

# RURAL VIEW

SPRING/SUMMER 2019

From **Carter Jonas**

## OPPORTUNITY KNOCKS

*Are you ready  
for it?*

## RISING STARS

*A bright  
future beckons*

## FINDING FUNDING

*Kick-start your  
diversification*

## GAME FAIR DISCOUNT

*Up to 20%  
off tickets*

# THE ROBOTS ARE COMING

*The UK tech experts at the forefront  
of innovation agriculture*



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*Look, no hands*  
Tech experts from Harper Adams University have achieved a world first

# HandsFree Hectare



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# WELCOME

## Welcome to the Spring/Summer 2019 issue of Rural View

It's easy to forget what life was like before technology – it's become so engrained in everything we do.

You might be reading this on a computer or phone. If not, I expect you have a device in your pocket.

There are few industries in the UK which have been impacted by technology more than agriculture and land management.

Whether it's the giant, yet precise, machinery reducing the labour requirements of an arable business, or the subtle programming allowing the fine tuning of the environment in a livestock shed, the influence of the advances we've seen in our careers is impossible to ignore.

But what you'll find from reading this edition of Rural View is that, despite how far farming has come in the past 20 years, those working at the forefront of innovation feel that we are still just scratching the surface of what's possible.

Take the Hands Free Hectare for example (page 10). The clever minds at Harper Adams University have managed to sow, grow and harvest two crops without a single person entering the field. It's a remarkable achievement, and an example of what happens when you challenge convention.

The Small Robot Company is another major feat (page 18). Robots are everywhere at the processing and packing stages of food production, but

you'll see from our interview that it probably won't be very long before we see them in fields too.

What about the careers of those who have to adapt with this rapid pace of change? We asked the next generation – students, farmers and young people working in and around agriculture (page 14).

Our director of agribusiness, Jon Birchall, has given us his insight into how Carter Jonas can help landowners to make the most of technology in order to make their businesses more resilient (page 6).

If you want to talk face-to-face about any of the ideas and themes raised in this issue, The Game Fair is an excellent opportunity to do so. There's a preview on page 28.

You'll notice I've left Brexit and politics until last.

Like every business, we don't know what is going to happen, but our investment partner Stephen Hall and head of farm agency Andrew Fallows, have highlighted where they think our clients need to focus their attention if they're to make the most of the opportunities which are bound to arrive (page 30).

As ever, your local Carter Jonas office would be pleased to hear from you, as would I. Please contact me on [tim.jones@carterjonas.co.uk](mailto:tim.jones@carterjonas.co.uk).

### COMPLETE OUR SURVEY FOR YOUR CHANCE TO WIN A HAMPER OF RAMSBURY PRODUCE

We'd love to know what you think of this issue of Rural View, complete our survey at [carterjonas.co.uk/rural-view](http://carterjonas.co.uk/rural-view). Carter Jonas has worked for many years with Ramsbury Estate, and all survey respondents will be entered into a prize draw to win a hamper of their delicious produce. Full terms and conditions on the website.

# NEWS & ANALYSIS

## Rural crime rates rise again

Rural crime continues to rise across England and Wales, according to insurer NFU Mutual.

Although the statistics for 2018 are yet to be finalised, it is obvious that the crime rate has increased for the second year running, said the company's rural affairs specialist, Tim Price.

Mr Price revealed that the increase rate for 2018 would be in double digits – the highest since 2013 – when figures are published this summer.

*“The scale of organised crime in the countryside is alarming.”*

The rise follows a 13.4% hike in 2017, which was the first increase recorded in five years, he said.

Mr Price suggested organised crime gangs, supported by a co-ordinated network of outlets for stolen property, were taking advantage of reduced police numbers.

The type of crime has also changed. Increased vehicle security has reduced machinery thefts so criminals have switched to stealing high-value equipment and fuel from large pieces of kit instead.

Gang members will identify machinery left in fields, unlocked stores and yards. Once a target is found, they call in a van equipped with a 1,000-litre tank to steal the fuel.

Mr Price said that the scale of these operations was alarming, but of equal concern was the network of people willing to take the stolen goods.

He urged rural communities to fight back by increasing security and sharing information about suspicious people and activities, including those who could be acting as buyers.

“Where possible, machinery should not be left near gateways and roadsides and be locked away in sheds,” Mr Price advised.

## Summer safety advice

Farming and rural bodies have called on visitors to the countryside to be vigilant and responsible as warmer weather increases the public footfall across farmland.

Each year more than 12 million holidaymakers in the UK list walking, hiking or rambling in the countryside among their activities.

While they contribute £7bn to the rural economy, they also bring a risk of injury to themselves and a threat to livestock.

Several walkers have been injured or killed by cattle in recent years, while dog attacks on livestock cost farm businesses £1.2m each year.

Ahead of the summer, the CLA has repeated calls urging walkers to observe the countryside code and has compiled a checklist for landowners to help keep people safe:

- Remove livestock with a history of aggression from fields where there is public access
- Where cattle fencing is not practical, provide permissive paths to protect the public
- Make sure gates and stiles are safe and easy to use
- Reinstate paths across cropped fields within 14 days of initial cultivation
- Update risk assessments where public have access to cattle fields



## Rural broadband still needs boost

Plans to extend the 4G rural broadband network must be backed-up by close monitoring of mobile phone companies to ensure construction work is completed, MPs have warned.

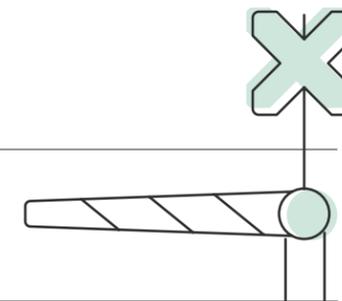
Last December, communications watchdog Ofcom announced there would be 500 new rural mobile masts and 90% UK-wide coverage by all four networks.

However, the All-Party Parliamentary Group (APPG) on Rural Business raised concerns that mobile phone companies had historically been reluctant to build masts in rural areas due to cost.

In a letter to Ofcom chief executive Sharon White, MPs noted there was no obligation on mobile operators to report on mast completions until the end of a review process in 2024.

APPG Rural Business chair Julian Sturdy MP said: “While Ofcom’s initial announcement truly has the potential to revolutionise mobile coverage across the countryside, it will fall by the wayside if progress is not monitored on a regular basis. We need annual reporting to ensure that mobile operators are holding their promises.”

The CLA added its weight to the call for monitoring. Deputy President Mark Bridgeman said: “Increasing 4G coverage will unlock the potential of rural businesses and the countryside, and we cannot let this opportunity slip owing to lax oversight. Annual reporting on progress should be compulsory.”



## Rail crossing risk

Health and safety experts have warned rural businesses about the dangers of crossing railway lines in vehicles and trailers laden with livestock, crops and fertilisers.

Network Rail’s 20,000 miles of track is traversed by almost 4,000 public and private vehicle crossings.

Statistics released by the organisation show farm vehicles are involved in more than 50 incidents at level crossings each year.

The year-round risk is heightened in the summer as farm traffic hits a peak and there is added pressure from time-critical tasks.

Summer fieldwork and harvest also see tractors hauling equipment and trailers, making them longer and heavier, increasing the time it takes to cross the rails.

Despite the dangers, a Network Rail survey uncovered a risk-taking culture at level crossings.

More than one in 10 farmers relied on timetables to estimate whether a train was due and drove over the line without stopping, the survey responses revealed.

Network Rail said this was particularly dangerous because freight trains and unscheduled services were not timetabled and can pass through crossings at 100mph.

Network Rail’s level crossing awareness campaign S.A.F.E.R. is supported by the Farm Safety

Foundation, which is working with young farmers to teach them about the risks.

Foundation manager Stephanie Berkeley said that many young people she encountered had never considered the dangers of level crossings.

“Teaching them how to work alongside it and respect it is absolutely vital to keep them, their colleagues and their livestock safe,” Ms Berkeley said.

### S.A.F.E.R. LEVEL CROSSING

#### / SPEAK

Phone the signaller before and after crossing

#### / ACCESS

Open both gates before crossing and close them afterwards

#### / FOLLOW

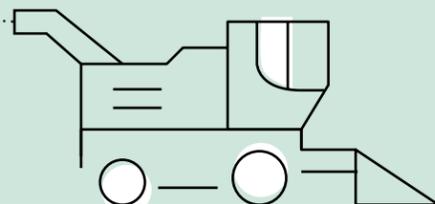
Follow signs and signals at every crossing

#### / EVERYONE

Check everyone knows these instructions

#### / RESPONSIBILITY

It’s a legal responsibility to ensure workers and family comply



A NEW  
DIRECTION  
OF TRAVEL

*Jon Birchall wants to embed new ideas and new technology into his role as Carter Jonas' director of agribusiness.*

*Carter Jonas' director of agribusiness Jon Birchall in the potato ridges of the Sundorne Caste Estate*

In 2010, Jon Birchall was named BBC Farmer of the Year in recognition of his management of the 800ha Kings Walden Estate in Hertfordshire.

The award reflected his passion for conservation agriculture and the success he enjoyed in moving from an intensive arable system into one built on extensive grazing.

Jon's approach was to analyse every part of the farm to evaluate its potential; where crops would thrive and be profitable, he would plant them, but poor land was not allowed to swallow huge investment.

Instead it was turned over to grass, beetle banks, skylark plots and nectar mixes.

Nine years later, Jon is the new director of agribusiness for Carter Jonas and says his principal vision for estate management has not changed.

"Back then, we knew landowners were going to have to provide more justification for subsidy payments and that's exactly what has happened," Jon said. "Now businesses are going to have to be really focused about how they get the most out of their land, and for some that will mean a new way of thinking.

"I see my role as helping clients achieve the best possible financial results, but also improving the landscape."

#### CLOSE TO HOME

Jon is based at the firm's Shrewsbury office – across the border from his home county of Staffordshire – but he prefers to be out seeing clients.

Up and down the England-Wales boundary is where he has operated for the past five years.

Before joining Carter Jonas last year, Jon spent four years at Balfours, mainly advising on contract farming agreements (CFAs).

"At interview, I was told they were looking for someone with a bit of practical experience and a few grey hairs – which I thought was a brilliant

job description – and I managed to scrape in on those criteria!" he said.

"Working on CFAs, I realised what an efficient way of working it was to have contractors coming in on a fixed fee. You can turn your costs on and off and the contractors appreciated working with someone who had a practical and technical background.

"We were able to start putting record-keeping in place and working out new techniques to generate the best returns."

He is a big believer in the application of technology to advance the usefulness of data and records for improving farming operations, and this will be a key part of his new role.

"Of course Carter Jonas has a long history in farm agency, handling BPS claims and stewardship agreements for example," Jon continued. "We are in a new place now, and I want to bring the best of technology to our farms so we can help, through improved farming practices, to replace some of the lost income when BPS disappears.

"There are a huge number of things we can start to look at."

#### MAPPING OUT A FUTURE

It was 2001 when Jon bought his first yield-mapping combine.

"I was the first to shout about how great it was," he says, "but I couldn't tell anyone why it was so great.

"Since then I have generated lots of pretty maps but not done anything with the data."

Using the resources available through Carter Jonas' GIS department, the team has been able to marry together historic yield maps and production costs in a single platform to create a net margin per hectare map.

On the map, a traffic light system highlights zones which are underperforming (in red), overperforming (in green) or average (in orange), and is accurate to just 10m<sup>2</sup>.

Jon said: "When we first created the

map I expected to just see red lines around the edges of the fields, but we got lots of different zones.

"Some of it will be compaction, and others will be purely down to soil type or the previous crop. There is no single factor that correlates with all of it.

"It really is an amazing tool to understand what is going on in the field, where the problems are, and how we may be able to start to address them."

*"Yield per hectare is irrelevant, it's profit per hectare that counts."*

Putting a monetary value on every action is where Jon wants to get to.

"Everyone is used to seeing nice fields with a single crop in them. I'm proposing that, in the future, a field could have a 16-metre stewardship margin adjacent to the hedge, with a three-metre sacrificial strip adjacent to that for machinery to turn on, minimising the area exposed to compaction.

"Other stewardship options would be located on the regions of the field which have consistently underperformed, and can't be improved.

"Yield per hectare is irrelevant, it's profit per hectare that counts. I know that represents a change of mindset, but I truly believe that's what is required."

Jon admits getting landowners to change their mentality will be a slow burner, but will be encouraged by government policy as well as the financial case.

"If I've taken land with inherently poor profitability out of the equation, and there's more land going into environmental schemes, there is no downside," he added.



*Jon helped secure permission for a 55,000 cubic metre irrigation reservoir at the Sundorne Castle Estate*



*Maincrop potato planting in warm March weather*

#### CASE STUDY: SUNDORNE CASTLE ESTATE

Jon has been consulting on the management of the 1,500-acre Sundorne Castle Estate for five years.

It used to grow a rotation of oilseed rape, wheat and winter barley, plus a small acreage of potatoes.

But, following Jon's move into the business, the rotation changed to include forage rye – destined for an AD plant – maize for a local dairy farm, and an increase in the potato acreage which suited the root-cropping soils.

During his time working with the team on the estate, the focus has shifted to managing the land in almost microscopic detail.

The whole farm has been zoned and soil tested to allow for variable rate P&K (phosphate and potash) applications, but also to identify areas which are best put to stewardship measures.

"Using the GIS mapping software, we can see what our net margin is per field and, if we change from £385/ha for wheat to £640/ha for a wild bird seed mix, then we've lifted the profitability on that part of the field.

"We will be making changes this season on the Sundorne Castle Estate and on just one of the fields we think we can lift profitability by £86/ha just by better understanding what's going on in the field."

Sundorne is the first estate to use this new mapping development Jon is pioneering, but he says he is looking for more estates to share data so he can build an accurate picture of how much variation there is from field to field and farm to farm.

"I actually think there's as much natural variation in the field as there is between the worst farmer and best farmer, and this will help to show that."

If you're interested in working with Jon on data sharing in order to advance the mapping technology, get in touch on **01743 213284** or [jon.birchall@carterjonas.co.uk](mailto:jon.birchall@carterjonas.co.uk).

# Look, NO HANDS!

*If you think in-field automation in farming is 30 years away, think again. It's already possible, and a leading UK agricultural university has proved it.*

**H**ow long do you think it will be before an automated, mechanic workforce is farming your fields, rather than humans?

For many landowners, the answer is probably 'not in my career' or 'never'.

Try telling that to Harper Adams University's Kit Franklin and Jonathan Gill who have proven not once, but twice, that it is possible to drill, grow and harvest a hectare of arable crops without a single person entering the field.

The Hands Free Hectare is a remarkable achievement – a world first, in fact – and it's not stopping there.

The pair harbour ambitions for a hands-free farm – an integrated environment where people and robots work in tandem to create an operation that's as efficient as it is productive.

Like a lot of good ideas, their achievement was driven by frustration. They wanted to prove that a remote workforce was within touching distance and not a pipe dream.

"When people talk about automation and robots in agriculture, a lot talk and think in terms of it being in 2050," says Jonathan, a mechatronics researcher at the Shropshire university.

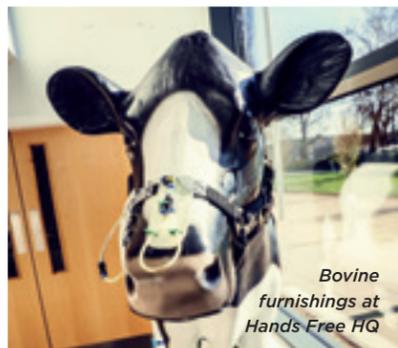
"We got frustrated about that and wanted to show that there was nothing stopping us doing it today. The only way to prove it was to go and do it." So that's what they did.

Funded by Precision Decisions and Innovate UK, plus backing in 2018 from AHDB, the team retro-fitted a small Iseki tractor and a 25-year-old Sampo combine with 'linear actuators' – a series of motors and levers allowing them to be operated remotely.

*The Hands Free Hectare team, senior agricultural engineering lecturer Kit Franklin (left) and mechatronics researcher Jonathan Gill.*



In the lab at Harper Adams University



Bovine furnishings at Hands Free HQ



The new Iseki automated tractor

A drone took the place of field-walking to assess crop health and identify where actions needed to be taken.

In 2017, they grew a 4.5-tonne crop of spring barley without a human entering the field and, after successfully proving the concept, returned to grow a 6.5-tonne crop of winter wheat in 2018, after focusing on improving machinery accuracy and coverage to boost yield.

"We wanted to use standard agricultural machines which we modified in ways that are accessible to everyone using open source to do it," Jonathan said.

Satellites communicate with machinery to tell them where to go and what actions to take when they get to certain points.

Following a breadcrumb trail of points across the field before lifting the combine header or turning the sprayer off are simple examples of how the

technology works.

"This is not pie-in-the-sky thinking," Jonathan continued. "We have a 40hp tractor planting and spraying our crop the way you would do in conventional agriculture. By using an old, neglected combine we have been able to show that this technology can be added to anything.

"There was this heart-warming moment when we had both vehicles running at the same time, harvesting and collecting, while we had drones flying over it."

In year one of the project, the crop was grown using 10 standard agricultural applications, from drilling and herbicides to T2 fungicides and harvesting.

"It was a fantastic achievement to complete the first harvest of the crop," Jonathan said. "Once we completed it, we started again and focused on the improvements."

"We improved the yield by having less compaction and straighter lines in 2018 too," he said.

"It might not be a record-breaking yield but it was a record-breaking solution. Not even your big green or red tractors have grown a hands free crop like this."

#### CHANGING AND CHALLENGING PERCEPTIONS

Perhaps the greatest achievement the Hands Free Hectare has had is contributing towards a change of mindset.

Kit, a senior lecturer in agricultural engineering, said: "When you go out to farms now and ask about driverless tractors, people say they are probably 10 years away. The view used to be that it was 30 years away.

"It's almost become old news – of course driverless tractors are coming because it's been proven. I think we can

lay claim to a big chunk of that change in perception."

What isn't clear is exactly what form the driverless fleet will take. From the outset of the project, Kit and Jonathan deliberately chose machines which would resonate with farmers to aid buy-in.

*"We didn't just do it because I love robots. I do love robots, but that's not the point."*

JONATHAN GILL

"My experience was that farmers switched off when you showed them a robot the size of a vacuum cleaner – they didn't feel it would ever replace a tractor," Kit said. "But they know we used to farm with smaller tractors, so that's what we used, to keep it relatable."

Jonathan added: "Today's farm machinery is designed to carry a driver. As soon as you take out that requirement, you can put the engine and the implements wherever it is most efficient.

"Power output does not need to be in a certain place. The electric drive could be on the wheel, for example, and the implement may be more effective in the centre.

"The tractor of the future may not look like a tractor. You can make something that's refined for the job you want it to do.

"That's why I think it could be a company like Tesla or Dyson which breaks the mould. The major agricultural machinery manufacturers have huge amounts invested in tractors looking like tractors. Other companies can design it from scratch."

Whatever it looks like, the machines are expected to be smaller than the machinery used now. "There is a debate over what the optimum power output is but for us it's probably between 40hp and 90hp," Kit said.

#### WHAT'S THE REAL MOTIVATION?

"We didn't just do it because I love robots," Jonathan said. "I do love robots, but that's not the point."

He says the motivation is the big picture of global food production – a rocketing population without the yield increases to match.

While the solutions to many agricultural challenges appear to involve scaling up, the Hands Free Hectare team come at it from the opposite direction.

"Agriculture seems to deal with large, entire fields. Maybe some of us go into sub-field sections to deal with issues on a smaller scale, but we want to manage single plants on their own, giving the crop precisely what it needs whilst weeding or spot spraying" Kit said.

"We wanted to grow in the best possible way, improving efficiencies and reducing waste. The only way to do it was with robots."

Jonathan added: "My personal belief is that current practices are driving us away from the soil at a time when we need to work closer to it."

Harper Adams University has gained notoriety for its position at the cutting edge of agricultural technology, with the established Centre for Precision Farming Technology, pioneered by the now-retired Professor Simon Blackmore.

The Hands Free Hectare is yet another string to the University's bow, but Jonathan and Kit believe this is just the start.

Jonathan said: "We want to show that this is not only achievable on a perfect hectare of land, we want to show that it can be applied anywhere."

A hands free farm? "That would be a nice way to go," he says with a smile.

They hope to be ready to grow 30-40ha of crops in the 2020 season. Working towards that goal, the next phase of the team's development is well underway, focusing on improving and refining the existing technology.

"We've got a new Iseki tractor fitted with a tiny camera to the front of it. By using some funky software it's able

to recognise people and has been able to find up to 16 in one image, which is pretty special," Kit explains.

"The idea is nothing new – Microsoft had an Xbox which could do this 15 years ago but that was loaded with technology and worked indoors, whereas this is a £15 camera with adapted software, which has a variety of practical applications.

"We are considering whether you could apply this to CCTV in the farmyard – if there is someone in the yard the machines won't drive around."

The work the pair are doing should prove that the machine can drive the 500m from the development laboratory, lift the gate to the trial hectare, carry out its work then return to home, all without a driver.

The university is also acting as a testbed for 5G mobile signals, which will allow better data transfer for rural communities.

Kit said: "As most farmers will know, connectivity is a massive issue and is one of the biggest barriers to delivering this sort of innovation on a large scale. But there are a number of advances being made with 5G and near earth satellite technologies which may circumvent a lot of the problems. We will see."

*"The narrative was that robots on farms were 30 or 40 years away. We thought it could be done in a year, and we proved it. Mission complete."*

KIT FRANKLIN

Jonathan adds that projects such as the Hands Free Hectare have to look beyond the issues and push the boundaries of what's possible.

"We're here at an agricultural university, we need to inspire. The next generation is coming through and they want to see what the future holds. We have a responsibility to show them what's possible."

*“As technology improves, I believe the uptake in my generation will be the greatest yet.”*



**AIMEE SMITH**  
Farmer's daughter  
Aimee is a 21-year-old  
agriculture student in  
her final year at Harper  
Adams University.

## MY FUTURE RELATIONSHIP WITH *technology*

*If agriculture is on the cusp of a technological revolution, it will be the responsibility of the next generation to understand its potential and maximise its impact. Rural View found five people who have bright futures in agriculture and the food supply chain and asked them what role they thought technology would have on their careers. Here's what they said.*

**M**y main passion lies in UK meat production and the impact on meat quality and safety of on-farm and processing decisions. It is important that we embrace new technology and research in order to compete with other nations on a competitive commercial scale.

My practical understanding of the benefit technology could bring was improved during a 14-month placement at major processor ABP in Langport, Somerset. I was responsible for monitoring site compliance in areas such as animal welfare, traceability and food safety. I also had the opportunity to develop touchscreen recording of carcass contamination in the abattoir to improve the efficiency of corrective action.

This year, I attended the Oxford Farming Conference, where uptake of technology was a key focus. Michael Gove discussed the opportunities provided by gene-editing to accelerate development of crop varieties which are more resistant to disease and pests, and less reliant on synthetic crop protection tools.

Technology will play a massive role in all our careers. It is clear how far we have come over the past 50 years and it's exciting to see the role of technology in agriculture in the future. It will have a dramatic impact on my career in beef processing and meat safety. However, a lot of technology is currently out of reach of the commercial market. Companies need to share developing technology to create a better overall product that is more sustainable and user-friendly.

Mandatory EID (electronic identification) in cattle would improve and quicken traceability in UK beef processing and allow for an individual animal's life history to be available to all livestock owners.

This is currently used in Scotland for cattle, and across the UK for sheep, and has been working very successfully. I very much look forward to seeing this same technology being used in England for beef – not only for traceability, but to improve performance recording, which would allow producers to identify high performing stock for breeding selection.



### RACHEL WATLING

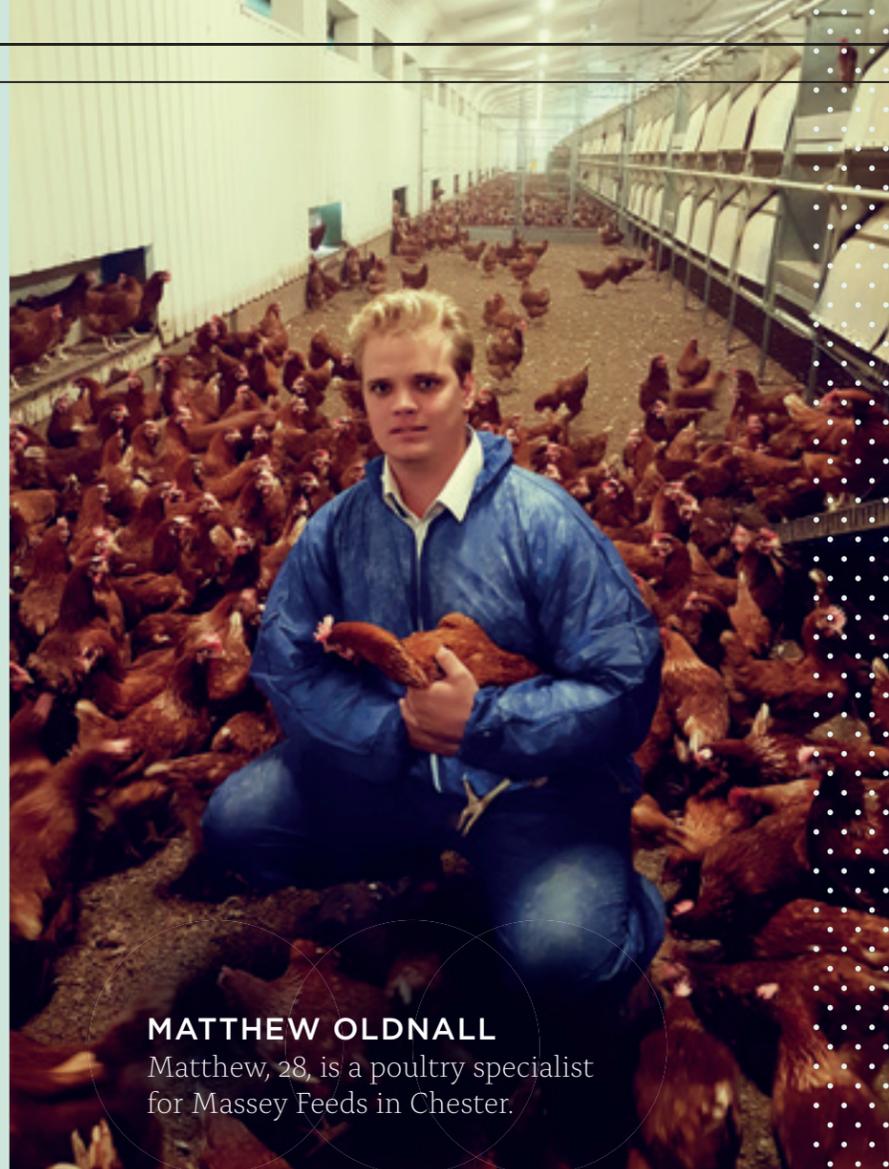
A graduate of the Royal Agricultural University, 25-year-old Rachel works at AgSpace Agriculture.

**M**y view is that technology is completely underutilised and patchy. There are two reasons for this. Rural connectivity has held some innovation back, and we also need to be better at helping the older generation of farmers see that technology can be integrated in their businesses. It has the potential to be transformational.

My employer, AgSpace, delivers digital solutions to agribusinesses, so I see first-hand how innovative new technology is not only helping our industry, but the wider world. Drones are the obvious area of focus at the moment, but robotics – in particular weeding robots – are fascinating.

Fresh produce and viticulture are leaps ahead within the industry and are markets to watch. I have always followed developments in automation as I think it will be responsible for helping farmers work smarter, not harder, in the future. Driverless tractors might seem like a long way away but you only have to look at the automotive industry to know they're not.

There are also other important applications for technology. According to the HSE, farming is the most dangerous job in the UK and is already notorious for lone-working. The goal posts change daily in farming; there is an increase in the amount of products disappearing from the market, and land is continually being taken out of farming and sold for development. More uptake of analytics and automation to enable productivity is key.



### MATTHEW OLDNALL

Matthew, 28, is a poultry specialist for Massey Feeds in Chester.

**A**mong the new technologies, I feel that data analytics will have the most disruptive effect on my career. Cross-discipline innovation has facilitated a completely fresh look at the poultry industry, allowing the data collected to be analysed and used to make decisions. In the past, data was collected for the sake of it, but we now understand it and use it to create a complete picture – informing and improving our management decisions. This has led a drive from a linear to a circular decision-making process, as the relationships between pros and cons are now easily identified.

In my working life, technology plays a huge part, affecting all the nutrient specifications of poultry feed and making these more accurate; diet formulation consequently becomes optimised for the birds' performance. Nutrigenomics is the next stage, and I believe advances in feed, allowing the genetic expressions of certain traits in livestock to be expressed or suppressed, has the possibility to transform certain elements of farming.

With most of the poultry industry embracing technology, the producers who refuse to adapt and keep up with the times will fall behind and it will become extremely difficult for them to compete.

### EMILY COLLINS

22-year-old Emily is a technical livestock graduate at AHDB.

**T**he uptake of technology in agriculture over the past five years has been impressive, and there is great scope for more to come.

The development of EID tags to make supply chains transparent following the 'horsegate' scandal is important for consumer trust. These tags have the opportunity to revolutionise how information – including movements, medical treatments and service data – on each animal is stored; this could massively reduce data input.

Embracing precision technology can be daunting, so it may fall to industry stakeholders and organisations such as AHDB to show the viability of technology to give producers the confidence to invest. Organisations endorsing technologies may gain reputational benefit; for the producers taking up precision technology, the upside will be increased efficiency.

The 5G 'rural first' project, which the Agri-EPI Centre is part of, is an exciting opportunity to build the case for 5G deployment to rural communities and agricultural industries. This will be crucial if precision technology is to reach its potential.

I do think we need to be careful not to rely on technology too heavily; it cannot be used in place of good stockmanship, which is vital to a successful livestock business. And we need to make sure that data is reported in a way that is easy to understand – otherwise it is just a large store of numbers. This is probably an issue that can be overcome, however, with sufficient training for producers.



### JAMES MILLS

Having returned to the 500-acre family farm in Yorkshire, 31-year-old James helps run an arable and sheep business alongside a new wedding venue.



**I**m a big believer in technology which has the potential to add value to our farm. In the short term, I think that it is likely to be improving analysis of production and efficiency of record keeping. However, longer term, if current trends continue, it will have an important role to play in reducing traffic across the land through developments such as automation and spot applications of crop protection products, for example.

I think automation has the greatest potential to revolutionise the industry and therefore is of the most interest to us. However, I feel we are still a few years away from that.

Compared with other farming businesses, our uptake of technology on the farm is limited at present, primarily because of the costs associated with it. The capital investment required for certain technologies is still quite high and, as an average sized mixed family farm, every investment is scrutinised. At present we are more focused on the human attention to detail. While time consuming, is a cost that's far less easily attributable when sitting down with the accountant.

However, when the time is right and the costs have reduced, we will invest in technology which allows us to be more efficient or productive, and that's the exciting part.

# THE ROBOTS ARE COMING

*It's no longer a question of 'if' but 'when' they will be deployed, according to the Small Robot Company.*



*Testing the technology at Meon Springs Farm, Hampshire*

Agriculture is on the cusp of a technology-led age that will prove to be as significant as the time when tractors first replaced horses. That's the vision of Small Robot Company co-founder Sam Watson Jones.

Sam says that the robot technology about to be unleashed will have a fundamental impact that will not just change the way landowners farm, but the way the countryside looks.

His aim is to create a farming industry where fieldwork, from

drilling to harvest, is carried out by small robots acting autonomously. It contrasts sharply with the long-term trend towards bigger and more expensive kit operating in large fields of single crop types.

For Sam, a fourth-generation arable grower, the economics of that ethos stopped making sense in a light-bulb moment back in 2014.

Working through the books on his Shropshire farm, he could see that average crop yields hadn't changed in 25 years, yet the cost of machinery had risen relentlessly. "It suddenly

stopped making sense to go on buying larger and larger pieces of kit and having to change the countryside to make them work efficiently," says Sam.

At about that time Sam encountered the work of farm robot pioneer, Simon Blackmore, a now-retired professor based at nearby Harper Adams University.

With the growing conviction that farming with robots could be viable, Prof Blackmore introduced Sam to technology entrepreneur Ben Scott-Robinson in early 2016.

## THE CONCEPT

While the concept of farming with robots is advanced, Ben and Sam wanted to ground any venture in muddy-boot practicalities.

The first step then was to canvass farmer opinions and Sam interviewed dozens of growers about the strengths and weaknesses of existing farm equipment.

It was clear that farmers shared Sam's concerns over the direction of machinery use, its scale and cost.

The meetings also revealed that farmers were keen to work with new technology. But they weren't ready to buy hardware because they feared the fast-developing technology would carry a high initial cost.

With that in mind, Ben and Sam developed the concept of building, developing and supplying the robots as a service rather than offering them for sale. This meant ownership of the robots would be retained by the developers but the use of the hardware could be secured for a regular payment.

On this basis, a partnership with 20 leading growers, covering 4,000 hectares of farmland, was established. Each farm invested £5,000 to kick-start robot development and, in 2017, Sam and Ben co-founded the Small Robot Company and its Farming as a Service (FaaS) venture.

## SUBSCRIPTION-BASED SCHEME

The aim of FaaS is to charge subscribers a monthly fee for the service, which will include all aspects of farming, from field mapping to harvest.

The robots will either be stored at the farm or, with larger crop control machines, the Small Robot Company team will transport the unit to the farm when needed.

Each small robot costs just £5,000 to build. This cost is already coming down and will soon fall below £1,000 per unit, predicts Sam.

Costs will be far lower than financing large pieces of equipment which often sit idle in the shed for 11 months a year, says Sam.

*“Robots could work on land that is off-limits to larger kit or reduce compaction on heavily trafficked areas.”*

## THE ROBOTS

Development of a trio of all-wheel drive, battery powered robots – codenamed Tom, Dick and Harry – is progressing so rapidly that the 10-strong team of engineers and software designers is ahead of schedule.

The first to be operating is Tom, which is about the size of a microwave oven and will eventually be stored on a subscribing farmer's unit.

Tom is a mapping robot, which takes high resolution images of wheat plants with a top-down view. The target is to log each plant with a geolocation device accurate to 2cm using real-time knowledge data, combined with a magnetic compass.

The prototype Tom will soon be capable of mapping 1ha/hour and operating autonomously for 20 hours a day.

The data collected by Tom is fed into an analysis system called Wilma, who uses image recognition software and artificial intelligence to learn the difference between wheat plants, weeds and other objects.

Progress has been rapid and Wilma can already identify wheat plants from weeds. As Wilma fine-tunes that knowledge, she is also learning to distinguish between a healthy or stressed plant and different weed species.

Once Wilma has been calibrated to reliably detect nutrient deficiencies, plant moisture deficits or weed populations, she will work in conjunction with Tom to recommend a course of action and alert the next robot – Dick.

Dick is the troubleshooter and, at about the size of a quad-bike, will be transported to the farm when needed.

“He could be operated by the farmer, a Small Robot Company employee or a contractor,” Sam suggests.

At the farm, Dick will use the mapped data to identify the treatment area. To kill weeds, he will use an electrically-charged lance, apply a pesticide in a targeted micro-spray or crush the plant as it emerges.

His other uses include the precision application of fertiliser, direct to the plant root, or tiny amounts of pesticide to take out disease.

Harry, the seed driller, will be the last of the initial trio to be developed.

Harry is a no-till drill which will be able to sow crops with far greater flexibility than the large kit currently on sale.

He will use the information provided by Tom and Wilma to punch seed into the soil at precisely the right depth and location for optimum growing conditions.

Data stored on a plant-by-plant basis means that, if a single one fails to emerge, Harry will be able to replace it.

## SMALLER MACHINERY, BIGGER BENEFITS?

The company claims the scale of the equipment yields huge benefits over larger machinery including:

- Less compaction
- Greater precision
- 90% less energy output
- 95% less pesticide use
- 90% less CO<sub>2</sub>
- 90% less fertiliser

The trio will be joined this summer by a utility robot, capable of carrying a variety of payloads up to 200kg. Already codenamed Jack, this unit may deploy a soil sampler or transport equipment and inputs for the other robots to use.

A precision harvester, as yet unnamed, is also progressing towards launch. It will link to the mapped data and accurately follow the crop lines drilled by Harry.

The lighter weight means a reduction in soil compaction and less crop damage.

“Robots could work on land that is off-limits to larger kit or reduce

compaction on heavily trafficked areas, boosting yields,” points out Sam.

And smaller kit is less dependent on weather and soil conditions, creating a larger operating window to carry out tasks at a time when they are most needed, for example applying fungicide to a diseased area even when soil conditions would prevent larger machinery from getting into the field.

The greater precision of a small robot means inputs can be targeted more closely, ruling out overuse of sprays and fertiliser and cutting their use to the minimum required.

That, in turn, reduces the costs of farming – both financially and environmentally.

## THE ROBOT REVOLUTION

Together the robots offer huge scope to revolutionise the way we farm and, with that, spark a new phase of evolution in the appearance of the British countryside, explains Sam.

Collectively, the robots and Wilma are creating the world's most detailed cropping data models.

Data on topography, micro-climate, soil type, input use and yields is recorded, indicating which areas of a field to use and in what way.



Sam Watson Jones is a robot pioneer



“A single field could contain a mixture of crop types set out by Tom, drilled by Harry and maintained by Dick. That could feed the information to create a profit per hectare equation,” Sam explains.

“The small robot harvesters will then follow up, gathering the individual crops precisely along the rows mapped out.

“Rather than being bounded by straight lines and ever-increasing field sizes, the countryside could become a swirl of growing crops produced at maximum profit.

“Working to the soil’s strengths, rather than changing it to meet the requirements of larger machinery, makes more sense environmentally and financially,” says Sam.

#### FUNDING

The case for technology in agriculture is compelling, and the Small Robot Company has attracted more than £2.5m in funding from backers, large and small.

Almost half (£1.2m) of the total was raised through the crowdfunding site Crowdfunder.

About 30% of the Crowdfunder total was contributed by farmers, and the huge interest saw the initial £500,000 target surpassed within minutes of launch. Among the non-farming backers is Google’s principal designer Matt Jones, who acts as the team’s mentor.

Of the remainder, the government-backed public body Innovate UK has provided two grants worth £900,000.

Farmers have contributed £300,000 in seed funding, including £90,000 in pre-sales.

Two further inputs of £50,000 each have been provided by crowdfunder Indiegogo and through a Horizontal Innovation Award from the Institute of Engineering and Technology. Shares in the Small Robot Company, at 34p each, have contributed further capital.



## TIMELINE

The Small Robot Company is on track to meet its targets which have been set over the next decade.

#### 6-12 MONTHS

Robot Tom and analysis system Wilma will begin a weed mapping service. Non-chemical weeding trials will undergo further trials at the end of the year.

#### 1 YEAR

Charging for a mapping service, using Tom, will begin in the 2020 growing season.

#### 3 YEARS

First commercial service will be extended beyond the initial 20 signed up farms.

#### 5 YEARS

The commercial service will encompass 5% of the UK arable market.

#### 10 YEARS

Matching coverage of conventional tractors using swarms of robots. Small Robot Company will be operating internationally.



# POPULARITY IN DIVERSIFICATION REMAINS STRONG

*Farms and estates continue to develop new income streams but barriers to entry and success still exist.*

Research carried out with over 250 farm and estate owners shows that the appetite to develop new non-agricultural income streams remains.

With Basic Payment Scheme entitlements set to disappear in less than a decade, landowners at all scales have been investigating suitable alternative streams to complement their existing businesses.

New research carried out by Farmers Weekly, in partnership with Carter Jonas, has shown that more than two thirds are currently diversifying.

Of those who aren't currently considering a project, four out of five are likely to do so in the next five years.

But the traditional barriers to progressing a project remain.

Respondents identified funding and budgeting as key concerns, just behind securing planning permission, which ranked highest as a problem that most felt they would need to overcome.

## WHAT LANDOWNERS SAID

There are many diversification projects which suit farms and estates.

Land and roof space can be put to renewable energy generation, while old livestock sheds and redundant barns can be turned into residential accommodation or commercial space.

The research identified that

commercial or residential development are currently the most popular choices for diversification.

Workshops, retail units and office space were all listed by respondents who have ventured into commercial lets, while rented accommodation and holiday cottages have proven popular among those with dwellings at their disposal.

Solar panels – both ground and roof-mounted – are the most likely renewable energy projects to be developed.

## OVERCOMING THE BARRIERS

Alongside planning permission, securing funding and budgeting present the greatest challenges for those not currently diversifying but considering doing so.

Jonathon Day, rural consultant at Carter Jonas, says he understands the need to borrow in the current climate.

Having been at the Agricultural Mortgage Corporation (AMC) for 25 years before joining Carter Jonas in February, he has seen a vast number of applications from farms and estates to borrow small and large amounts to fund diversification projects, as well as expansion.

## DIVERSIFICATION INSPIRATION

Jonathon Day has dealt with a huge array of diversifications – some mainstream, others not so. They include:

- Car restoration
- Care home
- Sawmilling
- Nursery
- Telecoms
- Machinery dealerships
- Construction and building
- Food and drink manufacturing
- Vehicle servicing

“When times are hard in farming, applications are often made to restructure debt whereas when times are good, applications reflect a desire to expand,” he says. “In the current climate, the disappearance of the Basic Payment Scheme is making some businesses consider that their current business model won't stand up in 10 years' time.

“Diversification is an area such businesses will look at, alongside those who have more sons and daughters than the farm can sustain and need new income streams.”

Affordability has risen in significance among lenders since the recession.

While agriculture has always been a favoured market – and remains so – they are now keen to stretch test businesses to ensure that they can afford repayments if interest rates rise.

Demonstrating affordability is just one aspect of the process though.

“An application for a diversification project should include a budget and a business plan,” says Jonathon.

“This differs significantly from lending applications that landowners may have experienced in the past. For example, borrowing to buy the neighbouring field will not traditionally have required a detailed budget.

“But if you're going to build a farm shop, you need to detail why it is in a good location, how many customers you expect to get, and how you have arrived at that number.

“There is a whole range of things to think about, which is why it's useful to use a consultant to help you do the market research to prove your budget is accurate.”

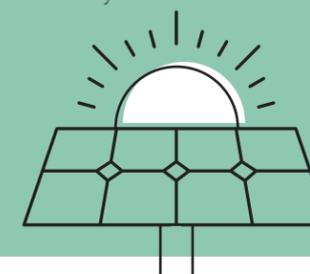
## WHY DO SOME LENDING APPLICATIONS FAIL?

All banks require some security to lend against and this might be an issue for some new businesses or tenants, Jonathon said.

“A good track record in business will

## SNAPSHOT OF FINDINGS

- Two-thirds of respondents are currently diversifying on their farm or estate, with commercial or residential development the most popular.
- Of those not currently considering a diversification, 80% said that they will do so in the next 5-10 years.
- Common commercial projects include workshops or retail units.
- Holiday lets are very popular residential developments, as are dwellings for the private rented sector.
- Ground or roof-mounted solar panels are the most likely renewable energy projects.
- Leisure facilities mentioned include livery yards and shooting grounds.
- Over half of those currently diversifying plan to do so further in the next five years.
- Just one in five respondents received funding or grants for their project.
- Around a third each consider their diversification was profitable in the first, second and third years.



help your case – and it could work against you if you don't have one,” he added.

Being aware of the volatility of the market you are going to be involved in is also worth consideration.

While agriculture is deemed relatively low risk, the new diversification might not be.

“A farm with a pub for example – and yes they do exist – are two very different markets. The long-term prospects for traditional agriculture are fairly secure, while rural pubs are under pressure.

“A diversification such as self-storage is another example. If there are lots of landowners doing a similar thing nearby then a bank might not think it will be as profitable.

“My advice – do your research and know your market.”

## GETTING HELP

Jonathon advises businesses planning diversifications to seek expert support if they feel funding their project is going to be challenging.

“What Carter Jonas is able to do is review the plan and spot areas where the application needs to be strengthened in order to give it the best chance of succeeding.

“We are also able to advise on where a business can go to apply for funding on long-term rates, which provides the financial stability a diversification requires to successfully get it off the ground.”

# 2019 Model Estate

*Carter Jonas' notional agricultural Estate is now in its ninth year, and analysis from the firm for the past 12 months shows a year of ups and downs for the various components, reflecting the level of uncertainty in the continually changing wider economy.*

## IN HAND FARMS

The falling arable land values had a significant impact on the Estate's in hand sector, which recorded a 2.6% decline in 2018 to £17.68m. The impact could have been greater still with UK average arable land recording a drop in value of 5%, year-on-year. However, the Estate's Grade II Listed Manor House increased in value by 0.6% and reduced the sector's decline from 4.5% to 2.6%. Further support came both from the woodland parcels, which performed strongly with a 5% increase in values, and from an increase in farm income [see box]. The report commented that while the in hand element had faced "a number of headwinds due to ongoing uncertainty in the wider economy," the fundamentals of the sector continued to hold firm. A finite supply, strong demand for the right quality product and, importantly, a favourable tax regime, bolstered the asset class.

## LET FARMS

The let farms element of the Estate declined by 2.3% in 2018 – underpinned by the 5% fall-off in arable land values. However, the overall decline masked a 1-2% increase in capital values for the four cottages on the let farms, demonstrating that a diverse portfolio will increase resilience.

## LET RESIDENTIAL

Of the Estate's assets, the residential portfolio chalked up the biggest increase in contribution to its performance. The seven houses yielded £2.96m – up by 3.9% – due to strengthening capital values. The percentage increase is in line with the regional market where demand for good quality, well-located and reasonably priced stock has continued to grow.

## LET COMMERCIAL

The let commercial sector produced a static performance, contributing £3.9m. Positively, the portfolio remains fully occupied due to strong local demand and limited supply of good quality office buildings. Occupiers are increasingly focused on quality and looking for 'wellness factors' such as natural light, which augers well for the long-term occupancy of the Estate's units.

## OTHER ASSETS

An increase in the reversionary land value of the solar park created a 0.6% increase in contribution from the remaining assets. The value of the commercial shoot and telecoms mast remained stable.

## IN HAND FARM INCOME

Dropping beans from the rotation and increasing the spring barley area from 100 to 223 acres proved to be a shrewd move as cereal prices rose significantly. Spring barley prices increased by 20.4% on a £ per acre basis in 2018, and were almost matched by prices for winter-sown milling wheat, which rose by 19.6%. Oilseed rape cropping prices also increased during the period, by 5.1%, while the budget for the 71 acres of grassland remained flat.

The large increases in commodity prices, set against broadly flat costs, took the in hand farm income to £170,000, an increase of 28.1% on 2017. This performance was achieved despite a 9.7% drop in Basic Payment Scheme contributions to £94 per acre.

## MODEL ESTATE VERSUS OTHER INVESTMENT TYPES

Despite the 1.7% decline in the overall value of the Model Estate, it outperformed a number of key alternative investment classes including retail property and equities.

After reaching a peak in July 2018, equities on the FTSE All-Share index plunged during the autumn and ended the year 13% down on 2017 figures.

Within the Estate's diverse portfolio, residential property performed strongly against other asset classes. Let houses on the estate, which saw growth of 3.9%, outstripped the UK average of 2.3% for residential property investments as Brexit uncertainty continued to contribute to a slowdown in house price growth.

*"Residential property performed strongly against other asset classes."*

The Estate's performance has also beaten retail property. The move to online shopping has left more town-centre units vacant, resulting in an overall drop in value of 5.6% nationally.

However, other forms of commercial property investment in the UK showed stronger growth than the Estate's figures. Industrial units across the UK grew by 11.4% and offices increased by 2.3%.

Other assets such as classic cars, up 1.8%, and fine wine, down 0.3%, have proved relatively stable investments. Despite an increase in value of 1.2%, gold continued to be a more volatile investment class, influenced by macroeconomic factors and fluctuations within the foreign exchange markets.

See the full results at  
[carterjonas.co.uk/model-estate](http://carterjonas.co.uk/model-estate)

# ELEVEN REASONS TO VISIT *The Game Fair* THIS JULY

*With so much going on at The Game Fair this year, read our guide to make sure you don't miss a thing.*

THE GAME FAIR  
UP TO 20%  
OFF ENTRY  
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GAME FAIR

\*\*\* SPECIAL OFFER \*\*\*

*Use code CJ2019 to secure your discounted price for Silver, Gold or Platinum enclosure packages.*

	Discounted price (1 ticket)	Discount	Discounted price (2 tickets)	Discount
<b>Silver</b>	£80	10%	£155	13%
<b>Gold</b>	£100	16%	£190	20%
<b>Platinum</b>	£190	4.5%	£370	7%

**Carter Jonas will be located next to The Game Fair Theatre again this year, do pop and see us at any time over the three days.**

thegamefair.org | carterjonas.co.uk/the-game-fair

**W**hen The Game Fair was first held in 1958, its primary purpose was to bring people together.

Although then it was focused on gamekeepers, 61 years on the mission is largely the same – even if the scale has increased dramatically.

About 120,000 visitors are set to gather at Hatfield House in Hertfordshire from 26-28 July to experience everything from archery, clay pigeon shooting and food to equestrian, fishing and falconry.

Here is a selection of the attractions that we're most excited to see:

## THE GAME FAIR THEATRE

Sponsored by Carter Jonas, the Theatre is a place where issues and ideas are debated, tested and scrutinised with a great line-up of speakers, politicians, personalities and celebrities. You can keep up to date with the theatre schedule as it develops at [carterjonas.co.uk/the-game-fair](http://carterjonas.co.uk/the-game-fair).

## GUNDOGS

Dogs and their handlers travel far and wide to compete in The Euro Challenge. The Home International Competition also features the top gundogs from England, Ireland, Scotland and Wales, who go head-to-head in a purpose-built arena complete with authentic cover crop, jumps and water.

## SHOOTING

The show boasts the most comprehensive outdoor shooting exhibition held anywhere in the UK, with a packed itinerary for all lovers of the sport including clay, rifle and airgun shooting as well as have-a-go events, demonstrations and competitions.

## JAMES MARTIN

Fresh from his most recent series 'James Martin's Great British Adventure', the chef will be cooking for Silver, Gold and Platinum package holders within the prestigious Game Fair Enclosure. The menu will feature sustainably sourced produce from the British countryside.

What's more, Carter Jonas has secured special rates for all VIP packages, so why not treat yourself?

## SHOPPING

Retail therapy is easy to come by with a broad range of recognised brands and little-known niche food producers and craft stalls to choose from.

## FISHING

There are not many shows in the UK where you can go fishing, but The Game Fair delivers. This year, angling is taking centre stage with a new and improved Fishing Village at the very heart of the event.

## MAIN ARENA

Celebrating British field sports and country life, the main arena includes demonstrations from gundog handling, falconry and the ever-popular Shetland Pony Grand National (pictured).

## EAT, DRINK AND BE MERRY

There are numerous bars and catering areas around the site, including the Totally Food area and Gin Makers' Row. These areas will continue to satisfy the growing demand for 'farm to fork' food.

## GAME FAIR GARDENS

New for 2019, The Game Fair has joined forces with Capel Manor College to deliver the largest show garden in Europe. Game Fair Gardens will tell the story of the countryside and of country estates, kitchen gardening and traditional crafts, in a series of themed gardens.

## FALCONRY

Following the success of the 2018 event, CJ's Birds of Prey will once again bring together the largest collection of birds of prey anywhere in the UK.

## GO OFF ROAD

You can put the Subaru range to the test at The Game Fair's purpose-designed off-road course.



*Carter Jonas' Head of rural agency Andrew Fallows (left) and investment partner Stephen Hall*

## ALL EYES ON THE MARKET

*Buyers and sellers of UK farmland won't stay quiet forever. Rural View spoke to two of Carter Jonas' most experienced investment agents to find out what to do to make you're ready for when the market hots up.*

*Investment partner Stephen Hall picks four key market influences which could affect investor confidence and acquisitions in UK farmland.*

Political uncertainty has done little to inspire confidence in the individuals and businesses looking to invest in UK farmland.

Throughout the final quarter of 2018, and the first quarter of this year, most have kept a watching brief while

negotiations in London and Brussels have taken place.

This has led to a quieter than usual period and, at the time of writing, placing a timescale on how long the uncertainty will last would be pure speculation.

However, there are a number of political and economic influences which we know from experience will impact decisions made in the investments and acquisitions arena.

Each of these will stimulate activity or dampen enthusiasm from purchasers to a greater or lesser degree.

### TRADE DEALS

As of Spring 2019, we do not have clarity over what trade deals will be done and what tariffs will be applied to goods entering and leaving the UK.

However, this is an area which will have a significant impact on investment – it remains to be seen whether that impact is positive or negative.

Whatever happens, we are going to see changes to trade. We have been dealing in a market where trade tariffs have been set centrally by the EU, and they have broadly focused on ensuring the protection of member states' agricultural industries.

Post Brexit, the terms of trading agreements will be determined by the political will of the UK government at any given time, and the position taken by our potential trade partners.

### SUBSIDY

The Government has stated in the Agriculture Bill that it intends to move away from an acreage payment to occupiers of land, towards a system that targets public money at public goods – so payments will largely depend on farmers and landowners protecting and enhancing the environment.

Most farms and estates are dependent – to some degree – on the income they have historically received from Europe via the Common Agricultural Policy.

This change of direction from the Government is a significant shift away from large-scale, pro-rata income and, despite the proposed transition period, the move will have an impact on decisions to invest in, or divest money from, farmland.

### TAX

It's fair to say that agriculture has enjoyed a relatively benign tax regime for a number of years, and this could be the focus of any government's attention going forward, regardless of whether it's Labour or Conservative led.

There is a question as to whether the current tax system is sustainable – there has been talk for some time of a different approach, but we simply don't

know at this stage what that will be.

A left-leaning government is almost certainly going to consider changes to Agricultural Property Relief, and the Conservative Party has been making noises about changing the tax system too.

It would be a popular policy in Whitehall – the number of people who benefit from agricultural property relief is relatively few in number, so supporters lack collective political power.

### CURRENCY

Overseas investors in the UK will see a strengthening of their position if the pound devalues.

However, shortly after the Brexit referendum vote, we saw the pound fall by 15%, which was favourable to overseas buyers of UK property, but this failed to be a significant factor in the farmland market because, from a policy point of view, agriculture was still left in a state of uncertainty.

The increased buying power didn't solve the fundamental concern over issues such as the future of subsidies and agricultural policy.

A further decline in the value of sterling, twinned with clarity from a trade and subsidy perspective, could see currency fluctuation become a bigger driver and have a positive impact on the land market.

### ABOUT STEPHEN

*Prior to joining Carter Jonas in 2017, Stephen's work centred on farmland acquisitions in the UK, eastern Europe and South America. At Carter Jonas, he is principally focused on land investment for private and institutional clients, advising on strategy, sourcing opportunities, and overseeing due diligence and negotiations of terms of sale.*

## GET READY FOR OPPORTUNITY

*Carter Jonas' head of rural agency Andrew Fallows says investing time in your business while the farmland market is quiet will put you on the front foot when the Brexit smog clears.*

It would be a mistake to think that this period of political uncertainty we are experiencing is delaying all farm launches and preventing deals going through.

It is true that the farmland market has been slow get going in 2019 but, as a firm, we are now seeing more land and farms being brought to the market.

To date, there is increased interest around the country, with as many deals being agreed off-market than on.

The most impact has been seen with large-scale purchases. Those investing at the £10m plus price point are certainly acting more cautiously, but most farms don't sell for that much.

Opportunistic purchasers – neighbours, expanding farmers and tax-driven buyers, for example – will always be active, and a certain level of supply will always exist from death, debt and divorce.

We continue to see strong demand for farms and estates which offer something extra – a non-agricultural income, renewable energy development or planning potential, for example.

### DEALS ARE BEING DONE

Winter is traditionally a quieter time for launches to take place and contracts to be exchanged, but there has been activity to report.

Carter Jonas handled more AMC applications than any other firm in 2018; a record year for the lenders, showing continued investment within the sector.

Many sales have been agreed off market, and some of these have even included significant enterprises.

On the open market, those with keen eyes will have spotted the launch of the



1,845-acre Laxton Estate last year – believed to be the last remaining example in Europe where the open-field system has been preserved.

Being sold on behalf of The Crown Estate, this has been an interesting piece of work for Carter Jonas, because finding the right buyer for the estate has taken on more importance than negotiating a sale to the highest bidder.

The Crown Estate has a parliamentary undertaking to protect the open-field system so has been seeking a buyer who will continue to promote and protect the system. A healthy level of interest has resulted in a suitable purchaser being selected, and the estate is currently under offer.

### THE IMPACT (OR NOT) OF THE AGRICULTURE BILL

Undoubtedly, there will be examples of farm and estate owners who are not buying or selling because of Brexit but, in isolation, it is not the huge factor some would suggest.

The current extension to October 2019 of the withdrawal agreement is likely to bring forward uncertain purchasers who have had enough of waiting. For those holding off, it's likely to be a question of looking for clarity on trading terms and agricultural policy.

Despite the publication of the Agriculture Bill, there is still a lot to be sorted out. The Bill as it stands is purely enabling legislation. The devil will be in the detail.

We know direct support is going to disappear, but we don't know the level of funding which will replace it, for example.

What we do know is that people will still need to eat and we will still need to produce food, so the viability and value of good farming enterprises will continue.

Future agricultural policy will cause some businesses to make significant changes in order to thrive, and that in itself may bring land to the market, be it for sale or rent.

### CAN YOU PUT YOURSELF IN A BETTER POSITION?

Getting your business ready for opportunity is a really important consideration.

Look at your balance sheet now, and identify which parcels of land may be surplus, or could work harder for you.

Maybe some land could be put to an alternative use, creating another income stream which is not so heavily reliant on pure agriculture.

The opportunities that may come your way could take a number of different forms.

A neighbour might retire, a larger farm may want to take on some of your land, or there may be new ways of working together through joint ventures or machinery sharing.

My message to Carter Jonas clients is to use this period wisely. The market may be quiet at the moment but that won't last forever, and it is those who are in a position to move who will be able to make the most of opportunities when they arise.

### THE AGRICULTURE BILL

Landowners have finally got some insight into the shape of Government policy post-CAP. The Agriculture Bill progressed through the Public Bill Committee in November but still needs to go through a report stage and the House of Lords. Many amendments are likely, and the NFU says it could be autumn before the Bill completes its passage through Parliament.

### THE PROPOSALS AT A GLANCE

Direct payments made under the Basic Payment Scheme will be phased out, but over a seven-year transition period which won't begin until 2021. Payments will gradually shrink, with larger claimants impacted to a greater extent from the outset (see table to the right).

A surprise inclusion in the Bill was a proposal for farmers in England to be able to take several years' worth of capitalised farm payments during the transition period. Michael Gove indicated that the cash could be used to help facilitate retirement for those needing money to invest in property away from the farm they occupy, however closer inspection of the numbers suggests it is unlikely to be that simple.

As expected, Mr Gove's view that public money should be directed at delivering "public goods" is evident throughout the Bill; no more so than in the proposal for new Environmental Land Management scheme (ELMs) contracts. Landowners making demonstrable improvements

to natural assets such as soil quality, water or biodiversity would be among those eligible to claim under the proposals.

Increasing productivity, research and development are key aims of the Bill. Farmers will be able to join together to apply for funding for projects to make them more profitable or reduce their environmental footprint.

Direct payment band	Reduction
Up to £30,000	5%
£30,000 - £50,000	10%
£50,000 - £150,000	20%
£150,000 or more	25%

# Rural Marketplace

A selection of the top property for sale or recently sold from around the country



**MALMESBURY, WILTSHIRE**  
 Guide price £4,650,000

A peacefully and privately situated small country estate, with charming six-bedroom house, traditional buildings with planning potential and modern dairy buildings. In all about 168 acres.

Contact Kit Harding  
 kit.harding@carterjonas.co.uk  
 01225 747271



**KINGSBRIDGE, DEVON**  
 Guide price £6,500,000

A very private residential and arable farm situated in an Area of Outstanding Natural Beauty, with a Grade II Listed farmhouse, a range of farm buildings and, in all, about 352 acres.

Contact David Hebditch  
 david.hebditch@carterjonas.co.uk  
 01823 428591  
 or Jack Mitchell  
 jack.mitchell@carterjonas.co.uk  
 01823 428593



**PICKERING, YORKSHIRE**  
 Guide price £1,310,000

A mixed agricultural, sporting and forestry estate with significant potential, located on the edge of the North York Moors. In all about 523 acres.

Contact Sam Johnson  
 sam.johnson@carterjonas.co.uk  
 01423 707801



**STANFORD DINGLEY,  
BERKSHIRE**  
Guide price £6,500,000

An attractive residential farm with fantastic southerly views over the Pang Valley. This property features a principal house, cottages, excellent equestrian facilities and 128 acres.

Contact Andrew Chandler  
andrew.chandler@carterjonas.co.uk  
01635 263 010



**NORTH KELSEY,  
LINCOLNSHIRE**  
Guide price £2,250,000

A fertile and productive 363 acre parcel of bare arable and pasture in a mixed field structure.

Contact Jack Cook  
jack.cook@carterjonas.co.uk  
01223 346616



**SHEPTON MALLETT,  
SOMERSET**  
Guide price £7,850,000

Two commercial arable and livestock holdings serviced by eight dwellings and excellent modern farm buildings. In all about 562 acres.

Contact David Hebditch  
david.hebditch@carterjonas.co.uk  
01823 428591  
or Jack Mitchell  
jack.mitchell@carterjonas.co.uk  
01823 428593



**STAVELEY, CUMBRIA**  
Guide price £2,770,000

A 478 acre farm, with modern and traditional buildings, a large principal house and two cottages – all with spectacular Lakeland views.

Contact Oliver Bateman  
oliver.bateman@carterjonas.co.uk  
01539 814906



#### BANGOR, GWYNEDD

Guide price £725,000

A substantial Grade II Listed farmhouse in 39 acres of grazing pasture land, benefitting from a range of modern farm buildings and traditional stone outbuildings.

Contact **Hugh O'Donnell**  
[hugh.odonnell@carterjonas.co.uk](mailto:hugh.odonnell@carterjonas.co.uk)  
 01248 360417



#### NOKE, OXFORDSHIRE

Guide Price £7,950,000

A well-located residential farm a short distance from Oxford, comprising a farmhouse, a barn conversion, a barn to be converted and mainly arable land extending to about 340 acres.

Contact **Andrew Chandler**  
[andrew.chandler@carterjonas.co.uk](mailto:andrew.chandler@carterjonas.co.uk)  
 01865 297700



#### INGLEBY GREENHOW, YORKSHIRE

Guide price £1,900,000

A productive dairy and livestock farm with farmhouse, stockman's cottage and a versatile range of buildings. In all about 245 acres.

Contact **Sam Johnson**  
[sam.johnson@carterjonas.co.uk](mailto:sam.johnson@carterjonas.co.uk)  
 01423 707803



#### PWLLHELI, GWYNEDD

Guide Price £750,000

A coastal farm with a farmhouse in need of full renovation, commanding fine views and benefitting from its own stretch of stunning beach. In all about 200 acres.

Contact **Hugh O'Donnell**  
[hugh.odonnell@carterjonas.co.uk](mailto:hugh.odonnell@carterjonas.co.uk)  
 01248 360417



#### LAXTON, NOTTINGHAMSHIRE

Price on application

The last remaining example of the open-field system and court leet in the country, a unique heritage estate of significant educational and curatorial interest.

Contact **Ben Ainscough**  
[ben.ainscough@carterjonas.co.uk](mailto:ben.ainscough@carterjonas.co.uk)  
 01604 608224



## SCOOP

### WE KNOW THIS INDUSTRY FROM THE INSIDE

As with all our services, we take a deeply personal approach to valuation. Our local expertise is unparalleled and we're truly invested in every client. So for expert advice on everything from lease renewals to litigation, call into our parlour.

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