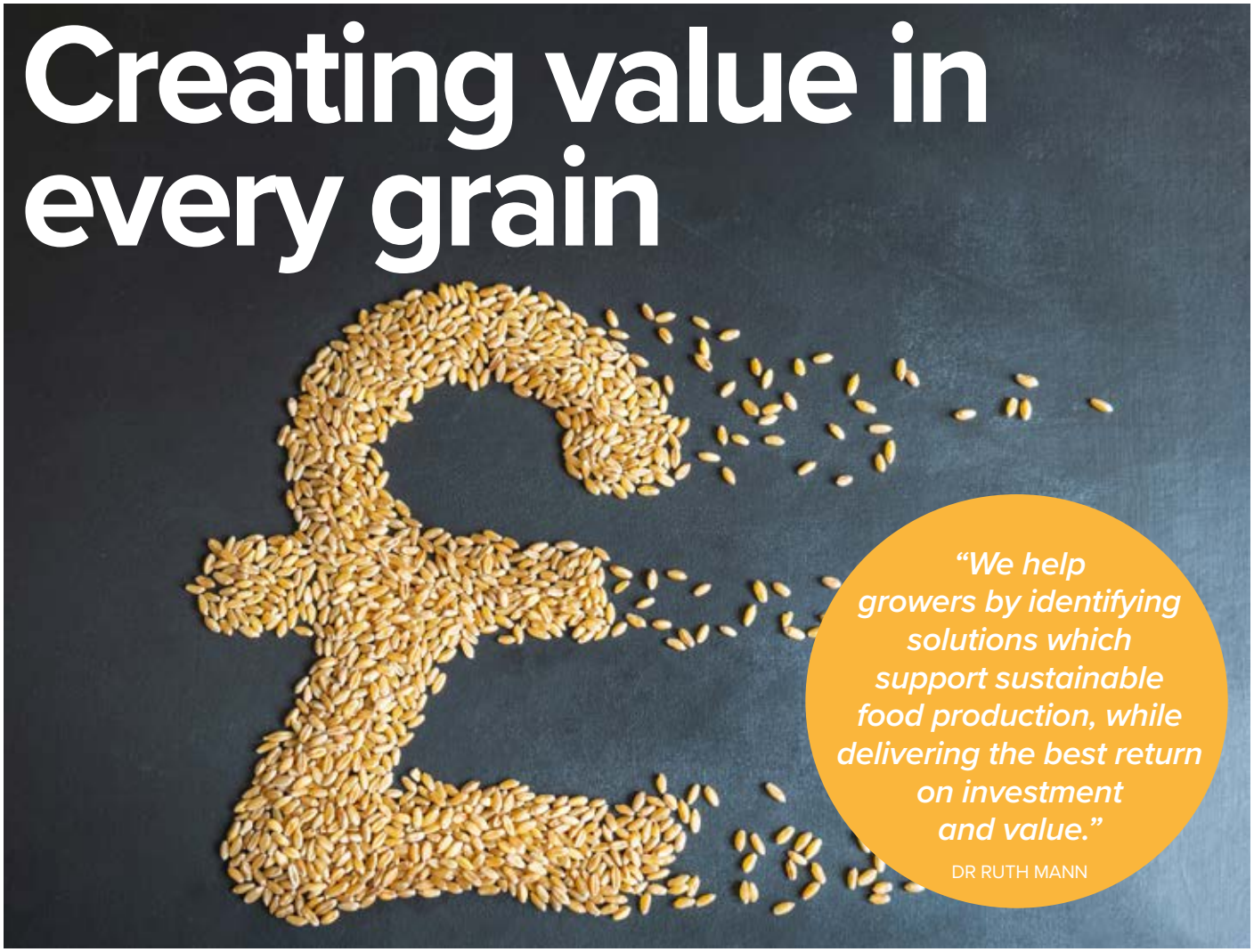
Creating value in every grain



Delivering for the triple bottom line – financial, social and environmental performance – is becoming increasingly important for farming businesses when success no longer equates to just yield. *CPM* looks at the concept of value, and what one agronomy company is doing to help growers achieve it.

By Charlotte Cunningham

While during the agricultural 'glory days' of yesteryear, yield was very much king, operating in today's highly volatile environment means there's been a gradual shift among UK farming businesses.

In being subjected to unpredictable externalities – whether that's in weather conditions, geopolitical-driven input prices, stop-start government support mechanisms or overall market demands – there's a general sense that success has to depend on much more than a harvest headline.

Dr Ruth Mann, head of R&D at Agrii, says while in some instances yield remains the primary goal, this isn't always the right approach. "Instead, our view is to focus on triple bottom line delivery – where success is measured according to a business' financial, social, and environmental performance.

"This acknowledges the concept of value rather than cost for all, whether that's the farmer, their customers or the wider public," she explains.

However, when it comes to financial performance, to operate at even a basic level, a farm business must be profitable. Consultant Paul Pickford believes this can only be truly understood when utilising gross margins. "Simply put, any business requires a budget, especially a farming enterprise which is complex and at the mercy of many externalities.

"In calculating a budget based on gross margins, growers can begin to grasp a level of control," he stresses.

Paul explains that gross margins mean the profitability of different crops or

Supporting all

Agrii's Dr Ruth Mann says trials are no longer a simple 'A versus B' – there are a breadth of desired end goals across many individual farms, which R&D now has to try and address.

livestock enterprises can be compared, stripped of overhead or fixed costs. This information can then be used after harvest to provide an accurate assessment of crop performance, and inform future planning.

"While there are still businesses that don't prepare gross margins each year, more are. With increasing pressure on farm finance and resources, the importance of understanding the quantum of variable costs for a growing season can't be emphasised enough.

"A budget won't change the weather or the value of grain, instead, it enables adjustments to be made to keep a business moving in the right direction, when factors beyond their control change."

The starting point is knowing what the end goal is, suggests Paul. "If you don't have this, it's impossible to predict what inputs are required and subsequently, the financial investment that'll warrant.

"This is intrinsically linked to understanding what your farm can achieve – including average yields – and critically, being realistic."

As well as providing guidance and advice regarding calculating gross margins (see box), a lot of Agrii's work begins before products or technologies even land on farm. Ruth estimates that hundreds of products are screened in the company's trials each year across various crops, programmes and sectors.

Furthermore, all of these trials are analysed for margin over input against the baseline of current on-farm prices, to ensure the subsequent advice offered by agronomists is relevant.

She agrees that it's critical to have a strategy in mind ahead of each season. "For example, the goal could be achieving milling wheat quality and the associated bonus; so how do you achieve that? It means selecting the most appropriate variety, being aware of disease risk, creating a robust fungicide programme and nutrition plan.

"Equally, the aim could be to reduce synthetic input use by migrating over to a more biological-based approach. This will require a different plan of action and the triple bottom line result won't necessarily be the same."

Ruth adds that trials are no longer a simple 'A versus B' – there are a breadth of desired end goals across many individual farms, which R&D now has to try and address. "This is why Agrii oversees 400 replicated trials per year, 100 unreplicated demo trials, 16 iFarms, six technology centres and four Digital Technology Farms.

"Testing novel product introductions in viable 'real-life' programmes enables us to identify their strengths and weaknesses across different environments, soil types and geographies. This keeps our agronomists on the technical front foot to get the best out of any crop."

According to Ruth, a key aspect of R&D is trying to predict how the future farmer might have to manage their individual business in light of chemical losses, technology gains, erratic weather patterns and more. "We de-risk the process to help growers make that transition by identifying solutions which support sustainable food production, while delivering the best return on investment and value."

Agrii's sustainability and environmental services manager, Amy Hardwick, points out that there are three pillars to the notion of sustainability – economic, environmental and social. She says in light of current challenges in the sector, it's highlighted those businesses which haven't paid enough attention to being efficient and making more from less.

"If you take nitrogen use efficiency and being adaptive to current conditions – in understanding what a crop requires and how it's being used, growers can be more efficient ▶

Making the numbers count

Having a business budget is the foundation of all investment decisions, and it starts with gross margins per crop

Start small, but make a start, is the message from consultant, Paul Pickford. "It's getting in the mindset of proactively managing the business rather than the other way around.

"Start with calculating gross margins per crop, building up to the whole farm gross margin. Then, once confident, the goal is to devise a five-year business plan," he explains.

There are many sources of information that farmers can draw upon to produce gross margins for their businesses, but being able to refer to specific data from actual performance is the most accurate, adds Paul.

Additionally, Agrii has produced a comprehensive set of gross margin data since the late 1990s. It also has a low-cost service run by its business consultancy and agronomy teams, which produces arable crop gross margins with reference to detailed benchmark data.

Levelling up to a whole farm gross margin, this involves combining individual enterprise gross margins, including environmental scheme options. "This provides a function of the farm's rotation and Agrii has developed a tool which enables whole farm gross margins to be calculated quickly," says Paul.

He says this helps growers to understand the effect of cropping changes on the amount of investment in variable costs required, reducing the likelihood of unexpected cashflow shortfalls.

Taking control
Consultant Paul Pickford wants growers to get in the mindset of proactively managing their business, rather than the other way around.

"Once a whole farm gross margin has been prepared, the effect of changes to input costs, yield and crop value can be tested individually, or in combination, showing the resulting impact on output, variable costs and gross margin."

With the tools and support from Agrii, Paul believes it should be possible to bridge the gap between those who are already calculating gross margins, and those who don't. "Growers may require a little help in getting things underway, but suddenly it'll come together and they'll get a grasp of what they're trying to achieve."

What sustainability means

In many instances, economic and environmental sustainability are intrinsically linked, points out Agrii's Amy Hardwick.

or targeted in fertiliser applications.

"Not only does that have an impact on yield, but it also affects margin, and beyond this, the carbon footprint of a crop and its interaction with the environment," she says. "This demonstrates how in many instances, economic and environmental sustainability are intrinsically linked."

Amy highlights that her role essentially addresses two objectives: helping farmers to diversify their income, and, ensuring they're being paid for existing activities or minor tweaks to farming practices.

The former could mean engaging with biodiversity net gain, she suggests. "In taking unproductive land or areas not fit for conventional farming, we can start to explore other options for income.

"For example, Agrii is currently working with Biogains on a scheme which offers farmers a rental payment for such unproductive areas, where they'll manage the land with a nature-focus on behalf of the grower. This is ideal for those who are looking for a hands-off approach," explains Amy.

As for being paid for making adjustments to existing farming activities, she says Agrii is working with Bunge (formerly Viterra) and Whitworth Bros Flour Millers on its Sustainable Grain Programme. "The purpose of this is to reward farmers for reducing their environmental impact and therefore assisting supply chain companies to reduce their Scope-3 emissions. This could involve on-farm tactics such as using nitrification inhibitors, cover cropping or direct drilling.

"Because sustainability varies greatly across different farms, the programme isn't too prescriptive and has a tiered approach."

Looking outside the box even further, Ruth believes future farming systems will have to target alternative value concepts, as market demands shift. "In this case, R&D will have to look at new traits such as the quality credentials of grain rather than its quantity, for nutritional gains.

"This will involve identifying the products and technologies to help growers to achieve that goal. In finding new ways of creating value in a crop and increasing its worth, we have the potential to increase its margin. That's the future," she concludes.

Farm level results

Trial results provide hard evidence for what inputs and technologies can deliver

Aligning with the full picture of future crop production requirements underpins Agrii's R&D drive, and evaluating the benefit of products and practices for growers at farm level remains a key priority, says Dr Ruth Mann.

"We're all focused on long-term sustainability, but for farmers to really buy in to new technology they have to understand the financial implications of the choices they make in the short-term, particularly when there's so much pressure on costs.

"It's exacerbated by low commodity prices, so wherever we can we'll carry out a cost benefit analysis of our recommendations and R&D findings."

Recent Agrii trials during the past two growing seasons have shown the benefits of integrating the use of drone technology (Skippy Scout), robotics, RHIZA soil mapping, satellite imagery and disease prediction tools to deliver on the triple bottom line, she continues.

"Trials completed by Agrii's technology trials manager, Jonathan Trotter, for example, proactively managed the fungicide and fertiliser inputs using this integrated approach to technology.

"Representative results showed increases in yield of up to 16%, reduced CO2 equivalent emissions by up to 46%, reduced nitrogen input costs by up to 15%, and increased Nitrogen Use Efficiency by 12%.

"Even though at some of these sites the input costs were up to 7% higher, which included a combination of biosolutions and the adoption of technology itself, they also achieved an increased gross margin of up to 26% compared with the farm standard approaches.

"These results, therefore, indicate that the use of precision technologies in combination with Agrii's agronomic knowledge, can improve sustainability, enhance farm business resilience and drive productivity at scale."

Evidence for impact

With heavily marketed products and technologies regularly entering the agricultural sphere, often with bold accompanying promises, UK farmers have much to consider when it comes to selecting the tools to power-up their production systems.

Through an R&D-supported approach, Agrii aims to de-risk this selection process by providing hard evidence for what these introductions can deliver within real-life farming environments – and critically, whether the numbers stack up.

As such, this series of articles kindly sponsored by Agrii, will explore themes such as the importance of calculating gross margins, new supply chain initiatives, approaches to carbon foot-printing and how to best use new technologies.

***CPM* would like to thank Agrii for providing expert insight into these topics, and for the privileged access to the individuals involved.**