have been doing by planting around the edges of fields, I am only seeing the benefits."

Robin and Ben's nature-friendly farming practices have already seen an increase in farmland birds and flora and fauna.

"That includes six-metre margins around a lot of arable fields, beetle banks, hedgerows. We do a lot of shallow cultivation," Ben explained. "A lot of ground has archaeological features underneath so we don't cultivate below four inches."

A lot of Manor Farm was hedged in the 50s and 60s and Ben wanted to return it to its former state.

"Talking to the older generations they recall boundaries of fields being hedged and we felt it would be nice to put it back," he added.

"We planted the maximum 250m of hedges that the MOREhedges scheme allows, with 50 common oak trees, a prescribed mix of blackthorn, crab apple, dogwood, dog rose, field maple and hazel."

The planting will increase shelter and improve corridors for wildlife. It's a subject close to Ben's heart.

"Birds, bees and hedgehogs don't know the boundaries of your farm so you have to do it on a larger landscape scale and work with other farmers in the area.

"We do extensive feeding of farmland birds and try to link up margins and corridors so our farms are linked for the benefit of wildlife.

"We've had really good success with an increase in farmland bird numbers here and not only on our farm but as a group, so what you see on the news about the declines of farmland birds is the polar opposite of what we see here.

"The Woodland Trust is very well respected, and I was happy with the stock I was getting," Ben said. "It was important that it was UK-based. I was confident and comfortable about the longevity and traceability and what was going to be planted."

Lloyds Bank and the Woodland Trust are working in partnership to support farmers to transition to a low carbon future. Our partnership enables the Woodland Trust to provide partial funding for planting 0.5 hectares or more of new woodland or more than 100 metres of new hedging as part of our MOREwoods and MOREhedges scheme, helping farmers to transition to a low carbon future.



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COVER CROP TRIALS HELP SCOTTISH FARM FINE TUNE MIXES FOR THE REGION



Brian Pirie and Oliver Pirie

A combined effort to develop cover crop mixes to suit Aberdeenshire conditions is delivering a range of benefits for Gordon Pirie & Son at Castle of Auchry Farm.

“We were initially motivated by cover cropping to improve our soil’s fertility, increase our organic matter levels and help reduce soil erosion, due to the lack of available organic manures to the farm,” explains farmer, Brian Pirie.

Cover crops are integral to the farm’s system overall and account for 100 acres, though Brian’s ambition is to grow this further. While they support the farm’s compliance with regulatory schemes – alongside green manures under the Agri-Environment Climate Scheme (AECS) - ultimately they stem from Brian’s conviction that ‘it’s the right thing to do’.

Of course, cover cropping isn’t always straight forward in Northern Scotland where the window for planting can be short. Working closely with Kings Crops technical advisor, Ed Jones, and Frontier crop production commercial manager, Steven Penrice, Brian is trialling a range of mixes and approaches and inviting other growers to share in his experience.



Ed Jones

“The aim of the trials is to establish cover crop mixtures that can thrive in the region,” explains Ed. “While their inclusion is delivering under Scottish Ecological Focus Area (EFA) requirements, they’re also providing tangible benefits to the farm and give us insights that can support other growers.”

Brian adds: “Working closely with Kings has allowed us to refine the cover crops we use and select options that are able to establish quickly and offer most adaptability to our local climate.”



The trials are also helping the farm to assess the effectiveness of broadcasting seeds into a standing cash crop as a means of early establishment compared to more conventional methods. Initial observations have been positive in the first year for some species in terms of crop growth and biomass, with Brian, Ed and Steven looking forward to gathering more insights over the coming seasons.



Steven Penrice

“It’s fantastic working with Brian,” says Steven. “Using the trials as a demonstration for other growers in the region provides a real-world context for learning, where together we can share practical experiences to support the advancement of more sustainable farming practices.”

frontier



Discover how we’re supporting UK farmers with sustainable crop production



How to set up a machinery sharing syndicate

The annual machinery cost for arable growers in UK benchmarking groups shows the significant capital individual farms have tied up in kit. But by pooling resources as a syndicate, important savings can be made. **Debbie James** reports

As farmers transition to more resilient systems, greater scrutiny is applied to fertiliser, seed, herbicide and other agronomy costs, but is that same degree of analysis applied to machinery outlay?

Gary Markham, director at rural tax advisers and accountants Land Family Business, reckons not. "Farmers will look at the pence per acre cost of some herbicides but not the huge raft of costs they are incurring per acre for machinery. They don't often know how much money they have tied up in machinery." Poor returns from the 2023 harvest are forcing a change of mindset. The average machinery capital value among the clients his business benchmarks stands at £352/acre, up from £250/acre in 2019.

As well as that big upsurge in cost, there is depreciation to consider. "If the machinery capital is £352/acre and its value reduces by an average of 18% a year, that is a £63/acre direct annual cost for the business," Gary calculates. "With wheat prices down by £100/t on average on 2022 prices, that situation is just not viable. At best, farmers are breaking even, if not losing money." Sharing machinery on a formal basis, through a syndicate, offers a solution. Gary offers the following up-to-date guidance on these.

How to set up a syndicate

Structure a syndicate as a limited liability partnership (LLP), not a limited company, because it will give more efficiency for managing the tax reliefs available on machinery purchases. Never establish the syndicate in the form of a partnership as this introduces unnecessary liabilities, including financial, to all parties. Having a share farming agreement as a "top tier" agreement to the LLP offers an additional layer of beneficial mutual responsibility over and above a standalone machinery sharing agreement.

If both parties are farming as one, they are unlikely to fall out over issues such as who is going to have access to a machine and when because they have a shared interest in getting the job done as well as they can. It avoids potential tensions and conflicts that can come from simply pooling machinery, even when that is done formally.

Environmental agreements

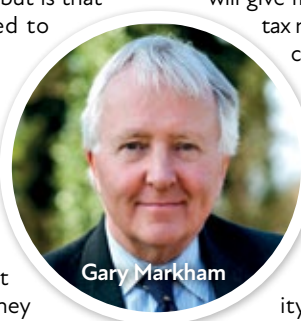
One of the growing changes in emphasis for syndicate managers is the need to consider environmental scheme participation. Syndicate members increasingly need to take land out of the machinery agreement to farm it under an environmental scheme. Gary says they have

had cases where a member might want to take land out of crop production because it is poorer quality and they want to utilise it differently to capture environmental payments. But that creates unfairness for fellow syndicate members because it changes the cost-sharing percentage initially agreed. To remove that element of unfairness, the agreement should allow for cost adjustments to be made over a period of years, across an agreed minimum acreage.

It might be that in the first year, the farmer taking the land out pays the full costs, in the second year their share reduces by a certain percentage, in the third year it reduces again, and by year four, the land is taken out of the agreement altogether. This allows the syndicate time to deal with that adjustment. As well as environmental schemes, Gary has seen this situation arise when a farmer enters into an agreement to grow maize for a nearby anaerobic digestion (AD) plant. As this needs a specialist drill and the harvesting of the maize is a separate job, it falls outside the remit of the agreement, therefore the maize land may need to be removed.

Tax considerations

As sales of excess machinery are taxable, it could be a huge barrier to an individual business from entering a machinery syndicate. That is because balancing charges are applied when machinery is transferred to the syndicate or a piece of kit is sold off because it is surplus to future requirements. ➤



Gary Markham

< Annual Investment Allowance (AIA) at 100% is likely to have been claimed on the purchase of that machinery, making its tax value nil. When this machinery is transferred or sold, a taxable profit can arise, which usually equates to the value of the machinery. In the case of a combine harvester, that could be £500,000, so it is really essential to do your tax homework and consider all the implications first. But it is possible to transfer the machinery the syndicate members want to use jointly into the LLP without a tax liability.

The occasions when Gary has seen problems arise are when advisers have not consulted accountants with relevant experience in setting up these agreements. It is a specialist area of tax planning so it is really important to get the right advice. Within an LLP, the tax reliefs for machinery are available to the members and that structure allows them to use potential losses to offset tax liabilities, which would not be possible as a limited company.

Apportioning costs and income

In a standard agreement, all costs are shared on a percentage basis according to the number of hectares farmed. But there should be terms that allow for adjustments to be made in certain situations – for example, if the efficiency of operations is poorer on one farm. This might be the case when one farm has 10 five-acre fields with narrow gateways, which makes it a struggle to get machinery in and out so everything takes longer. In this situation, an adjustment should be made to the percentage of the costs incurred – that farmer might pay 5% more of the costs perhaps.

Another nuance that needs to be accounted for is differentials in yields per hectare achieved on each farm. One farm might have a lower yield due to a poorer soil type, so the terms should allow for that adjustment to be made when the crop is apportioned in the share farming agreement. These points and others should be discussed before an agreement is set up – it is a case of talking through every eventuality and everything that could possibly go wrong beforehand.

Legal considerations

Always include a clause in the LLP that prohibits the parties from suing the LLP for any damages incurred on a farm – for example, if part of a headland is ploughed up. ■



CASE STUDY: ANTHONY WISEMAN, ESSEX



What started as four neighbouring cereal growers with 1,700 acres forming a machinery sharing syndicate has developed into a joint venture LLP between 10 farms with a combined

arable acreage of nearly 5,000 acres.

In 2000, Essex farmer Anthony Wiseman invited his neighbours to collaborate with him by sharing machinery across their businesses. “We were duplicating machinery and I thought there must be a better way of doing this,” he says.

His neighbours agreed and they dispersed with their surplus machinery, selling 150 pieces of kit, buying in just 10 and merging as AWT Farm Services LLP. “Although we were farming separately, we used all the economies of scale that the syndicate allowed – one combine, one set of cultivation equipment – but kept our own sprayers,” Anthony recalls.

Four years later, when another farmer joined, the agreement went a step further with the formation of a joint venture LLP, and the businesses farming as one while splitting costs and gross margins according to acreage. The grain they harvest is stored at Camgrain and marketed through its marketing partners, Frontier and Robin Appel. “If a member has 20% of the acreage in the joint venture, they receive 20% of the output,” Anthony explains.

One member has since left, receiving payment according to the valuation of the machinery and his acreage, and others have joined, which demonstrates the flexibility of the model, he adds. “We have tried to keep it simple – we require member commitment but it should be simple for someone to join or leave.

“The LLP was very well set up by Gary Markham and Roythornes.” That

discussion is needed from the outset, with basic rules that members must observe, he advises. “If you are financing a machine over five years, you do need people to commit to it, very similar in fact to what you might expect from working collectively as a grain co-operative.”

Two farmers have joined as associate members, paying only a contracting charge to AWT Farm Services. That brings to 10 the number of farms involved, all based in Essex and Suffolk, a mix of owned, tenanted, farm business tenancies and contract farming agreements, with 40 miles separating the two furthest apart. “AWT has been operating for 24 years, starting when wheat was £60/t, and has flourished as it tries to keep down fixed costs and return good margins to all parties,” says Anthony.

Although the economies of scale that the agreement afford are a big advantage, there are others too, he points out. “Unlike a contract farming agreement, it doesn’t matter where we are working because if the combine is operating on one farm, it is operating for us all.”

Working as one also frees up the time of individual members to grow other aspects of their business, with some developing their yards for diversification enterprises, while others have stepped back into semi-retirement, he adds. “Those who are not doing the hands-on farming can relinquish day-to-day management.”

For Anthony, a tenant farmer farming 1,200 acres under various agreements, it has brought its own form of diversification. He is paid by AWT Farm Services to manage the arable work, and another manager, Dan Jones, who is Basis and Facts qualified, has been drafted in to work alongside him, bringing a new skill set. “And some much needed youth,” Anthony adds. “It will mean that I can look into the new environmental schemes across the group, so that we are not missing out on those opportunities.”

Biodiversity Net Gain: the questions you should ask for long-term security

From January, developers in England must demonstrate 10% biodiversity net gain (BNG) to secure planning permission. They can deliver BNG by purchasing biodiversity units from habitats created off-site.

Landowners can secure a long-term income stream by establishing these habitats on their land. **Those partnering with Environment Bank are typically earning between £20,000 - £60,000 annually – alongside annual uplifts and windfall revenue share – for at least thirty years. This income stream is de-linked from downside market risk, sales complexities, and delays.**



Options for landowners

Broadly, there are **three routes for landowners** to access the BNG income stream:

- Creating habitats and selling units themselves
- Entering agreements directly with developers
- Collaborating with a specialist third-party provider

Landowners should avoid exposing themselves to risk and creating a stranded asset. Generating biodiversity units is a complex undertaking requiring industry expertise. **Here are the key questions you need to be asking to find the best option and secure a future for your business.**

Who is liable for BNG delivery?

When generating biodiversity units yourself, you're legally bound to BNG delivery for thirty years. You'll need an ecologist to establish the site's baseline biodiversity and conduct regular monitoring to demonstrate gains.

Some third-party providers take legal responsibility for BNG delivery, while others place that responsibility on the landowner. If you deal directly with a developer, they take responsibility – though they may not have the ecological expertise to ensure delivery is even feasible.

Who brokers the sale of biodiversity units raised from the land?

If you're delivering BNG, you may need to hire a sales broker to tackle the competitive local marketplace. Whereas third-party providers handle unit sales for you.

By doing things yourself, you keep all the profits. But the cost of habitat creation and management is considerable, with the government's BNG Market Analysis estimating the average cost per unit as nearly £19,000 (adjusted for inflation) – not including monitoring, reporting, legal, and sales costs – likely making the profit margins slim for a landowner going it alone.

How will BNG impact existing income streams?

You cannot use existing restorative projects to count towards BNG. But

consider how BNG stacks with other services like carbon credits, water management, and renewable energy – and if they can be sold as bundle products.

Consider any land use restrictions after the delivery period ends and whether the change of land use will affect agricultural property relief (APR) on the land for inheritance tax (IHT) purposes.

Environment Bank can seamlessly integrate BNG into existing land uses and income streams for the long term. We establish agricultural Habitat Banks so we can endeavour to keep land use primarily agricultural throughout.

Will third-party providers offer me a share in the profits from unit sales?

Some providers, like Environment Bank, will share revenue from unit sales once they have recuperated their initial costs, in addition to annual payments.

Tackling BNG on your own can be expensive and using a third-party provider could be the most profitable route overall. With a range of schemes on offer, you must consider the security of each offering to protect your income stream.

Which BNG delivery options guarantee security for my business income?

By entering an agreement with a developer or third-party provider, you

Discovering the best solution for your business

If you choose to explore the BNG market yourself, evaluate all aspects to safeguard your business from risk. Going it alone can be profitable if you have all the essential frameworks in place.

Third-party providers like Environment Bank might be the best option for you. We adapt our strategy to complement your existing business needs.



BNG can be transformative

Richard Pendlebury, a Manchester-based landowner creating a 49-hectare Habitat Bank, commented:

“The Environment Bank model means that we'll receive funding for thirty years, a guaranteed source of income quite rare in the farming landscape. By opening this income stream, we'll be able to pursue a work-life balance, which is especially important for our kids.”

Our approach offers landowners an opportunity to enhance their landscapes and diversify their income while retaining ownership of their land.

remove much of the risk. But without guaranteed funding for thirty years, and without guaranteed unit sales, you risk leaving your asset stranded.

Some third-party providers use option agreements that involve waiting for a unit buyer to be found before your payments begin. But Environment Bank has forward funding for the full term – giving landowners income security from day one, regardless of fluctuations in unit demand or pricing.

Find providers with reliable funding and a track record for habitat creation. They're the best informed to accurately budget the cost of habitat creation and management for thirty years.



Visitors heard how the farm also buys in dairy crosses for feed trials

Grassland-to-arable conversion put to the test

Converting grazing to arable production would increase soil erosion and result in regular crop failures, visitors to a Transition Project farm walk have learned

The farm walk was hosted by Rothamsted Research at its North Wyke farm platform in Devon, where it has set up a grassland-to-arable conversion trial.

The aim of the trial was to test the practicalities of calls made by environmental and anti-meat eating campaigners, to switch land use from livestock to crops. Campaigners point to lower carbon outputs per kg of food associated with arable production as justification. But figures are based on high-grade arable land, which is in limited supply. That means, if the crop production area was to be extended, it would have to use more marginal growing land.

Professor Adie Collins of North Wyke said that the research centre decided to test, at farm scale, whether it was possible to grow a milling-quality cereal on typical livestock land. North Wyke is ideally suited for the trial because it has permanent pasture on heavy Devon clay soils. In 2019, grassland fields were ploughed up and cultivated. But the trial quickly recorded difficulties at drill-

ing, and these issues have continued in subsequent years, says Adie. Drilling winter wheat from October proved difficult in some years because of the heavy rainfall, while bringing the drilling forward led to issues with weed control.

Success rates for drilling between October and December have ranged from just 28% to 76% over the five years of the trial. Erosion losses were another significant problem. The Rothamsted team compared losses from the arable and remaining grassland fields at the farm with historical records. Benchmark erosion levels for the project were chosen as 0.1-0.35t/ha – similar to pre-First World War farming systems, before widespread mechanisation and ploughing.

These levels were chosen as an acceptable target erosion level, explains Adie. Permanent pasture at North Wyke continued to achieve the target levels, recording loss rates of 0.1-0.29t/ha across catchment monitors. But the arable losses were severe, he reports. Arable erosion rates ranged from 2.2 times the upper acceptable >



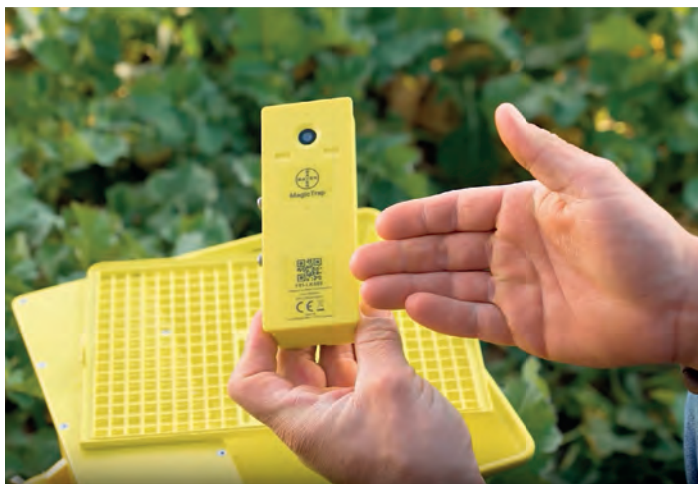
The farm platform has recently switched to Exlana sheep



After lunch, visitors headed out to the farm platform's fields

How artificial intelligence is paving the way to a sustainable farming future

Artificial intelligence (AI) is changing our world, the way we live, work and perhaps even the way we think.



When in 1955, John McCarthy, one of the founding fathers of artificial intelligence, described it as “the science and engineering of making intelligent machines”, he could not have envisaged its use today in a myriad of applications from Alexa smart speakers to facial recognition technology used in smartphones.

But what is AI? Put simply, it is a branch of computer science that aims to mimic human intelligence. It is about building machines able to think and act intelligently and work by combining large amounts of data with super-fast processing.

Currently agriculture is one of the least digitalised industrial sectors, but development and use of AI is rapidly gaining pace, says Bayer UK digital manager Max Dafforn.

AI offers the potential to boost productivity, cut waste, reduce costs and help tackle some of the major challenges farmers are facing across the globe.

Bayer’s focus is on harnessing the power of AI to help support farmers and growers in the transition to more regenerative farming systems, investing in innovations to increase food production, farm incomes and climate resilience.

“A regenerative agricultural system that produces more with less is only possible with advanced digital technologies that use artificial intelligence and data science in every phase of the farming cycle,” Frank Terhorst, Head

of Strategy and Sustainability in Bayer’s Crop Science division, told visitors to Agritechnica last November.

In Bayer’s global plant breeding business, artificial intelligence in the form of predictive analytics and machine learning is being used to select new breeding crosses and predict breeding outcomes on a scale and at a speed that has never before been possible.

“As we were scaling our breeding efforts and starting to collect more dimensions of data, it became virtually impossible for a human being to sift through the data to make informed decisions,” says Phani Chavali, who leads Bayer’s plant breeding analytics team.

Meanwhile, on-farm, machine learning, AI, and data science are delivering new levels of precision through Bayer’s FieldView digital farming platform and range of innovative digital products.

MagicTrap, a digital yellow trap for oilseed rape, is due for launch in the UK this summer. A yellow water trap with a difference, MagicTrap can currently automatically identify cabbage stem flea beetle, pollen beetle and winter stem weevil.

Elsewhere, expert generative AI systems are being designed to help farmers and agronomists in their daily work. A GenAI prototype has been developed which will allow users to interact with and receive actionable insights from their farm data via a chat interface. This

will allow farmers to query their own data using natural language.

“So instead of having to trawl through spreadsheets or lots of records, you can simply ask it a question, for example: Which of my fields had most nitrogen last year and how did they perform compared to others?” says Max.

Bayer is also successfully using artificial intelligence to transform its approach to developing crop protection chemistry, applying AI to move from incremental improvements in existing chemistry to breakthrough innovations based on designing new chemistry with specific performance and safety profiles.

As UK agriculture transitions away from area-based payments, the AI tools Bayer is developing will help farmers and growers get the best possible value out of the inputs they are applying.

“AI is going to have a huge impact on agriculture. I would encourage farmers and agronomists to engage, explore the technologies and look for opportunities that are going to best work for them and benefit their businesses,” says Max.

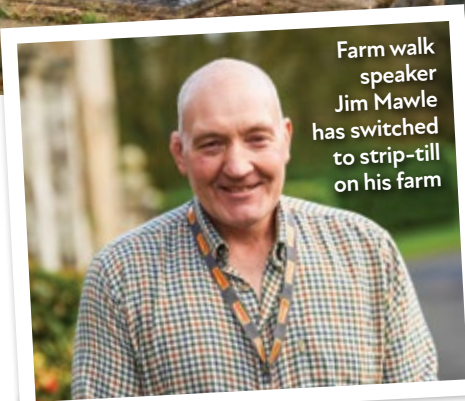
For further reading on this topic, please scan the QR code:



Research farm manager Bruce Griffith explained the farm platform layout and a history of Rothamsted's scientific contribution to UK farming



Electronic feeders allow precise intake measurements for individual sheep



Farm walk speaker Jim Mawle has switched to strip-till on his farm



Speaker Andy Gray has used North Wyke research to improve soil health



Stabiliser cattle have been brought in to replace Hereford-crosses on feeding and methane output trials

WHAT IS THE NORTH WYKE FARM PLATFORM?

The 350ha platform covers four self-contained farms, managed under different regimes with primary funding from the Biotechnology and Biological Sciences Research Council. The quality of the research and facilities has won international acclaim with recognition from the UN Food and Agriculture Organisation.

The overarching aim of the trials is to test whether, through improved land management, it is possible to produce food in a sustainable manner under a growing population and a changing climate. The farms have a 360-ewe flock of Exlanas – a recent switch from Suffolk-crosses.

These are involved in a study of individual feed conversion trials. The

aim is to identify any genetic links to a more efficient sheep with a reduced carbon footprint. Cattle are also undergoing a breed switch from Hereford-crosses to Stabilisers.

As well as studying growth rates and feed efficiency, the herd has been used to study methane emissions from individuals and the herd as a whole. A network of methane monitors has been established across the grazing area to capture real-time data rather than rely on computer modelling.

The platform also includes a long-standing trial of agroforestry on 5ha of land that has been supplemented with 2ha of conventional density woodland.

< tonnage loss at 0.77t/ha, to 6.17t/ha – 17.6 times over the target. The economic effect of the soil loss was calculated. The damage costs to the soil ranged from £290/ha to £2,500/ha, Adie says.

Later on the farm walk, Dr Jane Hawkins reported that the damage was clearly visible in catchment outflows. While outflows from the permanent grassland continued to run cloudy water, the damaged soils oozed red mud into catchments, she reported. The problems continued into the crop production.

Heavy rain combined with poor workability and success rates in producing a milling wheat quality crop was a little over one in four attempts. Yields fell to as low as 3t/ha, with maximums at 6.72t/ha. ■

New UK Agri-Tech Centre will guide science-based transformational change



Even the Prime Minister recognises the importance of agri-innovation and the important role that farmers play in its development and adoption. When he addressed the NFU annual conference this year PM Rishi Sunak said that farming is going through its biggest challenge in a generation while dealing with soaring input costs, climate change and extreme weather. He also said that farmers are at the forefront of innovation, citing gene-editing to boost disease resilience and automation for harvesting crops.

The development, diffusion and adoption of new products and services in agriculture takes time. Farming equipment can be expensive and processes need to be integrated into complex farming systems. Time, money and effort are required to create the evidence-base to validate new technology that the sector will trust.

This month sees the launch of the UK Agri-Tech Centre, the largest dedicated agri-tech organisation in the UK. The UK Agri-Tech Centre is being launched at a pivotal time: agri-food is the bedrock of the UK's largest manufacturing sector, a sector which is facing ongoing challenges around volatility, policy upheaval, input costs and environmental sustainability. The UK Agri-Tech Centre will make the most of the phenomenal opportunity to use science and innovation to lead and guide transformational change for the sector, for the benefit of humanity and the planet. Our company, which has core funding from Innovate UK, forms a key part of the

UK government strategy for agriculture and a significant boost in its investment into the UK's agri-tech sector.

Anyone who reads this publication will be aware that the increasing global population has created an almost insatiable demand for food, fuel and fibre and that supplying these necessities is the responsibility of the agri-industries – in which we include agriculture, horticulture, forestry and agriculture. We also know that our sector is facing critical challenges, especially from climate change and that we must innovate urgently to secure these necessities while safeguarding the planet and its resources.

The UK Agri-Tech Centre forms a type of innovation ecosystem, bringing together businesses of all sizes across the supply chain with academia and research and public sector bodies helping to increase the speed at which new progressive ideas are identified and validated by science and evidence and from which we can find, commission and create commercially viable impactful options and drive their development and adoption.

While we know that we need to produce more with less and can already see the effects of climate change on food production, the compounding effects of inflation and input costs along with policy upheaval put enormous pressure on food producers, and we see the best technology and innovation playing a primary role in creating world in which we can guarantee food security through sustainable

businesses and production systems.

Continuing and building on our existing farm network, the UK Agri-Tech Centre will work with farmers across different farm types and sizes across the UK to identify their challenges and technology developers to develop products and understand their integration farming systems.

Across the UK and even internationally we are working on hundreds of projects with researchers, developers and farmers to help develop technology and innovative solutions to some of the sector's greatest challenges. Products in whose development the UK Agri-Tech Centre's founding companies have been involved and which have already made it to market include Earth Rover's CLAWS (see image) (concentrated, light, autonomous weeding and scouting), which acquires crop data on a plant-by-plant basis controlling weeds with AI and robotics; GrassCheckGB, a cross-monitoring project providing valuable sources of local and regional grass growth on a weekly basis; and Skippy Scout, which provides whole-field reports via drone and mobile app, providing data on the percentage of healthy group and unhealthy crop, weeds and insect damage.

For more information about the UK Agri-Tech Centre or to get involved, please visit www.ukagritechcentre.com



Diversification opportunities to boost farm income

Developing non-agricultural income is an increasingly important consideration for farm businesses. And it doesn't always have to come at the expense of food production, as speakers at a recent *Farmers Weekly* webinar explained

Farmers are under increasing pressure to adapt their businesses to achieve future financial security. Diversification could help them to achieve this – but that doesn't mean closing the farmgate. And there are a variety of options available.

At the webinar, Strutt & Parker land manager Kathryn Donkin advised farmers to look at the business as a whole and identify where there were opportunities to increase income. "There are two main areas of developing interest within diversification. One is renewable energy, like battery storage and solar farms, the other is landscape regeneration and natural capital," she said.

Energy

The energy opportunity was clear and present, said Tim Foster, head of energy services at Conrad Energy. "There are always concerns around planning consent, but more pertinent is whether you can get grid connection, either for electricity or natural gas from anaerobic digestion." There are

also lots of opportunities for farmers to generate energy and use it themselves. "That is perhaps the biggest opportunity, as you save on importing power and avoid the vagaries of high energy prices."

Biodiversity net gain

Biodiversity net gain (BNG) is an area of significant potential, according to Tim Oliver, founder of Wanderlands. "Any landowner should be looking at their holdings and identifying where the marginal land is," he said.

"Where land is used for food production, that is its primary purpose, but I don't know any landowner that doesn't have marginal land. That's where they should focus to see what they can achieve in terms of natural capital."

Policies for developers are different in each of the four countries of the UK. The requirement in England is restitution of 110% of biodiversity lost as a result of the development, while Scotland, Wales and Northern Ireland are by negotiation.

"You have to think long term, because in many cases there are 30-year agreements and they have to be managed," said Mr Oliver.

"The easiest ways to lift your biodiversity include widening field margins, planting wildflowers and putting hedgerows in." Distance to developments was key, Kathryn added. "If you've got a farm next to a development site, then you could be in a perfect position to provide BNG offsetting," she said.

Diversification didn't have to replace good farming, said Tim. "Farming is for producing food and we have an island to feed. However, there is a real opportunity for UK farming to be rewarded for

good practice." It can be difficult to know where to begin, but the Farming and Wildlife Advisory Group is a good place to start in terms of independent advice.

Utilising assets

Another option for generating new income is converting existing buildings deemed unsuitable for agricultural purposes into alternative uses.

Kit Speakman, a *Farmers Weekly* Transition farmer in Essex, has converted some of his outbuildings into office and leisure facilities. "The planning system can be a complete lottery depending on whether you have a supportive council or not," he said. More than half of his income is now derived from diversification, although his passion will always be in farming.

This is a common situation across UK agriculture. "Some 21% of farmers receive more than 50% of their income from diversification, which is a staggering number," he said. "It all comes back to location, location, location."

"Labour availability is always an issue, as is accessibility. We're really lucky that we are in the epicentre of four major towns." Diversification has allowed Kit to keep doing what he loves in a changing agricultural landscape. "I have been farming for more than 30 years and I still want to be able to enjoy doing it," he said. ■

EXPERT PANEL

Host Johann Tasker, Transition project editor, was joined by four experts to discuss ways to generate non-farming income:

- **Kathryn Donkin**, land manager, Strutt & Parker
- **Tim Oliver**, managing director, Wanderlands
- **Tim Foster** head of energy services, Conrad Energy
- **Kit Speakman** Transition Farmer, Essex

WATCH THE WEBINAR

Watch the discussion in full at fwi.co.uk/transition, where you'll also find the other webinars in the Transition series

Tips on how to avoid common SFI pitfalls and maximise the benefits

Striking the right balance between profitability and deliverability is the key to making the most of a Sustainable Farming Incentive agreement. So what are some of the key considerations?



Latest figures show over 17,000 farmers in England have applied to join the Sustainable Farming Incentive (SFI), but many more are still to make up their minds about making an application.

There are currently 23 options or 'actions' available for farmers to choose from which include measures based on soil health, hedgerows, low-input grassland, farmed wildlife and Integrated Pest Management (IPM). However, a list of additional actions has been promised for this summer.

"Our specialist Farming team is working with clients to establish how different packages of SFI actions can be used to best effect to build financial, environmental and agronomic resilience within a business," says Jonathan Armitage, Head of Farming for Strutt & Parker.

"Recent announcements about increases in payment rates do mean there are some good opportunities to integrate options within the rotation that deliver a fixed income, largely irrespective of the weather, with a much lower working capital requirement. But choosing the right options for your system does take careful planning."

Although there are some attractive headline payment rates for some of the SFI options, the net margins can be much lower because of the establishment and maintenance costs associated with them.

"There are some options which are attracting less attention - for example, the establishment and maintenance of grassy field corners and blocks (AHL3) where the payment is lower at £590/ha, but the only management required is localised weed control."

It is also vital to carefully consider the practicalities of what different options mean for the rotation over the three years of an agreement, including the level of complexity involved in their management and any potential pest and disease problems they might cause.

While some of the options may look very similar to those offered under Countryside Stewardship, the requirements may not be the same. There has been a shift in emphasis towards achieving the right environmental outcomes and away from just complying with a list of dos and don'ts.

"Defra is taking this approach to give farmers more flexibility, but it does require a shift in thinking on how you approach your agreements," says Jonathan. "It means that what is required may vary from one site to another, despite the same option being implemented."

The key to maximising the impact of the SFI options from an environmental perspective is to first identify what habitats you have and whether it is possible to expand or join them up.

Farmers entering into an agreement should also make sure they understand the record-

keeping requirements to show how each SFI outcome in the agreement has been achieved.

Every option requires some sort of evidence and some more than others. This may include photographs and other documentation to show what you have done, including providing copies of associated invoices. Thought will need to be given as to how you gather and store this information on an ongoing basis.

"Our specialist advisers are experienced in designing agreements that are profitable, practical to deliver, and also beneficial for the environment," says Jonathan.

To find out more

Call 07881 257178

Email

jonathan.armitage@struttandparker.com

Visit rural.struttandparker.com

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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)
- Income squeeze: Past policies and what the future holds – Winter 2021-22 (p65)
- How to stress-test your farm business – Summer 2022 (p10)
- Advice on planning ahead to combat ag inflation – Autumn 2022 (p35)
- How to build resilience into a livestock system – Spring 2023 (p36)
- Tips for planning ahead to reduce business risks – Autumn 2023 (p7)

Carbon assessments

- Measuring and managing carbon: What to consider – Autumn 2021 (p11)
- Four popular carbon calculators compared – Autumn 2022 (p7)

Carbon trading

- Hedgerows can boost farm income – Autumn 2021 (p26)
- 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

- 'It's about three dairy farms working together' – Autumn 2021 (p8)
- How working together reduces 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

- 'Data is vital, but a computer will never run the farm' – Winter 2021-22 (p57)
- Pros and cons of four key sustainability measures – Winter 2021-22 (p59)
- Six livestock apps to lift business performance – Summer 2022 (p17)
- Jargon buster – Autumn 2022 (p39)
- How data helped transform beef herd efficiency – Autumn 2022 (p10)

Diversification

- 'I always wanted to support my sons when they came home' – Summer 2021 (p10)
- 'It's vital we look at new enterprises' – Autumn 2021 (p16)
- The benefits of Paulownia trees for net-zero targets – Spring 2022 (p47)
- Expert advice for making trees work on your farm – Autumn 2023 (p32)

Emissions management

- Advice on reducing emissions and storing carbon – Autumn 2021 (p5)
- 'We are not turning soil regularly' – Autumn 2021 (p14)
- How livestock farmers can cut greenhouse gas emissions – Autumn 2021 (p19)
- 'There is plenty of interest in what we are doing' – Autumn 2021 (p23)
- What arable farmers can do to reduce emissions – Autumn 2022 (p12)
- Five ways producers can cut their carbon footprint – Autumn 2022 (p19)
- The vital role of soil in emissions reduction – Spring 2023 (p27)
- How pig producers can strive towards net zero – Spring 2023 (p29)
- What UK farmers can learn from Dutch 'nitrogen crisis' – Spring 2023 (p33)
- How fenland farmers cutting GHGs from peat – Summer 2023 (p11)
- Transition farmer slashes carbon emissions – Summer 2023 (p28)
- Project shows how farming can hit – or better – net zero – Autumn 2023 (p17)

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- What to consider when replacing farm machinery – Summer 2023 (p24)
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- Zero grazing switch helps reduce dairy feed costs – Summer 2023 (p22)

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- How Norfolk farm is maximising its natural capital – Spring 2022 (p60)
- How farmers can benefit from biodiversity net gain – Spring 2022 (p44)
- Opportunities for livestock farmers from natural capital – Spring 2022 (p51)
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- 'We have to look at the whole business' – Winter 2021-22 (p39)
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Water management

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- Why farmers must act to secure adequate water – Winter 2022-23 (p41)
- Why irrigation is key to the agricultural economy – Winter 2022-23 (p51)
- Key water company incentives and initiatives – Winter 2022-23 (p57)
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Editor Johann Tasker 07967 634971 • Project lead Anna Eccleston 07769 696074

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