

# TRANSITION

Securing a sustainable future for your farm business



## PATHWAY TO PRODUCTIVITY

How a balanced approach  
can optimise farm output

# Focus on farm productivity is more important than ever



**W**elcome to the third issue of *Transition* – the quarterly supplement from *Farmers Weekly* to help secure a sustainable future for your farm business.

This edition focuses on productivity – and the need for growers and food producers to secure more of their income from the marketplace. Farm policy is changing and we can no longer rely on the basic payment to support agriculture.

Productivity measures the efficiency that inputs are turned into outputs. And it is often said that UK farmers languish behind their main competitors overseas. But the true picture is much more complicated than it first appears.

That said, there are actions every farm can take to improve business performance – whether it is embracing innovation and new practices, collaborating and sharing knowledge with others or simply doing everything a little bit better.

Being more productive isn't about chasing yields – although yields are, of course, important. It is about optimising the ratio of inputs to outputs – and optimising profit at the same time in a way that aligns with our personal and business goals.

As always, we are grateful to our *Transition* Farmers, who are sharing their stories as they strive to remain profitable, while improving their productivity (see p33). 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](http://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.



CONTENT HIGHLIGHTS



How focusing on efficiency rather than output is key to business success See p35



How working together can help reduce costs and increase productivity See p47



Why updating ideas, skills and knowledge is crucial to your farm business See p53

If you are interested in joining the network and would like to find out more, please contact Anna Eccleston at [anna.eccleston@markallengroup.com](mailto:anna.eccleston@markallengroup.com)

Sandy by Trinity AgTech has kindly provided our sustainability indicators, working with our Transition Farmers to measure their environmental progress, product provenance and financial prosperity. For more information, please visit [trinityagtech.com](http://trinityagtech.com)

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PARTNER PERSPECTIVE

# FORWARD THINKING

# DAIRY

At Arla, we believe we all have to play our part in addressing climate change and the challenges this brings.



Find out how farmer owners are working to build a sustainable future for dairy at [www.ArlaFoods.co.uk](http://www.ArlaFoods.co.uk)



# Meet our Transition Farmers

We are following a group of farmers on their journeys to adapt their businesses to meet the new challenges of farming in 2022 and beyond

**A**s we embark on a period of huge change for UK agriculture, farmers must steer a course through some of the biggest challenges to shake up the industry in more than a generation.

Our Transition Farmers will be sharing their experiences as they get to grips with new systems and methods to make their farms more sustainable – and keep them in the black.

Through them, we will be able to get real-world, muddy boots insights on farming methods that claim to be profitable and also protect and enhance the environment. We'll examine whether they really do work – and help you decide if they could be an option on your farm.

You can follow our current recruits, shown right, at [fwi.co.uk/transition-farmers](https://fwi.co.uk/transition-farmers), and we introduce the next four Transition Farmers in this issue – Alistair Hall-Jones from Lincolnshire, p39; Kate and Vicky Morgan from East Yorkshire, p44; Duncan Blyth from Norfolk, p51; and Ed Shuldham from Wiltshire, p57.

## Why not join us?

Become a Transition Farmer and you will join our network of farmers sharing their knowledge, experience and expertise – and receiving informal advice from peers and experts.

We are keen to recruit farmers at every level of their journey towards business and environmental sustainability – from those who don't know where to start, to others who may be further down the line and have some wisdom to share already.

Your participation as a Transition Farmer will involve you...

- Appearing in *Farmers Weekly's* Transition coverage, including on video and on our Transition podcasts, as well as in photos and written articles both online and in the magazine
- Sharing your experiences as you strive to become more sustainable – including the opportunities you are seizing as well as how you are tackling the challenges you face
- Benchmarking the sustainability of your farm business, and sharing limited amounts of financial information about enterprise performance.

For more about becoming a Transition Farmer, contact *Transition* editor Johann Tasker on 07967 634 971 or [johann.tasker@markallengroup.com](mailto:johann.tasker@markallengroup.com)

### James MacCartney

Rutland



**Farm size** 162ha

#### Enterprises

Beef and sheep

#### Transition goals

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

### Vaughan Hodgson

Cumbria



**Farm size** 244ha

#### Enterprises

Cereals, grassland, 120,000 broilers

#### Transition goals

- Support the next generation
- Replace lost BPS 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

### Rachel & Richard Risdon

Devon



**Farm size** 110ha

#### Enterprises

Grass-fed dairy (300 cows on 110ha)

#### Transition goals

- Secure adequate labour
- Better understanding of ELM scheme
- Reduce carbon footprint

### Kit Speakman

Essex



**Farm size** 275ha

#### Enterprises

Mixed arable, beef and sheep

#### Transition goals

- Bridging income gap
- Fully diversified business
- Widening 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

### Andy Bason

Hampshire



**Farm size** 800ha

#### Enterprises

Cereals, spring beans, oats, linseed and oilseed rape

#### Transition goals

- 30% cut in carbon emissions
- Establish 10ha of agroforestry
- Establish 10ha of woodland

### Alistair Hall-Jones

Lincolnshire



**Farm size** 680ha

#### Enterprises

Cereals, oilseed rape, spring beans, sugar beet, forage maize, AD, 900 sows

#### Transition goals

- Recruit and retain first-class staff
- Pursue technical efficiencies
- Pay back borrowing

### 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

### Kate & Vicky Morgan

East Yorkshire



**Farm size** 1,700 breeding sows

#### Enterprises

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

#### Transition goals

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

### Ed Shuldham

Wiltshire



**Farm size** 1,800ha

#### Enterprises

Cereals, oilseed rape, oats, forage and grain maize, peas, solar, biomass, AD, events and property diversifications

#### Transition goals

- Help shape SFI through participation in pilot
- Make more use of data
- Take natural capital opportunities

You can follow all our Transition Farmers on their journeys at [fwi.co.uk/transition-farmers](https://fwi.co.uk/transition-farmers) plus hear more about their challenges in our Transition Podcasts at [fwi.co.uk/transition-podcast](https://fwi.co.uk/transition-podcast)





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# The benefits of planting productive woodlands on your farmland

**T**he benefits of planting new woodlands are numerous. Timber income is a key benefit, particularly as the UK demand for timber means we continue to import around 80% of our timber requirements. Timber from the home-grown market is therefore much in demand, with a lower carbon footprint.

However, woodlands and forests are planted not only for their timber income but also for a multitude of other equally important reasons that benefit both the landowner, society and the environment alike.

Forests and woodlands are renewable by nature and enjoy a carbon-neutral footprint. Planting trees in order to provide ecosystem services (water, landscape improvements) and to improve habitats and biodiversity is an attractive proposition to those farmers who want to make use of their marginal and potentially otherwise less productive land. Woodlands improve the quality of our environment:

- Wooded catchments help protect the quality of our drinking water supplies and can reduce the impact of flood events.
- Trees capture harmful pollutants in our atmosphere and improve our air quality,

especially in towns and cities.

- Tree canopies provide shade, shelter and absorb sound. Soils, animals and humans can be protected from the extremes our weather and climate throws at us.
- Woodlands help to stabilise soils, reducing erosion and slips. They can protect against pollution by providing a buffer between source and receptor or help the recovery of contaminated land.
- Trees need pollination too and woodlands offer a rich habitat for our wild pollinators.
- Woodlands, the timber they produce, and their soils are important reserves of carbon.
- Trees provide shelter for livestock, improving their health, which can reduce vet bills.

Tilhill has the experience and knowledge to be able to guide you through the whole woodland creation process. We design the woodland or forest to meet the owner's specific objectives, apply for grants, carry out any survey work, create planting plans and choose the right species to suit each location – as well as carrying out the actual planting works, helping you to sell the woodland-generated carbon units and by providing ongoing protection, maintenance and advice

## Investing in Your Future

Utilising land for planting a new forest or woodland can prove to be an attractive investment both now and for your future generations.

Land values can increase whilst the trees grow as a commercial crop which, upon maturity, produce valuable timber. Restocking the land after harvesting then ensures the continuous income cycle.

A woodland can also help to increase the overall value of your farm.

We're now in a world of change. Brexit, common agricultural policy, government land use initiatives, and to cap it all, Coronavirus. Pushing through these challenges is the ambition and indeed the necessity, to develop a cleaner, greener environment for us all and a significantly greater focus on carbon and climate mitigation.

Forestry and woodland and the message to plant trees remain a steady and loyal partnership option when it comes to not only providing farmers and landowners with additional income streams, but for companies to use as a means of helping offset their residual carbon emissions. There really never has been a better time to plant trees.



# Productivity: What it is and how to achieve it on your farm

Efficiency is essential for a business to thrive. Louise Impey finds out more

**F**orward-thinking farmers must be more efficient and sustainable to meet the multitude of challenges heading their way – including increased competition in a global market.

An increase in productivity is vital, say experts – a feat achieved by farmers and growers for the past 30 years, even if the UK's growth rate has been slower than some overseas competitors'.

According to Defra figures, the total factor productivity (TFP) of agriculture has increased by 54.2% since 1973, driven by a 32.6% increase in the volume of outputs and a 14% fall in the volume of inputs.

However, the figures also show that since 2000, there has been a pattern of fluctuations. Factors such as unpredictable weather and disease outbreaks have a short-term effect on the figures, but the overall long-term trend is a slow but steady improvement.

Productivity – the rate at which inputs are converted into outputs – measures the efficiency of a farm business.

The first thing to understand is that this is not the same as production, says Derek Carless, AHDB head of farm economics.

"Where inputs such as labour, energy and water are being converted into tonnes of grain or litres of milk, for example, the productivity measurement shows how efficiently this is being done." This is important because the skill in running a successful farm business is to pinpoint the optimum level of output to the inputs used, says Mr Carless.

"Everyone knows that using more inputs is not always the best way to improve profit. It's not as simple as just producing more, it's about getting a better return."

## Improving productivity

At the farm level, there are two ways to improve farm productivity. "Either produce the same output with fewer inputs, or use the same inputs to produce more output."

Measuring productivity is not difficult, says Mr Carless, with most of the information required being readily available in tax accounts or

farm business software.

He notes that arable farmers will be used to looking at their costs of production in £/t, while livestock producers will be familiar with metrics such as gross margin a head and cost of production/kg.

"Don't get hung up on any particular scale. Instead, look to see whether all parts of the business are profitable and get a thorough understanding of what's going on." >

## ON-FARM PRODUCTIVITY CONSTRAINTS

- **Structural** Lack of investment, access to finance, tenancy restrictions
- **Technical** Pest resistance, genetic breakdown, knowledge implementation
- **Behavioural** Risk aversion, confidence in new schemes, lack of co-operation
- **Regulatory** Environmental regulation, labour availability, policy changes

Establishment costs vary between farms, but most can make a saving by using kit that is optimised for the soil type



TIM SCRIVENER

**DEFRA FUNDING FOR PRODUCTIVITY**

The next part of the Farming Investment Fund will see Defra awarding grants to pay for capital investments to improve farm productivity in England.

The application window is expected to open in mid-January, with grants covering up to 40% of the costs of a project.

As the funding is aimed at improving the efficiency of agricultural production, reducing the effects on the environment and encouraging automation where labour is an issue, there are three main categories:

1. Robotic equipment – for harvesting, spraying, weeding and milking
2. Other autonomous robotic technology
3. Slurry acidification equipment to improve nutrient management and reduce ammonia emissions.

The minimum grant is £35,000 and the maximum is £500,000/theme, with the scheme open to farmers in England, as well as contractors that deliver agricultural or horticultural services.

**< Assessing performance**

It's also straightforward to compare your farm's performance with others, either in benchmarking groups or by using the AHDB's online farm business review tool. Where more help is needed in improving productivity, there has also been support provided in the Future Farming Resilience Fund, which was launched last year.

Funds have been awarded to 19 organisations that are helping farmers identify what they need to do and how they need to adapt, in order to survive the transition period and beyond.

The latest figures from Defra show why some years are more challenging than others. Released last month, they reveal that TFP fell by 4.5% between 2019 and 2020, driven by a fall of 5.7% for outputs combined with a small decrease of 1.2% in the volume of inputs.

The drop can be explained by the very wet autumn of 2019, which saw crops left undrilled or failing to establish, and businesses having to accept lower yields. For those with livestock, a slight reduction in output was linked to Covid-19 restrictions and disruptions to markets.

**Efficiency gains**

Market volatility is widely regarded as being here to stay, but when it comes to carbon manage-

**WHAT CAN YOU DO?**

Eight key traits common in top-performing farm businesses

- 1 Minimal overhead costs
- 2 Set goals and budgets
- 3 Benchmarking and gathering information
- 4 Understand the market
- 5 Focus on detail
- 6 Mindset for change and innovation
- 7 Improved people management
- 8 Specialisation

Source: AHDB report

ment and reducing emissions, productivity has a central role in helping to make businesses more efficient, says Sarah Wynn of Adas.

"If you can produce more of the end product for the same or fewer inputs, you are improving productivity and doing your bit on emissions," she explains.

Having animals on the farm for a shorter time, or using a feed additive, are examples of this in practice. Other ways include optimising fertiliser applications, making good use of genetics and protecting crop and animal health, as well as using the best land to produce more.

"Taking the marginal areas out of production allows you to farm for productivity and for nature or carbon," she says. "It's something that the emphasis on public money for public goods is encouraging."



**CUTTING COSTS DOESN'T ALWAYS MEAN LOWER YIELDS**

Reducing crop establishment costs can help increase farm productivity – as long as it avoids a hefty reduction in yields.

Establishment costs range widely between farms, confirms an analysis of the 20 arable units that make up the Monitor Farm Network, which is co-ordinated by the AHDB.

The highest crop establishment cost – an eye-watering £290/ha – included subsoiling, ploughing, pressing, cultivating, drilling and

rolling. It achieved a winter wheat yield of about 10t/ha. Three other farms had costs higher than £200/ha.

But the lowest establishment cost across the 20 farms was just £27.40/ha – achieved by a John Deere 7530 pulling a 4.8m Claydon direct drill – followed by a John Deere 6620 pulling a 12m Claydon roller at £5.10/ha.

"It's a cheap, cheap system," says Harry Henderson, AHDB arable farming

and machinery specialist. A reduction in tillage doesn't necessarily mean a reduction in yield, he adds. "Attention to detail is needed, but the farm is also achieving 10t/ha."

Not all farms are suited to direct-drilling. A varied approach with occasional inversion tillage is more appropriate on some soils. But Mr Henderson says a big reduction in tillage is possible on others, with the option to direct-drill where appropriate.

**Land sparing**

That's a view shared by Andrew Balmford of the University of Cambridge, who believes that farming should be as high-yielding as possible so it can be limited to relatively small areas, leaving the rest for biodiversity.

Having conducted a research review, he says we should concentrate farming to secure the highest levels of production we can from land, in order to spare the remaining areas as wilderness for species and carbon.

Prof Balmford points out that the bottom third of farmed land produces just 15% of English agricultural output and that 21% of farmed land in England will need to be rewilded or used for biofuel if the UK is to hit its net-zero targets.

Known as land sparing, concentrated farming that allows for more natural habitat also sequesters more carbon, he adds. "There's a trade-off to be struck between crop production and biodiversity if we are going to meet future food targets. Increasing productivity in the right areas helps with this."

**Land sharing**

Not everyone agrees. The alternative – land sharing – is a move to food production systems that work in harmony with nature, allowing both to co-exist.

That's the premise of most regenerative agriculture systems, which have put soil health first and become less reliant on artificial inputs. Practitioners have accepted that environmental sustainability and nature recovery are key requirements for the future and are using diversity to deliver for biodiversity.

Figures from the Groundswell benchmarking group show what can be achieved – the latest results confirm that margins are maintained in regenerative systems, even where there is a yield dip. Variable costs associated with a regenerative approach were 18% lower than those of a conventional system, while labour and machinery costs were 32% less.

With less capital tied up in variable costs and kit, the net margin after labour and machinery was higher in a regenerative system at £27/ha, compared with a conventional system of £7/ha.

Groundswell benchmarking, which is co-ordinated by Gary Markham of LandFamilyBusiness, has led to a new KPI for no-till systems – the average machinery capital per tonne of winter wheat. That currently stands at £74 for regenerative systems and £91 for conventional. ■



Jack Thornton with girlfriend Samantha Porter and dog Lily

**CASE STUDY: JACK THORNTON, PRESTON, LANCASHIRE**

Using feed more efficiently and better meeting deadweight specifications are helping a Lancashire beef farmer increase returns while reducing his carbon footprint.

Eighteen-year-old Jack Thornton began taking on the 32ha farm near Preston, with a further 80ha of grazing land in the Lake District, after he left college – and he is working alongside his grandfather.

The farm runs 300–400 head of mainly Belgian Blue cattle, bought at the local market. They range in age from five months for turnout up to 26 months for fast turnaround finishing.

Mr Thornton is keen to improve efficiency of the beef enterprise and began weighing cattle monthly, using the Breedr app to collate weight data and predict optimum sale dates.

The farm used to have an issue with overweight cattle. "We cut down our

overweights almost instantly," he says.

"The cost of the weighing system was about £1,000 and paid for itself with one load of cattle." Cattle are also on farm for 25 days less on average.

In addition, Mr Thornton has cut concentrates and increased silage without negatively affecting daily liveweight gain; which averages 1.5–2kg. "As we are weighing, we know cattle are not growing less."

Before using Breedr, cattle cost £20 a head a week to feed and were making £15/week. Since using the app they are making £25/week. The farm's carbon footprint has also reduced, adds Mr Thornton.

"Cattle are being fed more efficiently and have fewer days alive, which reduces carbon footprint. At finishing, cattle are producing 9kg of carbon dioxide equivalent an animal a day – equivalent to 225kg an animal during the time it is on the farm."

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 BARENBRUG



### FARM FACTS

#### RH-J Farms

- Farm size: 680ha
- 430ha owned, 250ha tenanted
- Enterprises: combinable crops, vining peas, sugar beet, forage maize, 900 sows
- 700mm annual rainfall
- Soil: black fenland, silty clays, sands

### TRANSITION GOALS

- Recruiting and retaining first-class staff
- Pursuing technical efficiencies
- Paying back borrowing

# ‘We have to look at the whole business’

A proactive approach can help improve farm productivity. **Tim Relf** reports

**R**estructuring the business, pursuing technical improvements and keeping long-term options open are priorities for Lincolnshire farmer Alistair Hall-Jones.

Getting the business in the best shape possible to enable decisions to be made as post-transition opportunities become apparent is a key focus. The 680ha farm – sandwiched between the Lincolnshire Wolds and the Fens around the village of Toynton St Peter – comprises two pig units, arable enterprises and a 250kW/hour anaerobic digestion (AD) plant.

Mr Hall-Jones came back to the family farm 13 years ago after a spell working for a property firm in London. “Nobody knows exactly what the post-basic payment world will look like, so there is an element of holding fire, but you can’t sit around waiting for things to happen,” he says.

“All our land is being utilised in the best way it can be right now, and we’re pursuing practical and technical efficiencies, in tandem with some restructuring.

### Strong position

“From the outside, it might look like we’re not changing, but we’re consolidating and aggressively repaying borrowing, so we will be in a strong position in five to 10 years’ time if we want to raise money for new opportunities.

This reorganising and drive to increase the business’s asset value has been made alongside efforts to get the right team in place, with 13 people currently employed.

Experience, attitude and communication skills

are crucial criteria when recruiting. It’s all about having the right people in the right roles – whether it’s the pig expert Mr Hall-Jones has brought in from Romania, the two 50-somethings who have been key members of farm staff for decades, or the raft of new young hires.

“If they have the right qualities, you have to invest in them and give them opportunities. It will be ever-more important to have positive, flexible people at this time of change.”

### Finding efficiencies

The team’s prowess is helping find efficiencies. Smart soil sampling and analysis, combined with careful targeting of liquid and solid digestate around the farm, has brought fertiliser bills down, for example, meaning no P or K is now bought and only a little nitrogen has to be purchased. “With fertiliser prices going through the roof this year, it’s highlighted the need to do this more.”

The arable enterprises generate about 20% of the total bottom line, with the pigs and the AD plant each contributing about 40%. The three prongs of the business dovetail and help spread risk. “Right now, wheat prices are through the roof but we’re getting hammered on the pigs,” he says.

While the pig breeding and finishing operation, which sends nearly 22,000 head a year to Morrisons, won’t be directly affected by the phasing out of BPS, the team is acutely aware of how interlinked the different enterprises are. “We can’t simply think we’ll absorb that loss across the whole business and we’ll be fine. We have to look at the whole business and be proactive.”

### Carbon offsetting

This is especially important given new markets could develop with private sector money on offer for projects such as carbon offsetting, alongside government “public money for public goods” funding. “We’ve got experience of environmental projects, which should stand us in good stead. We’re in a legacy HLS-ELS [Higher Level Stewardship/Entry Level Stewardship] scheme, which ran to 2020 and we’ve been able to roll it over for the past two years.”

The original motivation for installing a small AD plant in 2014 was to use the farmyard manure and slurry from the pigs and now, as well as providing power for the farm, it is “exporting” to the grid. “Growing 200 acres of maize and using all our slurry and muck means we’re not dependent on anyone else – it’s a closed loop.”

Meanwhile, the Feed-in Tariffs subsidy in the AD plant – set to continue for another 14 years – means this is a reliable, regular source of income.

But Mr Hall-Jones is already thinking beyond that, and whether there could be opportunities connected to other technologies, perhaps integrating some hydrogen generation.

“We don’t have a single, groundbreaking long-term goal, but we’re taking lots of actions to put us in the best position possible for the future.” ■

● Follow Alistair Hall-Jones and our other Transition Farmers as they adapt their businesses for the new environmental schemes and the phase-out of the Basic Payment Scheme. Find out more on **p33**



## Supporting the transition to nature-friendly, low carbon farming.

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# Why better productivity is all about the right balance

There is no single recipe for increasing farm output. **Johann Tasker** reports

**F**armers seeking to increase productivity should adopt a balanced approach – rather than embarking on a simple quest to maximise farm output, say experts.

A strategy based purely on raising output can certainly increase farm revenue. But done badly it can also result in costly unintended consequences – wiping out any additional profit and causing environmental challenges too.

## Productivity paradox

The idea that UK farmers must ramp up production because they are languishing behind farmers overseas deserves closer scrutiny, says Michael Lee, deputy vice-chancellor and professor in sustainable livestock systems at Harper Adams University.

Suggestions that agricultural productivity is increasing more slowly in the UK than in other countries are not what they might first appear, says Prof Lee. Although there is always room for improvement, UK farmers are already immensely successful.

"If you look at wheat yields, the UK has been

leading other countries for many years. And if you are already more productive to begin with, then everyone else is playing catch-up in terms of efficiency, rather than forging ahead."

It's a similar trend with UK dairy – especially some of the more intensive Holstein production systems, says Prof Lee. It is often the case that other countries are increasing their productivity to UK levels, rather than the UK falling behind.

Similarly, Prof Lee says productivity has plateaued in the UK beef and sheep sectors because livestock producers have successfully responded to government policies encouraging a focus on grass-based systems.

"What we have seen in the UK is a combination of some farm sectors maintaining high levels of productivity, while other sectors have delivered what policymakers have wanted them to deliver via the Basic Payment Scheme.

"You could argue, of course, that those policies have not been right. You could argue that a lot of improvements need to be made. But it's not fair to look at skewed data on productivity when farmers have delivered exactly what they were asked." >



< Note of caution

UK arable growers in particular have been way ahead of the curve, says Prof Lee. They are a prime example of the Pareto Principle – or 80:20 rule – which suggests that 80% of farm output comes from the first 20% of effort.

“The more productive you are, the more difficult it is to improve,” he explains. “It’s the same with wheat. Beyond a certain level, it becomes harder to increase yields. So countries which are less productive in the first place find it easier to make rapid improvements.”

In any case, excessive productivity can sometimes bring unintended consequences. The Netherlands, for example, ramped up agriculture production by focusing on intensification. But doing so also resulted in increased pollution.

“They’re now rolling back some of the components of productivity after realising that they need a more circular livestock system rather than a more intensive livestock system – whereas in the UK we have always had that more balanced model.”

The more subtle mix of extensive and intensive systems seen in the UK – with more of a focus on nutrient use efficiency – means a lower risk of phosphorus pollution. But Prof Lee says that doesn’t mean intensive systems are wrong.

“We certainly shouldn’t demonise any particular farming practice. That’s critical, because we need a mix of systems to deliver a range of high-quality food at prices that everyone can afford – whatever their income level. Put simply, we need to do everything a little bit better. There is a place for sustainable intensification – a focus on increasing yields with fewer inputs – and there are many sectors that do that phenomenally well.

Joined-up approach

“But we also need to encourage agriculture that works at one with nature – a more agro-ecological and interconnected approach – and certain sectors align very well with that concept, including beef, sheep and dairy.”

Greater integration between the UK dairy and the beef sectors, for instance, would result in significantly more dairy beef – better utilising and optimising available on-farm resources while generating valuable additional income.

Increasing the use of high-quality forage – and replacing imported soya feed with local home-grown proteins – could reduce the carbon footprint of UK livestock production while helping UK agriculture meet net-zero targets.

Feed companies are already working to identify opportunities to better use by-products rather than raw materials for animal feed. “That is the role livestock will have to deliver – and that’s where it’s going to add value,” says Prof Lee.

Meanwhile, a resurgence of interest in the re-introduction of lowland beef and sheep into arable systems is improving crop yields and soil organic matter by increasing manure use rather than relying solely on inorganic fertilisers.

“Looking ahead, the message is about better integration, increasing the usage of by-products on farms and identifying ways to use available resources more efficiently. They can all help improve productivity – and do so in a way that is sustainable.” ■

SCHOOL AIMS TO HELP FARMERS CREATE SUSTAINABLE SYSTEMS



PAIG COULIN HILLIER

The School of Sustainable Food and Farming is working with farmers and other supply chain businesses to reduce the environmental impact of food production.

Based at Harper Adams University in Shropshire, the school has three steering partners: the NFU, retail giant Morrisons and fast food chain McDonald’s. Training for farmers will be provided by the university and a host of delivery partners, such as Raft Solutions.

Harper deputy vice-chancellor Michael Lee described the partnership as a critically needed collaboration that will support the transition to a more sustainable and profitable food system – good for the planet as well as human health.

The school’s primary goal is to achieve net-zero UK agriculture. But its ambitions include wider aspects of sustainability – including biodiversity, animal welfare, rural community support, green energy production and farm profitability.

Prof Lee says a more sustainable blueprint for sectors such as dairy, beef, sheep, pigs and poultry would include stripping out imported feeds from livestock rations, reducing methane output and improving soil and animal health.

“We are trying to find the sweet spot in terms of the balance between input costs and output value,” says Prof Lee. “In a more sustainable system, you might accept a lower level of performance in exchange for using significantly fewer and less damaging inputs – although in a win-win scenario, you would maintain that performance while stripping them out.

Launched last autumn, initial research topics include: livestock breed choice,

diet composition, yield improvement, agricultural building design, on-farm renewable energy, precision farming, sensors and use of data.

Research findings will help farmers tweak their management practices to be more sustainable. Raft Solutions is already playing a key role in developing practical skills training associated with animal breeding and health.

Raft Solutions chief executive Jonathan Statham says: “The pressures on farming and farmers are intense, but there are win-win opportunities where better animal health and welfare are better economically as well as better for the planet.

“Reducing the waste of poor health and reproductive inefficiency alongside delivering practical precision livestock farming solutions is where our work supports sustainable farming.”

For more details, visit [schoolofsustainablefoodandfarming.org](http://schoolofsustainablefoodandfarming.org)





# Digital tools supporting sustainable success



User view of FieldView in action

Operating within a farming landscape of reduced support, tightened regulation and increasing consideration for environment, biodiversity and carbon footprint means farms must adapt and embrace new ideas and technology to remain profitable and succeed.

This ability to change has been fundamental to the success of McGregor Farms, Berwickshire. As early adopters of solar technology and precision farming strategies, the management team of David Fuller and Tom Hoggan are optimistic about the future, pointing out that advances in plant science and ag tech will help boost productivity.

"We've been food producers and custodians of the countryside for some time. With advances, there is plenty to be positive about," suggests David.

Like many, they face numerous challenges in maintaining yield and margin believing that environmental gains can only come about with ongoing commercial success. So, for them, refining crop management strategies further is essential in improving margins and farm footprint. Both are keen advocates of YEN (Yield Enhancement Network), and the percentage yield achieved versus farm potential data has indicated the refinements they seek are possible.

Of course, achieving sustainable success is a long-term plan and looking for small gains

"You just can't make decisions on one or two seasons. There is little point in putting a crop in the ground if growing costs exceed those it generates"

in agronomy requires access to accurate and detailed data. With the help of tools such as FieldView™, David and Tom are building a library of field data from across several seasons to inform their thinking: its field benchmarking functionality providing invaluable insight in building that all important 'bigger picture'.

Their view is that there is no 'one size fits all' for a sustainable future, so they've trialled extensively on the farm to see what works best, something they recommend for all. According to David, the FieldView data will be key, for example, in highlighting field areas suitable for alternative uses, "As the data builds it will be easier to see underlying issues restricting crop potential and highlight possible remedies to overcome these – and we'll have the data to identify it."

With farmers playing a crucial role in helping meet net zero targets, adopting smarter

on-farm technologies and using digital farming platforms like FieldView can all help maximise productivity and are invaluable tech tools for capturing and easily evaluating data.

"We can pull out areas of the field where we have applied variable seed or nutrition rates and compare that against yield. It takes out any ambiguity when comparing variable rate applications"

For more details on David and Tom's farming strategy and how FieldView is providing insight for their decisions, please visit [www.cropscience.bayer.co.uk/mcgregorfarms](http://www.cropscience.bayer.co.uk/mcgregorfarms)



Kate (left) and Vicky Morgan

#### FARM FACTS

*D P Morgan, Pockthorpe, East Yorkshire*

- Enterprises: weaning 1,000 pigs a week – stock finished in own buildings and through B&B arrangements with local farmers
- 140ha rented out
- 15 staff employed across breeding and finishing enterprises and feed mill
- 162mm annual rainfall
- Soil: chalky wold

# ‘I’m sick of being a price-taker, not a price-maker’

Surviving the current pig sector crisis is fully occupying the Morgan family, but they are hopeful of a better future. **Tim Relf** reports

**M**aking long-term plans is tough, especially when trying to deal with short-term problems of the magnitude now faced by pig producers. “The past eight months or so have been the most emotionally and financially stressful we’ve ever had,” says Vicky Morgan, whose family business, based near Driffield, East Yorkshire, has 1,700 breeding sows on a high-welfare indoors system.

A lack of butchers in the processing sector due to the Covid pandemic and Brexit-related labour shortages, together with the hike in feed costs and glut of pigmeat on the market, has seen returns slashed. “The pig industry is notorious for having good times and bad times, based on supply and demand – but this is unprecedented,” says Vicky.

The situation has made her – along with sisters Kate and Rachel and mum and dad, Sue and David – reflect on the future.



#### Structural change

Given the pig sector has never been subsidised, their transition challenge isn’t about dealing with the fall in support, but about trying to wrestle back more control of their own fate – partly by instigating structural change in the food chain through lobbying. “Agriculture has always been bottom of the pile, with farmers the price-takers not price-makers. I’m sick of this. The way the supply chain works has to fundamentally change,” she says.

Vicky says pig farmers are losing money, but the processors and retailers are still receiving

their margins, partly by cutting back the stock numbers they take, in some instances contrary to contractual agreements. “The government has to step in and redress these supply chain imbalances, otherwise there won’t be any independent pig producers left.”

As a prominent “face” of the sector – actively campaigning and appearing in the media – Vicky has always been involved with the National Pig Association. “They do an amazing job,” she says.

In a world of volatility and uncertainty, the Morgans are keen to have more influence over their own destiny.

#### More control

“The more of our business we control, the less precarious the position we could be put in. Take feed. At present, feed bills account for about 70% of our costs and we grow less than 10% of it.

“We have our own feed mill and we take the grain and the straw from the 350 acres of land we own and rent out, but we’re still largely at the mercy of the feed market.”

Recent events, meanwhile, have made her question the current worth of contracts. “Farmers base their business decisions on having the security of a contract, but if both sides aren’t prepared to stick to it, it’s worthless.

“The problems in the supply chain have not been of the farmers’ making, yet we’ve been the ones expected to take the hit. And George Eustice’s comment about this being part and parcel of our commercial risk showed a complete lack

of understanding of the situation on his part. We have to make sure there is reform in a way that means we never have to go through this again.”

#### Spreading risk

The immediate aim has been to get through the current crisis, then hopefully the situation – and prices – might improve in the spring. “There could well be a shortage of pigs, because a lot of people have gone out of production in Europe and the UK.

“There is also potential that producers could receive money under the new post-Brexit domestic agricultural policy for doing good work in terms of enhancing welfare, for example.

“Recent months have made us re-evaluate what we’re doing and why. We’re looking into diversification – in particular, providing holiday accommodation. It will spread our risk, but anything tourism-related is a lot of work and there are only so many hours in the day.

“I still get up and want to work with pigs – because it’s a job I love. But things have to change. We’re having lots of discussions about the future – but we’re certainly not about to give up.” ■

● Follow Kate and Vicky Morgan and our other Transition Farmers as they adapt their businesses for the new environmental schemes and the phase-out of the Basic Payment Scheme. See more on **p33**

#### TRANSITION GOALS

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



# Establishing a better way



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# Working together to drive productivity in the UK pig & poultry sector

**B**y 2050, forecasts estimate the population of the UK will be approximately 77 million, resulting in increased demand for protein products.

Projections show that chicken production will need to increase by five million birds per week, and pig production by 115 thousand head. These combined will require an additional 2.8 million tonnes of feed per year.

Alongside productivity, precision feeding and farm efficiency look to be the key driving forces for the future success of our UK pig and poultry industry.

At ABN, the leading British manufacturer of pig and poultry compound feed, we apply a partnership approach to meet this demand. By focusing on productivity,

profitability and performance we can support the future of our industry.

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**Take out:** Now is the time to address your productivity, profitability and performance to guarantee future success

## Tackling Unpredictability

As well as this growing consumer demand, our industry faces unpredictable challenges such as Covid-19, Brexit, animal health and welfare, alongside increasing sustainability and Net Zero responsibilities.



Danny Johnson, General Manager of ABN comments, **"In periods of uncertainty, the importance of high-performance increases across every part of the supply chain."**

With energy costs incredibly high and volatile raw material markets, productivity becomes even more important. Every ounce of performance you can get out of the bird or pig is essentially money saved.

**"We are constantly evaluating our product range to increase sustainability, whilst also looking at potential alternative raw materials to see how they fit into a productive feeding programme,"** says Brian Kenyon, ABN's Senior Nutrition Manager.

**Take out:** Know your standard measure of farm performance and maximise your productivity – small margins can make a big difference

ambitious Net Zero goals, we are all needing to understand the environmental impact of our part in the supply chain.

ABN's Formulation Manager, Claire Shaw explains, **"We have been profiling our raw materials to effectively build a database of their carbon emissions, incorporating impacts like transport. This will help to benchmark where you currently are before exploring alternatives to reduce your footprint."**

**Take out:** Work with your suppliers to help achieve your environmental targets

Partnerships with your supply chain are more important than ever in helping you to increase your productivity. We would be proud to be a part of your journey.



## Sustainability through Efficiency

As our industry faces increasing pressure from processors, retailers and consumers to meet



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# How working together reduces costs and increases efficiency

Collaboration can help farm businesses be more profitable. Louise Impey reports

**F**armers looking to exploit new opportunities, introduce greater flexibility and make their businesses more resilient should consider collaborating as a route to a more productive future.

Joining forces with other farmers and growers is a proven way of reducing costs and increasing efficiency, while adding the new skills and expertise that are required by progressive businesses.

For some, sourcing investment and getting the right people in place are priorities, as they make the changes that new policy demands of them. For others, being able to step back and reduce their workload and responsibilities is a key requirement, with resulting lifestyle benefits.

Whatever the reason, most farming businesses will benefit from some form of collaboration, believes Richard Means, managing partner with farm business consultancy Ceres Rural.

A range of tried-and-trusted arrangements are possible to suit different situations when two or more farmers work together in a structured arrangement. "Achieving economies of scale is at the forefront of most discussions, but joining forces with others also introduces more flexibility," says Mr Means

Given the scale of change that the industry is going through, it's unsurprising that different

opportunities are emerging and new sharing models are being contemplated, he adds. "It all depends on how much risk each party is willing to take and how any agreement is structured."

## Personnel

A relatively significant change in the personnel of one of the founding businesses is often behind the first discussion about any joint venture opportunity.

"Loss of a key member of staff, whether that's through retirement or for some other reason, is a common starting point," he says. "Staff are so important to any business that any changes are deeply felt."

A shared or similar outlook between the interested parties at the outset is fundamental for an agreement to be reached, he adds.

In the same way, a gap between generations or a lack of skills and experience can be plugged by collaboration – helping with succession and bringing accountability and professional management to the table.

"Personalities are fundamental to whether a joint venture will work and have much more bearing on its success than geography or location. You must be on the same wavelength and enjoy what you are doing."

## Business projects

A diversification project is another reason for initiating a joint venture discussion.

"Where one of the parties has a new project that they need to invest time in, it allows them to free up that commitment but still make good use of their partner's farming expertise.

"It's also a way of giving them access to skills >

## GRANT FUNDING

Defra's Farm Equipment and Technology Fund provides investment towards specific items of equipment that will improve productivity and efficiency for farming, horticulture and forestry in England.

Part of the Farming Investment Fund, it has now been extended to contractors, which will include those involved in joint ventures.

Only items on an approved list can be purchased through the scheme, with the minimum grant value being £2,000 and the maximum £25,000. It is open for applications until September 2022.

For details, visit [gov.uk/guidance/farming-investment-fund](http://gov.uk/guidance/farming-investment-fund)

TIM SCRIVENER



Machinery sharing is a tried and tested way of cutting running costs

James MacCartney belongs to a discussion group that meets six times a year



**COLLABORATION DOESN'T HAVE TO BE COMPLICATED**

Comparing notes with nearby farmers can help improve productivity – generating new ideas and different ways of doing things that are more effective.

Transition Farmer James MacCartney says joining his local discussion group has proved to be an invaluable source of business advice and helped him improve his beef and sheep enterprises near Oakham in Rutland.

The Welland Valley livestock discussion group meets six times annually. Sharing thoughts and experiences with other producers is hugely beneficial, making them the six most valuable days of the year, says Mr MacCartney.

"It is refreshing to sit down with farmers who aren't painting a perfect picture of their businesses. The way we get better is by telling each other what we are doing wrong, rather than what we do right."

Five years ago, the farm relied solely on permanent pasture to fatten livestock – to little effect. After attending the group, Mr MacCartney moved to high-performing hybrid grass varieties and productivity has increased. "We try to be forward-thinking. Everyone is open-minded so we are all prepared to try new things. We've all got the same goal ultimately – we aren't competing with each other. Our competitors are Australia and New Zealand – not the farmer next door."

● For more on our Transition Farmers, see p33



Sharing knowledge and expertise can help get a project off the ground

< that they may not already have but that are required for the new venture."

Diversification projects are becoming more popular as a means of plugging the Basic Payment Scheme funding gap, so specialist experience is being sought, he reports. "It may be the difference between the success and failure of the project."

**Machinery costs**

The third reason is what Mr Means describes as "crunch time", which is when a business is looking at making a big investment in a new piece of machinery.

"The need for a new combine or a sprayer is a good time to have a conversation with a neigh-

bour. Power and machinery is the largest cost in the arable sector so it's likely that other growers are also feeling the pain."

Other sharing models such as machinery syndicates are well established, with resulting labour and machinery costs in such arrangements being well below the average.

**Flexibility**

Making the most of the flexibility that fluid rotations offer is his final reason for renewed interest in joint ventures and share farming. "We've seen innovative changes to rotations as stewardship has come in and its management has become more important," explains Mr Means.

Taking unproductive areas out of the mix and leaving areas for wildlife becomes more straightforward over a larger area, with opportunities to enhance the stewardship offer and concentrate on the better-performing parts of the farm where partners are involved, he adds. "You're not obliged to grow crops on every square inch now, so there are different opportunities to consider."

**Challenges and pitfalls**

There are several challenges to overcome in reaching an agreement with others, as the respective

**HOW CAN COLLABORATION HELP WITH PRODUCTIVITY?**

- Access to funds for precision technology
- Increased output from better-performing areas
- Enhanced stewardship offer
- Better or larger machinery
- Improved management
- Marketing and input buying strength



TIN SCHWEPER

interests of all parties have to be taken into account, warns Mr Means.

Deciding on the right business structure – whether it's complex or simple – is essential, as there will be tax implications where machinery purchasing and selling is involved.

"Think about how you can incorporate any existing machinery before you embark on a needless spending spree," he advises. "And also think about any prioritisation of field operations."

With a well-structured agreement, none of these will be an issue as the output and costs are shared, maintains Mr Means.

His final point is to think about an exit strategy before committing to an agreement. Things inevitably change over time and it's important there is a route out of the agreement, and that it doesn't unfairly penalise any of the parties involved.

### Appropriate choice

Collaboration comes in many different forms – from contract management and farm business tenancies to share farming, sharing of individual machines, machinery syndicates and machinery syndicate/share farming combinations.

There are clear differences between contract and share farming, with interest in the latter rising

as the farming landscape changes.

With contract farming, a single business is farming the land based on an agreement for services. In a share farming arrangement, the participants are all engaged in farming and operate separate farming businesses on the same area of land. In its simplest form, two farmers sharing some machinery should involve accurate recording of time and operations, so that any differences can be sorted out at the end of the season.

In a formal joint venture, a limited liability partnership is often the best way to allocate the costs associated with shared cropping and minimise tax obligations. As a result, a separate legal entity is usually set up as a machinery and labour cost centre.

Whatever the route, taking advice from a solicitor and an accountant is key. Machinery allowances and research and development (R&D) credits for company structures (which give a 130% tax rebate on the cost of R&D), may be appropriate.

Managing your tax – in its many forms – is still a big driver to continue farming, says Mr Means. The recently reformed Entrepreneurs Relief also has an influence, especially where parcels of land are being sold. "Tax reasons can dictate what a joint venture will look like." ■

### DAIRY FARMS WORK TOGETHER TO REDUCE COSTS

Transition Farmer Eddie Andrew is working closely with two neighbouring milk producers to secure a viable future for all three businesses.

Mr Andrew milks 90 cows at Cliffe House Farm, Dungworth, on the outskirts of Sheffield. The farm includes retail and doorstep milk deliveries and ice cream sold under the Our Cow Molly brand.

The two nearby farms are a similar size, says Mr Andrew. "One neighbour is right next door – so our cows are in one field and his cows are over the wall – and the other is about a quarter of a mile down the hill," he explains.

Mr Andrew already shares a dairy. Ultimately, and when the time is right for all involved, the aim is to move all the cows onto a single site – and bring together other operations, such as feeding, silaging and muckspreading.

"Currently, we're all doing the same jobs separately. Working co-operatively with other farms is quite a change compared to working on your own – but since we've built the dairy, we've learned that we can work together."

At the moment, each farm has its own feeder wagon, telehandler and muckspreader. Sharing equipment, with one farm undertaking work under contract for the other two businesses, would be more cost-effective, says Mr Andrew.

● For more on our Transition Farmers, see p33

OUR COW MOLLY

Eddie Andrew is looking to achieve cost savings by sharing machinery with neighbouring farms



# THE JOURNEY TO PROFITABLE, SUSTAINABLE FARMING CONTINUES.



Take 7 steps to a sustainable future.

**New farm policy means that environmental responsibility and commitment to sustainable crop production are more important than ever.**

However, sustainability can mean different things on different farms and with changes to farm subsidies and future legislation leading to a new era of 'payments by results', it's vital that UK farmers have access to the right support and advice to deliver and evidence results.

Taking a holistic approach to farm management is therefore key and to help, Frontier's sustainability team has created a practical model of seven focus areas.



Each area is backed by the knowledge of our experts, underpinned by research, specialist services and advice that can be tailored to your business. No matter where you are on your journey to a more sustainable future, we can help you implement the crop production strategies that are right for your farm business.

- 1 Help with product selection, genetic and biological solutions and nutrition programmes.
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- 4 Investigate alternative cropping and integrated pest management strategies.
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- 7 Support with legislation, farm assurance, stewardship and the compilation of farm policies to evidence your work.



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Farm manager Duncan Blyth (left) with assistant farm manager James Sedgwick

#### FARM FACTS

Barton Bendish

- Farm size: 2,650ha (part of Albanwise Farming's 12,000ha across Norfolk and Yorkshire)
- Enterprises: mainly arable, with grassland, woodland and wetlands
- 660mm annual rainfall
- Soil: mix of light chalk and heavier loams

#### TRANSITION GOALS

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

# 'Small changes can add up to a big difference'

Maintaining productivity while hitting ambitious carbon and environmental targets is focusing minds at Albanwise Farming. **Tim Relf** reports

**N**o one silver bullet will enable farms to prosper over the transition period, says farm manager Duncan Blyth. "Instead, it will be a case of making incremental changes across a whole range of different areas that will add up and make the difference."

While some farmers might choose to completely change what they do, the approach is one of evolution at Barton Bendish, one of Albanwise Farming's two large-scale sites in Norfolk.

"What we've done in the past has worked and been profitable, so it wouldn't be sensible to rip up the rulebook," explains Mr Blyth.

#### Innovation

That said, innovation is very much the order of the day and the team are conscious new revenue streams will have to be found. "The challenge of losing BPS is huge," says Mr Blyth. "The situation is further complicated at present because although we still have some support under the Basic Payment Scheme (BPS) and are in a period of high commodity prices, the benefit of this is being massively eroded by fertiliser costs.

"How we approach the next 18 months is occupying a lot of our thoughts in tandem with the withdrawal of the BPS over the longer term."

Managing soil in new ways is key to the thinking at Barton Bendish, which extends to 2,650ha of owned land, with an additional 500ha farmed on a contract farming agreement. The main crops are

cereals, oilseed rape, sugar beet and pulses, with feedstock grown for local anaerobic digesters.

"Soil is a farmer's core asset but, across the country, we've collectively neglected it in the post-war era. The challenge now is to maintain production while enhancing our soils."

Mr Blyth says BPS will continue to provide some "cushion" at the start of the five to 10 years it could take to make "substantial and lasting" improvements to the soil. But there could come a pinch point in the latter half of this timescale.

#### Necessary change

He is optimistic, however, that productivity can be kept high. "There has been a big introduction of livestock and livestock manures over the past three years, and cover cropping has been a big feature here over the past five years, so we are some way into the process already.

"It may be that 10t/ha is no longer the industry's headline target yield, but growers can still improve their margins if their costs fall sufficiently."

This focus on soil health is closely linked to the strategic carbon ambition at Albanwise, which has set itself the target of reaching net zero by 2030. "The initial priority is to establish a baseline that we're confident in, that we all understand and that enables us to decide the steps we need to take. Baseline is a massive task for all our natural capital aspirations, and it's crucial we get it right."

Natural capital – in all its guises – is a big poten-

tial revenue generator across Albanwise's land holding. "We need to make sure we spot and maximise these opportunities as money shifts from BPS into payment for public goods," he says.

#### Environmental focus

The farm has always been in stewardship schemes, and has concentrated on environmental concerns over the past decade, reflected in the strong populations of grey partridge, turtle dove, stone curlew, corn bunting and lapwing.

"A lot of work has gone in to managing the fabric of the arable habitat – we have a really well-managed hedgerow and tree network."

This has been given a further boost by the creation of a new division – Albanwise Environment, headed by Mike Edwards – which manages the estate's environmental features and will eventually become a service offered to other farmers.

"In some ways, we're stepping back and learning how our forefathers farmed," concludes Mr Blyth. "But that doesn't mean we're going backwards. We'll be taking the best of what was done historically and combining it with the best new thinking. We need to keep innovating and using cutting-edge technology to help us achieve our aims." ■

● Follow Duncan Blyth and our other Transition Farmers as they adapt their businesses for the new environmental schemes and the phase-out of the Basic Payment Scheme. Find out more on [p33](#)

# Long-term loans unlock productivity

Productivity is high on the agenda as farm businesses review what, why, and how they farm. All have major implications on finance and cashflow during a time of historic change, so how can farmers fund that?

**T**im Coates, co-founder of Oxbury agricultural bank, is also a fourth generation arable farmer, in the Oxfordshire Cotswolds. Preparing his farm business for challenge and opportunity, he's taken out a long-term loan to maximise productivity and meet his carbon reduction objectives.

After working in the policy and finance sector, Mr Coates was drawn back to the 345ha farm as part of the family's succession plans. Over a three-year period he reacquainted himself with the intricacies of the arable business before eventually taking over in 2018.

"Taking on the farm post Brexit and in a changing policy landscape, it was obvious a lot of change was going to happen concerning farming practices, compliance, income and cashflow," he says. "The primary need is to produce food, while maintaining margins and farming in a way that manages resources and contributes to becoming climate positive."

Since 2018 Mr Coates has identified productivity and environmental gaps and baselined the farm's carbon and biodiversity levels, allowing him to pinpoint areas of the business that need investment and focus. He has also implemented regenerative methods like introducing livestock to the arable rotation, incorporating herbal leys, and growing companion and cover crops.

But an integral component of the arable enterprise - grain storage - was in desperate need of attention. "The storage on the farm was ageing and costing us a significant amount of time, effort, and expense to maintain, especially as it had diesel engine fans."

To reduce energy consumption and costs, and increase grain storage capacity to meet the needs of a new 141ha arable tenancy, Mr Coates overhauled the facilities, enabling a new income stream from storage services. He has increased storage and drying capacity from under 400 tonnes over 2,500 tonnes, and installed new electric fans.

The farm already produced 60kW of solar power and this has increased to 180kW with the additional roof surface available for installation, helping offset energy costs. Decommissioning old storage buildings allowed them to be repurposed as workshop spaces to improve repair capabilities on the farm. This also benefits the 405ha contracting partnership the business entered into during 2021.

And the investments are paying off in energy and repair costs alone. "The grain storage-related electricity, fuel, and repair costs averaged £12,000/year three years ago: Last year (2021) the store produced a return of £3,000/year," he explains. "The next phase is to have battery storage installed on the farm to further improve energy consumption over the year." Mr Coates used a long-term loan from Oxbury to modernise and

expand the grain storage facilities. The repayment period of 25 years allowed the cost to be spread over the equipment's expected useful lifetime.

"It makes the loan repayments affordable – but more importantly it frees up cashflow to continue to invest in the business for long-term reward."

Mr Coates is certain that businesses that produce food efficiently using sustainable practices, and which help mitigate climate change and enhance the environment, will be favoured.

"The industry has already made great progress and farm businesses are doing great things to reduce their impact on the climate and localised environments," he says. "Where businesses have been hesitant to invest in improving productivity because of limited funds, a long-term loan could work very well for them and their business."

Nick Evans, co-founder of Oxbury, explains: "Over the past 12 months around 30% of our loans have gone towards productivity projects, with the average borrowed amount around £1 million. Projects have included farm infrastructure, carbon reduction and renewable energy.

"Loans can range from £25,000 to £10 million and are offered with repayments that match the seasonality and needs of the farm business. We want to support farmers through the transition away from support payments and towards the NFU's ambition of reaching net zero by 2040."

To learn more, visit [www.oxbury.com](http://www.oxbury.com) or email us at [findoutabout@oxbury.com](mailto:findoutabout@oxbury.com)





# Why training and development are key to ensuring success

Good teamwork, fresh ideas, skills and knowledge will help underpin the future of your business. **Johann Tasker** reports

**S**uccessful farmers are thinking creatively to ensure they have the skills and knowledge needed to help their businesses remain competitive.

Good farm management, employee recruitment and staff retention are seen as key for UK agriculture to become more productive and sustainable – while meeting ever-increasing consumer expectations.

Looking after staff and equipping them for new ways of doing things are vital for business success, says David Fursdon, chairman of Dyson Farming and The Institute of Agriculture and Horticulture.

"This will involve looking at areas such as wages and accommodation, but also at how people are trained and what they are trained in. People working on farms are already mechanics, soil scientists, accountants, agronomists and livestock husbandry specialists," he says.

## New technology

"However, new technologies that will pave the way to greater efficiency mean farm businesses will require data analysts, specialist skills in drone operation, robotics, GPS systems and aerial analysis – to name a few."

The right mix of skills will increase the uptake of

precision farming techniques that drive financial and environmental sustainability, says Mr Fursdon. But this will require more structured training and development – and recruitment from other industries.

The need for better training topped the agenda at the recent National Farm Management Conference. Hosted by the Institute of Agricultural

Management, conference delegates examined ways to broaden their expertise.

A diverse skill set, rather than a purely farming background, was often advantageous – yet many farms were only interested in recruiting agricultural graduates, suggests Scottish dairy producer Sally Williams, of R&A Wilson, Earlston.

"Until there is a real shortage [of candidates], >

## HOW SMALL CHANGES CAN IMPROVE PRODUCTIVITY

Small changes in management practices can boost productivity by 10%, according to the Confederation of British Industry.

Farmers can get advice on how to achieve this by enrolling on a programme that is aimed at improving business expertise. The government-funded Help to Grow scheme was developed by the Confederation of British Industry and other business groups.

It aims to give 30,000 small and medium-sized businesses access to world-class expertise on everything from financial management to marketing – including the tools they need to innovate and grow.

Open to farmers as well as other

businesses, the programme is being delivered by business schools across the country. The 12-week course can be taken alongside full-time work and is 90% funded by the government, so it costs only £750.

Those who have enrolled on the course include Neal Adams, managing director of food and farming consultant ProMar International.

"Your ability to learn faster than your competitors is your only true competitive advantage – you have to be able to learn faster and apply what you learn to be better than your competitors," says Mr Adams.

For details, see [helptogrow.campaign.gov.uk](http://helptogrow.campaign.gov.uk)

INSTITUTE OF AGRICULTURAL MANAGEMENT

**RANGE OF TRAINING OPPORTUNITIES HIGHLIGHTED**



Easy-to-access information for farmers who want to improve their business skills will be made available this year by the Institute of Agriculture and Horticulture (Tiah).

Tiah is an online platform that will give growers and livestock producers the chance to continue their professional development – and signpost them to any relevant training and educational opportunities, says Tiah chairman David Fursdon (pictured).

“People facing the challenge of an uncertain future because of changes to support payments will have a place they can go to learn about issues like natural capital or improving their business skills,” he explains.

Rather than being a rival to other educational institutions, Mr Fursdon says Tiah will be a one-stop shop where people can go to find the most suitable place for tailored advice, business support and training.

“At the moment, people are offered a wide range of training opportunities and it’s quite unco-ordinated. What we want to do is bring it all into one central place so everyone can say: ‘I need to find out about this – I will look at Tiah.’

“It is a charity rather than for personal profit. But it does require people to see the bigger picture and recognise the importance of helping our industry deal with the challenges it faces – and I hope people will see it in that way.”

Tiah is also about enabling farmers to show that they farm well, says Mr Fursdon. This could have business benefits – including, for example, making it easier for farmers to win contracts with food retailers and other customers.

For details, visit [tiah.org](http://tiah.org)



TIM SCRIVENER

change is going to be difficult and we will continue complaining that agricultural graduates don’t quite fit what is needed – yet often we don’t look outside our own little bubble,” she says.

**Stronger teams**

“In my business, I have had to – I have people from non-agricultural backgrounds and people from a wide variety of countries. It has allowed me to build a strong team that works well together, and I dread the day that one of them moves on.”

Skills can be taught, says Ms Williams. It is more important to recruit the right kind of people with the right ethos. Even if they lack the necessary skills when they start, they can learn – either through formal education or on the job. “Our mindset has to change,” she says.

Lincolnshire farmer Simon King recruited two teenage apprentices eight years ago. Both are now valuable team members. One runs the farm’s beef suckler herd. The other is responsible for all spraying, combining and harvest management.

“One of the biggest challenges was pushing them on at a rate they could take – even though their age, to some people, seemed to be a barrier. If they were capable of doing the job, they needed to be doing it – not have someone standing in their way,” Mr King says.

The provision of quality training – taking apprentices from GCSE to foundation degree level on day release at the farm’s own cost – was

also a challenge, says Mr King. But employing young people had brought new ideas into the business.

**Culture change**

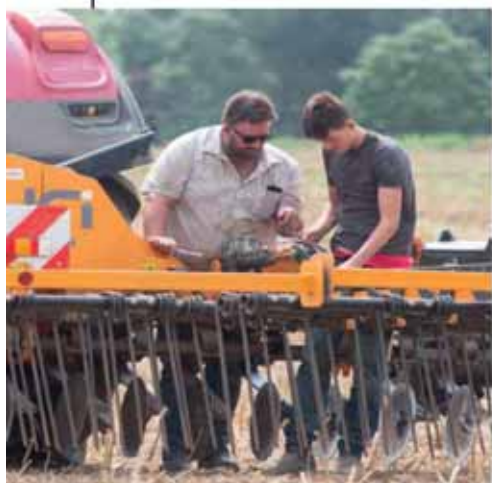
“We are very lucky that four of our seven employees are younger than 30, so it is possible. You have to recognise that when people are good enough, they have to be pushed on. In agriculture, that is a bit of a culture change.”

Different people have different aims in life, adds Mr King. “We find driving the biggest tractor and earning the most money isn’t actually what younger employees aim for. Pay is only a small part of what it takes to successfully attract and retain people.”

That view is echoed by Alison Robinson, principal and chief executive of Myerscough College, which operates two commercial farms. The culture of farm staff working long hours should be combated – happy employees are more productive, she says.

“We have reviewed our staff contracts, we’ve reviewed our pay and conditions and we have put in place career structures. We do regular appraisals, talk with staff about their training and development needs – and where they want to go.

“We all have a responsibility to think about how we best support people. That makes us more productive – which improves our profitability – and allows us to pay better salaries and provide better conditions for our staff as well.” ■



TIM SCRIVENER

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Polysulphate® is a natural product which helps farmers increase productivity, but in a more sustainable way.

**FARM FACTS**

*JM Stratton & Co,  
East Farm, Codford*

- Farm size: 1,800ha
- Combinable crops, grain maize, peas, renewable energy
- Diversification: events operation; 90,000 sq ft let commercial property, 20 cottages and houses
- 900mm annual rainfall
- Soil: light to medium chalk, clay cap patches



# ‘Data is vital, but a computer will never run the farm’

‘Transition’ is a familiar concept to one family business in Wiltshire, which has a portfolio of interlinked activities. **Tim Relf** finds out more

**F**rom Argentinian-style cattle ranching, to dairying, to new arable enterprises, one Wiltshire family business has undergone significant change in the past century.

Today, the focus is on renewable energy and commercial property, alongside the arable land. “We’re focusing on how we can embrace the change that’s coming and make the most of it,” says Ed Shuldham, business development manager for JM Stratton & Co.

Headed by Josh Stratton, the business, based at East Farm, Codford, includes 1,800ha of its own land, a contract farming operation, a 3.7MW food-waste anaerobic digestion (AD) plant, field-scale solar PV, and a property portfolio spanning offices, commercial units and residential premises.

“We are a relatively large business, but it’s about what you do with your assets that counts,” says Mr Shuldham. “Small, medium and large can all be successful if they’re managed in the right way.”

## Pilot scheme

One of the most recent initiatives has been putting 364ha in Defra’s Sustainable Farming Incentive (SFI) pilot. “Most farmers will be involved with the SFI to some extent once it’s fully up and running, so we were keen to establish how we can make it work for us and, hopefully, help shape it for the benefit of all,” he says.

The SFI fits well with the direction of travel of JM Stratton & Co which, for a decade or more, has been striving for sustainability in tandem with productive farming – concentrating on soil health

and implementing measures such as min-till, direct-drilling and cover cropping, alongside straw chopping and digestate spreading.

Linked to this is a drive to get ever-smarter with data. “We’ve made some of the big and perhaps more obvious changes – for example, chopping straw to benefit soil structure and worms – but we need to have more insight now to help us make decisions that move us to the next level.”

## Skills and knowledge

The quest for better data use, however, will go hand-in-hand with human insight. “People will still be at the heart of this business – a computer will never run the farm. Farmers make decisions based on their instincts, but better information enables those instincts to be better educated.”

This, Mr Shuldham says, is partly dependent on the team staying hands-on. “Tom Hallett, our arable manager, spends lots of time walking the fields, inspecting the crops and the soil. He keeps a worm bible and a weed bible. We want to be able to use technology to build on our existing data collection so we can fine-tune fieldwork.”

Another income stream could come from the natural capital market – with both the public and private sector likely to pay, for example, for biodiversity net gain or nutrient offsetting and reduction schemes. Josh Stratton has recently become a director of a new farmer-owned company – the Environmental Farmers Group – which plans to provide natural capital trading in the Hampshire Avon catchment, based on a farmer grain co-op

model. “We have a track record of co-operating to deliver landscape-scale environmental projects and Josh was a co-founder of our farmer cluster, the Wylve Valley Farmers,” says Mr Shuldham.

## Circular economy

The many strands to this business are linked by common themes. “The principle of the circular economy is important, with food waste going into the AD plant, the digestate providing fertiliser for the arable land which, in turn, grows food in a way that is working with the environment,” he says.

“Renewable energy is vital and the next evolution of this might be to find some ‘energy-intense’ agricultural tenants – a vertical farming or insect growing business, for instance – that could use our renewable energy as part of the wider farm ecosystem. Ultimately, though, the bulk of the assets that this company has is farmland – and agriculture is our core business.” ■

● Follow Ed Shuldham and our other Transition Farmers as they adapt their businesses for the new environmental schemes and the phase-out of the Basic Payment Scheme. Find out more on **p33**

## TRANSITION GOALS

- Be involved with – and help shape – the Sustainable Farming Incentive
- Make more use of data
- Take natural capital opportunities

KATHY HORNHOLLOW

# HOW FARMPLAN IS HELPING FARMERS TO BE MORE SUSTAINABLE



**D**ata is a driver for massive change in farming, and more and more within the sector are seeking solutions that allow them to take full advantage of the benefits it brings. A new partnership between Farmplan, the UK's leading agricultural software specialists, and Sustainable

Landscapes, a landscape-based programme initiated by Future Food Solutions, demonstrates just what the future of sustainable farming can look like – and how it can mean a win-win for farmers and their partners within the supply chain.

"About eight years ago, we began to specifically examine resilience in supply chains for our major clients," says Steve Cann, Director of Future Food Solutions. "Working closely with farmers demonstrated that their data is incredibly important, and that Gatekeeper, which many of them used, offered a value adding platform, as the more data farmers had, the better it would be for them in terms of managing their business."

The goal of Sustainable Landscapes is to improve soil quality and water management for more resilient and profitable farming. In Gatekeeper, Steve found widely used software that recorded all the essential data for effective sustainability planning and execution. "We sat down with Farmplan and discussed how we could work together," he says. "As a result, with the farmers agreement, we can now pull vital information directly out of Gatekeeper to perform a full carbon audit very quickly."

This partnership helps farmers to improve soil health and farm in a more sustainable way, including the use of cover crops to cultivate biomass and increase soil organic matter (SOM) in their fields – a major sink and source of soil carbon. As Steve explains, a 1% increase in SOM per hectare allows that area of land to absorb an additional 240 tons of water.

"In one example, we saw a farmer increase their SOM from 2% to 6%," says Steve. "They have close to 1,000 tonnes of water available in that hectare of land that would not have been there a few years ago. All of this is verified and driven by independent soil testing and assessment. We're not marking our own homework. It's a real win-win, creating a virtuous circle where farmers, water companies, and brands all benefit."

For UK growers, this means being able to farm more sustainably and demonstrate compliance to their supply chain partners – all by simply using the data which they already capture as part of their existing practice. This extends to nutrient capture, offering a further financial benefit. For example, one farm tested their cover crops and discovered 305 kgs of N pulled in per hectare – a hugely valuable gain, especially with the current pricing.

"Fundamentally, this is data that's already being recorded for compliance," says Scott Millar, Regional Account Manager at Farmplan. "This partnership just means farmers see an extra benefit from their work, from better utilisation of nutrients to more effective farm management. It's an exciting prospect for UK farmers who are eager to derive more value from their business in a sustainable way."



Neil Fuller, soil expert and Andrew Walker, Yorkshire Water meeting with Yorkshire Wolds Innovation group farmers

[farmplansales@proagrica.com](mailto:farmplansales@proagrica.com)

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Farmplan is the leading industry software specialist in the agricultural sector. With a proud heritage of over 50 years, its unique blend of people, knowledge and technology have supported the needs of every farm, no matter the size or complexity. Farmplan is part of IAgRM and works closely with the AICC, accountants, advisors and agronomists across the industry, championing farmers while helping to shape the future success of agribusinesses.

Farmplan is owned by LexisNexis® Risk Solutions Group, and is part of Proagrica, the global brand representing its agricultural portfolio. Proagrica provides critical decision-support to the global agriculture industry by delivering high-value insight and data, trusted workflow tools, proven integration technology and effective channels-to-market.

# Pros and cons of four key farm sustainability measures

We asked three experts how to improve the environmental performance of a typical farm

**S**imple management changes can help make arable farming more sustainable – and often more profitable too, say analysts.

The environmental and financial performance of a typical 600ha arable unit (see "Farm facts") was scrutinised by experts from Andersons Farm Business Consultants and farm software specialist Trinity AgTech.

Called Loam Farm, the hypothetical farm is located notionally somewhere in East Anglia. As the name suggests, it has good loam soils and grows combinable crops. It has a working proprietor, one full-time employee, and brings in casual staff at harvest.

Most day-to-day operations at Loam Farm are carried out in-house with minimal use of

contractors. The farm is considered above average in terms of business performance, but would not be in the top quartile.

"Loam Farm is a typical farm of its size," says Richard King, partner with Andersons. "The owners don't have any goals as such – beyond perhaps being able to hand the business on to the next generation.

"Like many farmers, they don't embrace or adhere to any particular farming system. Some people might describe them as doing what they have always done – and in that respect they are like a lot of farms."

Analysts from Andersons and Trinity AgTech used Trinity's Sandy software to assess Loam Farm's sustainability – identifying four key areas for improvement, pinpointing potential ways

to reach net zero and highlighting untapped opportunities.

## 1 Net carbon balance

- 2019 1,522t – 2.5t/ha
- 2020 1,197t – 2t/ha
- 2021 1,418t – 2.4t/ha

This metric measures the net carbon balance at a farm, field and product level. It is what we would expect with this sort of arable rotation, with average to low performance for crops of this type. Yields are good for the soil type – and consistent, with average levels of fertiliser application. Spring beans are emitting less carbon than wheat and oilseed rape – because less nitrogen fertiliser is being applied.

TIM SCHREINER

## MEET THE EXPERTS



Alasdair Sykes  
Trinity AgTech



Milad Toolabi  
Trinity AgTech



Richard King  
Andersons

## FARM FACTS

### Loam Farm

- Farm size: 600ha
- Cropping: feed winter wheat (200ha), milling wheat (100ha), spring malting barley (100ha), winter oats (100ha), spring beans (100ha)
- Soil: loam
- Location: East Anglia
- Tenancies: some 360ha of total is farmed on a farm business tenancy





Using more organic manure, rather than bagged fertiliser, on the wheat and oilseed rape crops would improve their carbon credentials

### < Recommendations

Alasdair Sykes, Trinity AgTech

The farm has potential for more soil carbon sequestration. At the moment, most fields are sequestering about 50kg CO<sub>2</sub>e/ha, which could be improved. It is locking away some carbon, but the soil could do a lot more.

To achieve this, there are a number of options. I would recommend reduced and no-tillage. There is some reduced tillage already and expanding this across all crops would be a good thing. No-till will give substantially more sequestration, but may be less practical.

The farm could also incorporate crop residues

some seasons, rather than taking off straw year after year. It could also grow more cover crops and catch crops – and replace some of the fertiliser with organic manure, if doing so is possible.

A significant reduction in bagged fertiliser usage would be extremely beneficial – especially if yields can be maintained, or at least not reduced too drastically. As an industry, we need to move beyond treating organic manure as a waste product. It should be seen as a valuable co-product. Incorporating slurry and manure is soon going to be of significant value in terms of carbon credits.

### Response

Richard King, Andersons

None of the recommendations are particularly scary. The farm has already reduced some tillage – there is much less ploughing now than 10-15 years ago. But it is a gradual process rather than a matter of giving up the plough overnight.

Replacing bought-in fertiliser with manure is attractive but often harder than it sounds. It adds some complexity because of the variable nature of the product – manure isn't always easy to come by in areas such as East Anglia.

The farm could retain more crop residue – but remember that selling straw is often a valuable source of farm income. Whether the farm would be willing to relinquish that revenue would

require some long and hard thinking.

## 2 Biodiversity

Biodiversity is a concept rather than a physical measure. We score out of five, assessing the impact of farm practices across five key biodiversity types: farmland wildlife (1.5), conservation species (1.2), pollinators (1.2), natural enemies (3.2) and soil biodiversity (3).

The scores on Loam Farm are typical for a conventionally managed arable unit of this type with only a relatively small area of woodland. At present, reduced tillage is about the only farming practice that is benefiting biodiversity to any extent.

### Recommendations

Alasdair Sykes, Trinity AgTech

Reducing the amount of herbicides and pesticides would boost biodiversity. This will increase the number of pollinators dramatically – depending on how widely any reduction in inputs is rolled out – and could even increase the pollinator score to 5. Both these recommendations will also help to reduce emissions.

Catch cropping, cover cropping and intercropping will increase biodiversity as well as having a positive effect on soil carbon. Skylark and lapwing plots will boost the biodiversity score too, although without reducing emissions.

### WHAT IS SANDY?

Developed by software specialist Trinity AgTech, Sandy is a digital assistant that helps farmers measure the sustainability of their farm business.

It does this by calculating, evaluating and measuring carbon sequestration, biodiversity and water stewardship metrics. Farmers can then plan the actions they should take to improve their environmental performance.

For more details, visit [trinityagtech.com](http://trinityagtech.com)

ADOBE STOCK



important we are adequately compensated for doing so.

### 3 Nitrate leaching

This measures the amount of excess nitrate that leaches from the subsoil and enters underground fresh water. At a farm level, Loam Farm is leaching 100kg/ha of nitrate.

We would consider this a little high, although there are no national figures to compare this figure against because it is a complex metric. For any farm, it will be influenced by location, soil type and the weather.

In terms of crop performance, spring beans are doing well at 80kg/ha, although winter wheat is less good at 129kg/ha.

### Recommendations

Milad Toolabi, Trinity AgTech

Lots of mitigation options are available. But the most important way of mitigating leaching is optimising the timing and quantity of applications because crops require different amounts of nitrogen at different stages.

Farmers who use multiple applications rather than applying fertiliser in two or three bigger amounts will experience less leaching. Organic fertiliser ensures the crop takes smaller amounts of nitrogen over a longer period, which consequently can help in reducing nitrate leaching. Only some of its nitrogen is immediately available to the crop, with the rest released over time.

It is well known that cover crops help reduce leaching. They are of increasing interest – including among water companies that are working with farmers to reduce pollution in watercourses. So too is reduced tillage because less soil is disturbed.

Reducing leaching has a financial benefit – the more you reduce leaching, the more money can be saved.

### Response

Richard King, Andersons

It is a simple cost versus benefit analysis. High prices mean everyone is looking more sharply at their fertiliser practices. Nobody wants to see fertiliser going down the ditch when it costs £600/t or more.

Timing applications properly to benefit the crop is important. But you have to fit that around the weather and the amount of land that you need to cover – so you are never going to hit the perfect spot every time on every single field.

That said, many farmers – and Loam Farm is probably one of them – look too closely at the calendar and not enough at the growth stage of the plant. I think that is an area where we should all pay more attention.

### 4 Nitrogen uptake efficiency

This metric measures the ratio of the nitrogen taken up by the crop to the total nitrogen available in the soil. Higher values mean a better job has been done in terms of optimising fertiliser applications. The range here is 21% to 72%.

### Recommendations

Milad Toolabi, Trinity AgTech

Many of the recommendations to reduce nitrate leaching will also improve nitrogen uptake efficiency. The two metrics run in tandem. A good example is using multiple applications at the right time, rather than applying larger amounts less frequently.

Incorporating fertiliser in the topsoil is also beneficial. Studies show that putting fertiliser where the crop needs it increases nitrogen uptake efficiency as well as reducing leaching – which again saves money.

### Response

Richard King, Andersons

Using organic fertiliser rather than purchased ammonium nitrate is a good recommendation – provided that you can get hold of a good, consistent product. Availability and cost are key issues.

All these ideas are good. None of them are terrifying – it is more a case of them being good reminders of what we should be doing. Marginal gains add up, and that is what we are trying to achieve. ■

## CONCLUSIONS

It is always helpful to put numbers on things – and this has been a useful exercise," says Richard King of Andersons. "The owners of Loam Farm are like all of us – they want to do their bit for the environment and reduce their carbon footprint.

"This will help them do that – and prioritise actions. Like a lot of challenges, it can be difficult to know where to start. You can't do everything at once, so it is important to know where you can get the biggest bang for your buck."

Many farms are too confused to know which direction to go – and Loam Farm is no exception, says Mr King. There are many carbon calculators out there and so many different sources of advice that it is difficult to decide which is best.

Sandy measures more than just carbon, water and biodiversity, and the financial consequences of actions taken to mitigate emissions, says Alasdair Sykes of Trinity AgTech. Increasing nitrogen use efficiency, using organic manure and introducing cover crops can make a big difference too.

"Those measures will take Loam Farm from being close to average to being a farm to be proud of – a beacon of excellence in terms of carbon sequestration and biodiversity – and good nitrogen practice, too."

## TRANSITION SPRING 2022

In the next issue of *Transition*, we take a more detailed look at how a real-life farm can become more sustainable by reducing its carbon footprint.

Loam Farm's fields are sequestering about 50kg/ha, which could be improved

### Response

Richard King, Andersons

We would like to be convinced of any financial benefits. Changing pesticide use is one thing – but we have an agronomy system that works for Loam Farm and we would be resistant to making wholesale changes.

Cover crops are a good idea, but again they are not without cost. They will be more attractive if they are eligible for payments under Defra's forthcoming Sustainable Farming Incentive scheme.

It is the same for skylark plots, field margins and field corners. Like many farmers, we are open to introducing all these kind of things, but it is



# Advice for navigating your farm's road to net zero

Farmers Weekly's second Transition Summit webinar saw industry experts take a look at how agriculture can be part of the climate change solution. Here are some key questions addressed by the panel

**W**ith significant consumer pressure on retailers to demonstrate the environmental credentials of the food and drink on their shelves, supermarkets are requiring more from their farmers – including cutting emissions. So farmers should start assessing the carbon footprint of their enterprise sooner rather than later.

But questions abound. Where do you begin, and which are the best tools to use? What opportunities are there for financial gain, and who will be best placed to take advantage of them? A panel at Farmers Weekly's recent Road to net zero webinar addressed these and other questions from the audience.

Here is a selection of their answers, which you can hear in full at [fwi.co.uk/transition-summit-net-zero](http://fwi.co.uk/transition-summit-net-zero)

**Q** Should farmers be prioritising offsetting carbon for other industries or offsetting for agriculture?

Agriculture should look to provide offsets for itself before exploring opportunities in other

sectors that are also looking to offset, according to the AHDB's head of environment, Jonathan Foot. "At the moment, the market lacks maturity in the UK and there are only a few schemes that enable assured measurements of offsets – the Peatlands Code and the Woodland Code – and the prices being offered are far too low," he said.

"Wait and see how the market develops, and maybe use them for yourself, because they may have far more value to you in terms of how you can talk to the supply chain above you," he advised.

**Q** When would be a good time to make commitments in the carbon market – should we wait until the UK Farm Soil Carbon Code has been signed off by government?

Markets are emerging, and if it's possible for you to enter them but not necessarily trade in them, it's worth considering now, said Oxbury Bank chief customer officer Tim Coates, whose Cotswolds farm has been through a woodland project. "I'm now the proud possessor of

pending issuance units against the Woodland Carbon Code," he said. "I have not sold them – I don't intend to do so – but I don't necessarily intend never to do so.

"This is going to become a data game as much as anything else, and that's going to lead not just into carbon but any other form of ecosystem service – biodiversity net gain, water quality, food provenance – so data is actually the big project for me this year, and then how I will enter these markets."

**Q** Who owns the carbon in tenanted land – the landlord or the tenant?

"It will depend on what your tenancy says – and if it doesn't say anything about it, it will depend on the negotiation between landlord and tenant," said Hutchinson services leader Matt Ward.

Most current tenancies will predate the whole carbon concept, so assess the options on your farm, then have that conversation with your landlord, advised Mr Foot. "Understand who could potentially take those benefits or

even maybe get to a point where there's the ability to co-share those benefits in a fair and equitable way."

**Q Is there a commercial benefit to be had from anaerobic digestion (AD) from animal waste, as much as an environmental one?**

"If you have livestock, it is going to be very difficult to achieve net zero without adding as much value as you can to your waste. If you're producing slurry, it's a bit of a no-brainer to run it through an AD system, get methane from it and then apply the digestate back to your land to offset fertiliser requirements," said Harper Adams soil ecologist Simon Jeffery.



"So, if you are making very leafy forage that is highly digestible, you're not going to get the sort of fermentation that leads to methane production. The more fibrous, the more hydrogen you produce in the system, and the ruminants just convert it to methane. So less fibre equals lower methane – irrespective of the forage type."

**Q Which sector – or part of the country – stands to gain the most from carbon credits or biodiversity net gain?**

The starting point will be an interesting part of the debate as the market matures, said Lincolnshire farmer and Terraviva chairman William Cracroft-Eley.

"Arguably, the one with the gain will be the one that starts from the lowest base level and, therefore, has the highest opportunities – which may well be the intensive cereal farmer."

Morrisons' head of agriculture, fisheries and sustainable sourcing, Sophie Throup, added that everyone has the potential to be a winner on some level: "Without doubt, every single farm has the opportunity to lower emissions

and then think about increasing sequestration and creating that net-carbon balance."

It's not just about payment for gain, said Mr Coates: "I think there will be payments, both public and private, that will be made for maintenance. There are existing schemes – the Farming in Protected Landscapes is in that sort of space." ■

**Q Which grasses, herbs or legumes produce less methane in ruminants? Or is there a more natural way to do the job, such as using seaweed?**

Look at the chemistry of forages, advised KW Alternative Feed's Michael Marsden. "It's about the digestibility of the fibre fraction," he said.

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# Think different, farm better

**F**arming focuses have changed in the last few years, led by reforms to support payments and environmental pressures.

This has resulted in growers adopting a more holistic approach to farming practices.

David Newton, Timac Agro UK technical manager, says although daunting, a change in focus poses a big opportunity.

"Ultimately, to get more from the land we need to look below the crop to ensure we're providing a solid infrastructure, to boost both yield and performance.

"To maximise results it's vital to identify what's right for your soil and adapt to the challenges you face."



Therefore, it is important to start by assessing the current situation, by analysing soil sample results and creating a realistic action plan.

## How to assess you situation

### Step 1: Grab a spade

The first step to creating an action plan is to grab a spade and dig a hole. Take time to look at the soil by looking at key indicator signs, such as, is there a high worm population?

Is the soil consolidated or aerated? What does the structure look like? At the same time take a soil sample and get it analysed at the lab for pH and wider nutrient profiling.

### Step 2: Sample testing

The results of the soil test will give a good indication of what we're working with nutritionally in that specific field. We can then develop a bespoke nutrition plan to support the soil. The main goal here is to improve the soil's resilience for the future and adapt to the changes that are occurring.

### Step 3: Creating a soil health plan

Following the soil sample results, the Timac team will make recommendations based on a whole farm approach. This can include implementing a new input regime, incorporating a soil conditioner to optimise the soil health of the field. It may also include practical management advice, such as integrating a rotational grazing structure

in grass fields. We would also look to adopt new technologies, such as biostimulants, to improve the ability of the crop to deal with stresses.

## How to work with Timac

The Timac team aspire to work with farmers on a long-term basis, to allow them to make continuous positive improvements to businesses. If you are interested in gaining full circle insight into your soil and plant health and maximising productivity, get in touch with Timac Agro by visiting [uk.timacagro.com](http://uk.timacagro.com).

David Newton FACTS FE/5321  
Timac Agro technical manager  
07534 151887  
[david.newton@uk.timacagro.com](mailto:david.newton@uk.timacagro.com)  
<https://uk.timacagro.com/>

Timac Agro has been supporting farmers to protect and improve soil health for over 60 years. Initially specialising in soil conditioners, Timac's product and service range has evolved to include innovative fertilisers, biostimulants, and animal health products. Supported by a proven product portfolio, there is a nationwide team of experts to give advice to farmers to help enterprises transition to more sustainable farm practices.

# Income squeeze: Past policies and what the future holds

Forward-thinking farmers will be best placed to adapt to a radical change in agricultural policy and shrinking support payments. By **Johann Tasker** and **Paul Brassley**

**B**ritish farmers face the biggest changes seen by UK agriculture since the end of the Second World War. But this time around, growers and livestock producers have less time to secure a future for their farms.

With the economy ravaged by six years of global conflict, leading to food rationing that continued until the mid-1950s, the post-war UK government was determined that Britain would never again face the prospect of being starved into submission.

Rather than relying on imports, the 1947 Agriculture Act called on British farmers to produce "such part of the nation's food... as in the national interest it is desirable to produce in the UK".

The goal was to ramp up domestic food production using the latest science and technology. Guaranteed prices – underwritten by the taxpayer – ensured that the more farmers produced, the more subsidy they received.

Yet many farmers in the 1940s and 1950s remained wary – understandably, perhaps, given that a similar scheme in 1921 was abandoned when global food prices fell after the First World War.

It took time, several publicity campaigns, and

grants like the 1957 Farm Improvement Scheme to convince farmers that the government wouldn't again suddenly reverse its policies and pull the rug from under their feet.

## Investment in productivity

By the 1960s, farmers were convinced that the government wanted them to produce more – much, much more. They invested heavily in their businesses, hugely increasing productivity over the next 40 years.

Within a generation, British farming was transformed. At the outbreak of war in 1939, agriculture was largely powered by the muscles of men, women and horses – using mostly 19th-century technology to produce less than half of the country's food. By 1985, less land and far fewer people were involved. The power sources and technologies had been transformed. Rather than muscle, mechanisation was the order of the day.

Agricultural output soared, a trend which continued after the UK joined the EU. The value of output almost trebled from just over £4bn before the war to nearly £12bn in 1981-85.

Today, government policy is going in the

opposite direction – but just as radically. Instead of increasing farm support, payments are being reduced – in England at least, although the other UK nations are likely to follow.

Rather than subsidising food production and paying farmers for the area farmed, the government wants to support farmers who undertake environmental work and mitigate climate change.

## Unanswered questions

The plan is outlined in the 2020 Agriculture Act. But the government's vision is less clear than it was in 1947. How, for example, will farmers be rewarded for storing carbon in their soils? How will results and payments be determined?

These questions and others remain unanswered. The Basic Payment Scheme (BPS) – which accounts for some two-thirds of farm incomes – will be phased out in England by 2028. But the policy which will replace it is not fully formed.

One thing is clear. In less than six years, farmers will no longer be able to rely on the government for such a large proportion of their income. And they will have to work harder in return for any public money they do receive.

Rather than the safety net of subsidies – or BPS payments based on the area farmed – growers and livestock producers will be expected to secure a much bigger share of their income from the marketplace.

The remainder will come from payments for public goods – the provision of cleaner air, better soil and fresher water – alongside carbon sequestration, wildlife habitats and other environmental improvements.

The 1947 Agriculture Act required farmers to embrace new methods to achieve a huge increase in productivity. The 2020 Agriculture Act will require a similar change of mindset – but in a different direction entirely. ■

ROBERT HARDING/ALAMY STOCK PHOTO

## ABOUT PAUL BRASSLEY

Paul Brassley is an honorary fellow at the Centre for Rural Policy Research, Exeter University. He is also co-author of *The Real Agricultural Revolution: The Transformation of English Farming 1939-1985*.

Published by Boydell & Brewer, the book is a detailed and authoritative history of the seismic changes experienced by UK farmers during the second half of the 20th century. It examines the development of new technology and how farmers used it to ramp up their output and produce more food than ever before.

Farmers Weekly readers can save 35% – paying £39 rather than the £60 cover price – by ordering online at [boydbrew.co/3nHMDXA](http://boydbrew.co/3nHMDXA) and entering the offer code BB135.

