

Agri Matters



Supporting the Irish Agricultural Industry

Winter 2023/2024



Welcome to our Winter 2023/2024 Edition of Agri Matters



John Farrell

Last year is a year that most hope won't be repeated again. Challenging weather, reduced output prices and input costs that were slow to retreat, meant that 2023 was a difficult year for most farming sectors. On top of that, the new Common Agricultural Policy (CAP) programme with new schemes and payment rates resulted in delays in payments to farmers and we got clarification that the Nitrates derogation limit was reducing to 220kg of organic N/ha.

Thankfully as we enter 2024 there is some signs of positivity with prices for some sectors starting to stabilise and move upwards, and we hope that this trend continues throughout the year.

While many factors that ultimately dictate the profitability of farming in any one year are outside of farmers direct control, it is important to take the time to review your cost situation in 2023. The end of 2021, 2022 and much of 2023 were higher cost years for most farmers, and it is important to try to strip out as much of those increased costs as possible this year. It might not be easy, but our low-cost grass based system remains our key competitive advantage for livestock production and should remain our ultimate focus.

From a banking perspective, there was no significant increase in cashflow support requests in 2023 and overdraft utilisation remain at relatively low levels. However, we expect there may be an increase in cashflow support requests throughout Q1 of this year. New lending activity levels remained fairly resilient throughout the year driven mainly by the land market with a noticeable decline in on-farm investment. We would expect the overall new lending to the sector as reported by the Central Bank of Ireland (CBI) to be on a par with 2022. The trend of declining outstanding balances to the sector as reported by the CBI continues, with debt levels to the Agri Sector in September 2023 at its lowest levels since the start of the millennium.

In this edition of Agri Matters Donal Whelton reflects on the year that was for Irish farmers across all farm sectors in 2023 and offers his insights into what 2024 may have in store. We continue our Signpost Series with an article from Siobhan Kavanagh on the 12 Steps to Reducing Greenhouse Gas Emissions framework which is the basis of the advisory programme supporting and enabling farmers to reduce emissions.

We feature an article from Leo McGrane on the AgTech Innovation Centre in UCD and profile the support it can provide to early-stage startups in Ireland and Europe, in the AgTech, Agrifood, Veterinary and Equine sectors. Daniel Noonan from the AIB Economic Research Unit provides our usual economic commentary while Eamonn O'Reilly AIB Agri Advisor, examines the impact of the reduced nitrates derogation limit on farms and discusses the options available to them.

As always we hope that you find something of interest in this edition and we would like to take this opportunity to wish you a healthy and safe 2024.

John Farrell

AIB Agri Sector Team

Donal Whelton, Head of Agri, Food and Fisheries, reflects on the peaks and troughs of 2023 and considers what 2024 could have in store.



Donal Whelton

No two years are alike when it comes to farming and that one liner still holds true today. Looking back on this time last year, many sectors were coming off the back of all time high family farm incomes, excluding pigs. Sentiment for many sectors was optimistic, even though many were afraid to talk of the grey clouds that possibly loomed around the corner. This year, the new Common Agricultural Policy programme and the introduction of new cow banding inadvertently changed our sector.

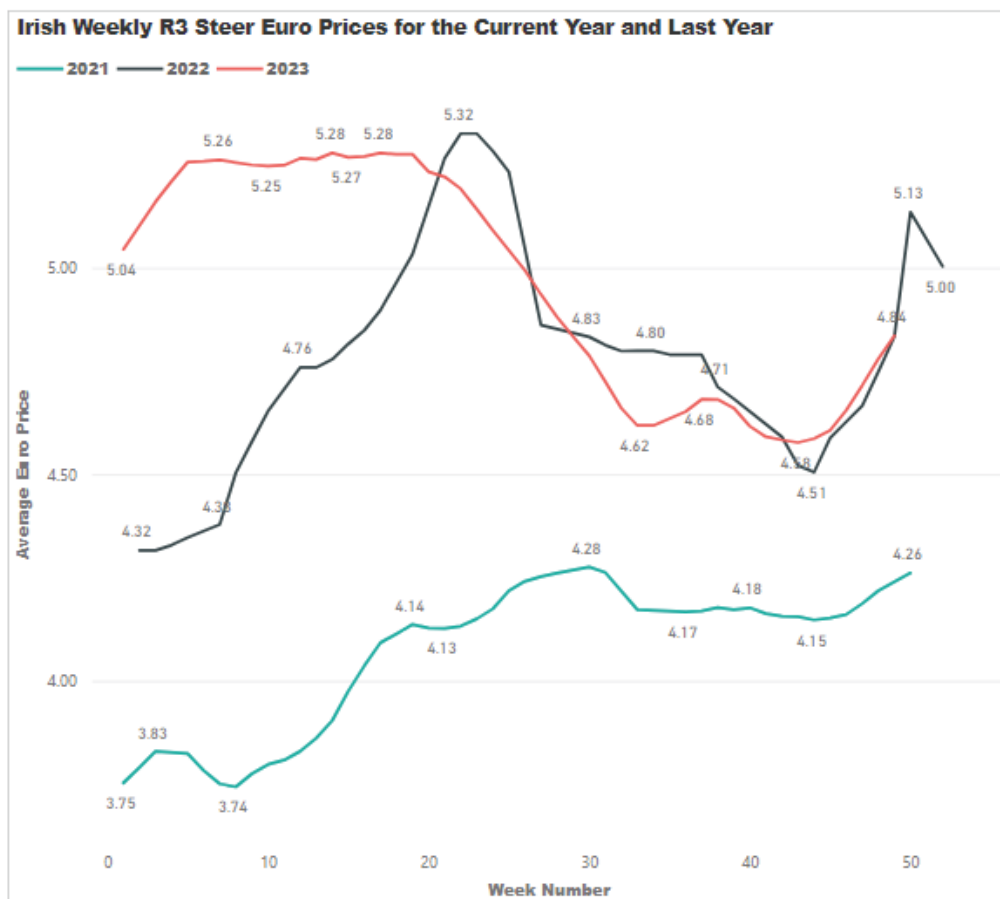
Since our last publication the Chinese market has closed and reopened to Irish beef exports due to atypical Bovine spongiform encephalopathy (BSE) and ruminant live exports from Britain to Ireland have been closed. Persistent wet conditions last year challenged all sectors, particularly our tillage farmers, many of whom never got the opportunity to harvest some of their crops. Dairy farmers have been challenged by lower milk price while sheep and beef farmers

battled continued high input costs. However, for the pig sector, 2023 was thankfully a more rewarding year after two years of significant cashflow difficulties.

Beef

A very challenging Autumn meant a poorer performance at grass delaying the supply of prime cattle. Cattle throughput for 2023 was down 1% on last year. Tighter cattle supplies and lighter carcass weights reduced the availability of beef for export in the last few months of the year. There has been a strong demand for prime cattle in recent weeks and at the time of writing, base quotes for steers are working off €5.15-€5.20/kg while quotes for heifers have mostly been working off 5c/kg to 10c/kg more. While the rising cattle prices are welcomed, prices still remain well below the prices being paid in our key export market, the UK.

Figure 1 - Weekly Irish R3 steer prices (ex. VAT)



Source: Bord Bia.

However, like the weather things are far from settled with a confirmed cases of bluetongue in Kent, UK and a confirmed case of atypical BSE in Ireland. As we all know, both notifiable diseases have serious economic consequences. For bluetongue this means a ban on the movement of all ruminant animals from Britain to Ireland while a confirmed case of atypical BSE meant beef exports to China were temporarily suspended. The news of an atypical BSE case was a blow to the beef industry as the Chinese market had just reopened to Irish beef exports in January 2023, following a three-year closure due to a previous case discovered in 2020.

Looking ahead to 2024, the forecast for the Irish beef sector is optimistic. With anticipated declines in EU beef supply and stable UK beef supply, average Irish finished cattle prices are expected to increase marginally, while young cattle prices are also forecasted to rise. Lower fertiliser prices will contribute to a projected decrease in input expenditure, with direct costs of production expected to decline on beef farms. All in all, we would expect incomes on beef farms to be up slightly in 2024.

Dairy

2023 will be remembered as one of the more challenging years for the dairy industry with lower milk prices outpacing the decline in input costs, leaving margins tight for the year. Since record price highs in 2022, milk price has reduced by roughly 20c/l. Indications of a decline in the demand for dairy products became apparent in various markets in late 2022/early 2023. The combined impact of elevated food price inflation, coupled with a slowdown in economic activity during 2023, resulted in reduced demand for dairy in both developed and emerging markets. At the time of writing milk price has started to trend upward again with many processors increasing their prices for October, November and December milk supplies (See Figure 2). Dairy commodities for butter and cheddar cheese reached a high of €7,200/t and almost €5,000/t respectively in 2022 with current butter and cheddar prices of €5,510/t and €3,660/t. At the time of writing the latest Global Dairy Trade Index (GDT) increased by 2.3% and is the fourth consecutive price increase.

As the dairy sector enters 2024, there is cautious optimism for a more positive outlook. Rabobank estimates milk production from the big 7 export regions to grow by 0.3% in 2023 and 0.4% in 2024. This is significantly less than the 1.6% average annual growth from 2010-2020. While European markets are currently seeing an increase in price that is primarily driven from a tightening of supplies, not an increase in demand. At home, the reduction of the nitrates derogation from January 2024 will have an impact on over 2,000 farmers and mean significant adjustment to their farming system. For anyone concerned about the implications of such changes on their farm, we encourage you to contact us.

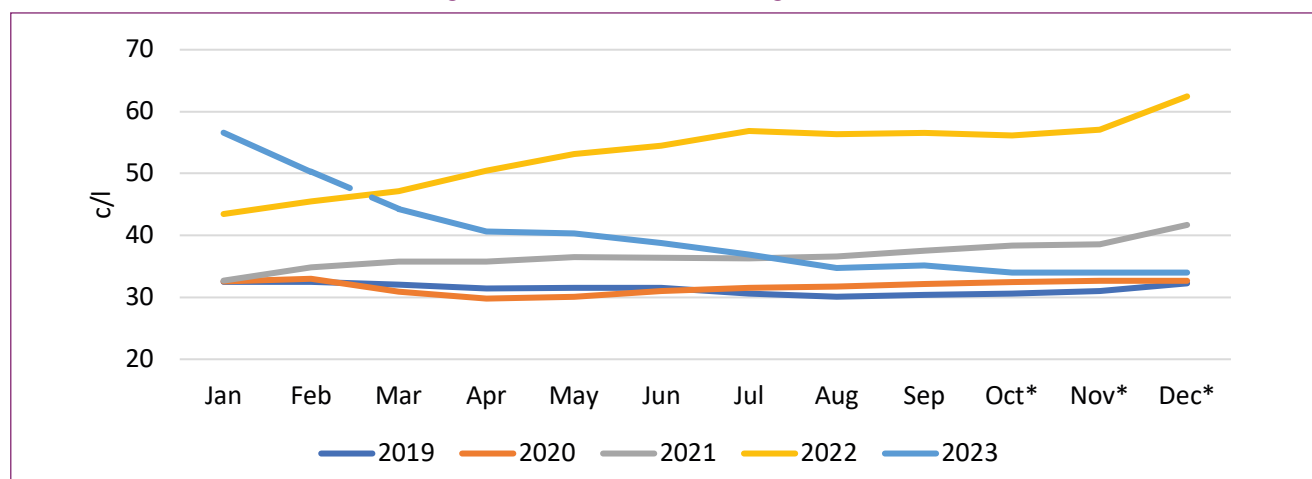
In summary, the dairy sector anticipates a return to more fruitful income levels in 2024. However, this is relative to a challenging 2023. While challenges such as elevated production costs will persist, the projected improvement in farm milk prices is poised to boost output value, offering a brighter economic landscape for Irish dairy farmers in the coming year. At this stage, the outlook for 2024 is positive and we anticipate a rebound in milk prices, to be at or close to, the second highest on record.

Sheep

The Irish sheep sector is navigating a dynamic landscape shaped by both European and global influences. While EU sheep meat production is projected to experience modest growth in 2023, the focus remains on the lasting impact of high EU prices, leading to a decline in exports and a surge in imports from New Zealand and the UK. From an Irish perspective prices were back by an average of 3% in 2023 with prices on an upward trend towards year end.

Amidst these market intricacies, Irish mid-season lowland lamb producers have witnessed a positive shift in their economic landscape. Lower direct and overhead costs of production in 2023, coupled with support from the Sheep Improvement Scheme under CAP Pillar II, contributed to a modest increase in gross margins per hectare. Looking ahead to 2024, Teagasc are forecasting that the outlook for Irish and EU lamb prices remains favourable, providing a solid foundation for the sector's growth. Reduced input costs and stable or slightly increased sheep price should result in incomes in the sector increasing in 2024.

Figure 2 - Irish Manufacturing Milk Price



Source: CSO. *October, November and December 2023 prices are estimates.

Tillage

In the challenging landscape of the Irish tillage sector for the 2023 season, global dynamics played a pivotal role. Despite a decline in global soft wheat and barley production, the surge in international maize production managed to bolster overall cereals production on the global scale. Unfortunately, this positive international outlook did not translate as favourably for Irish farmers, as the confluence of reduced yields and a significant drop in cereal prices, particularly for spring barley, winter barley, and winter wheat, resulted in a noteworthy decrease in harvest prices by over 30% (Teagasc Outlook, 2023). The Irish tillage sector faced a double blow with a significant decrease in Irish spring barley yields and a dip in winter wheat yields compared to 2022.

The financial repercussions of these developments were felt at farm level with significant reductions in farm income in 2023 from the highs of 2022. Looking ahead, the outlook for the Irish tillage sector remains more promising than last year. Continued further reductions in input costs coupled with a more positive harvest price as indicated by the futures markets combined with a return to normal trend yields should result in income on tillage farms increasing in 2024.

Pigs

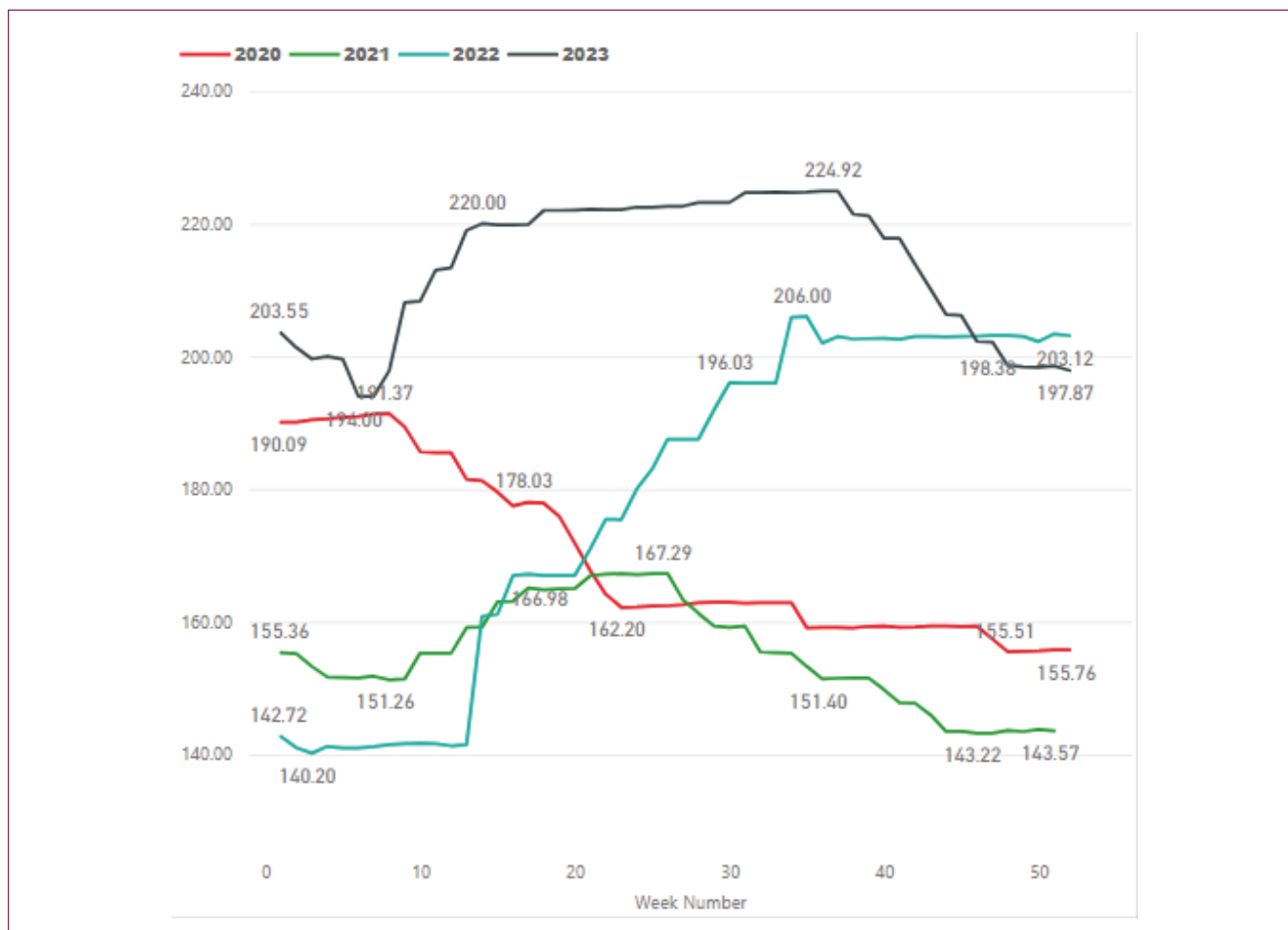
2023 thankfully marked a return to profitability on Irish pig farms. Two years of low prices coupled with inflated input costs following the invasion of Ukraine put a significant strain on the sector. At the time of

writing grade E pig prices are €2.05/kg to €2.10/kg deadweight (dwt) and have been on a downward trend in recent weeks. Teagasc estimates a Margin over Feed (MoF) of 69c per kg of dwt for 2023. This is 167% higher than the 26 cent in 2022, which was the lowest in 40 years. The improvement in MoF is mainly driven from an increase in pig price (See Figure 3) and not feed costs which have remained virtually unchanged compared to 2022. Total throughput in the sector was down 9% in 2023 and this is a trend across many of the key European pig producing countries including Denmark, Germany, Spain and France.

From a Chinese imports context, the reduction in available product in Europe throughout 2023 left opportunity for the US, Brazil and Canada, all of which have grown their market share of Chinas pig meat imports. While feed costs are expected to come back somewhat in 2024, this will be negated by a reduced pig price and as a result we expect MoF to reduce in 2024 versus 2023. However, we expect 2024 to remain a profitable year.

In summary, 2024 is anticipated to be a more fruitful year for many sectors. However, this is against a relatively poor year in 2023 and is laced with many uncertainties. Weather conditions, ongoing conflicts, overall economic performance at home and in key export markets will play a pivotal role in how the Irish agricultural sector will fair out. Farmers still need to be aware of production costs and the importance of on-farm efficiency inside the farm gate.

Figure 3 - Weekly Irish pig prices for 2020 to 2023 ex. VAT



Source: Bord Bia.

In our Signpost Series, **Siobhan Kavanagh from Teagasc**, discusses the 12 steps to reducing Greenhouse Gas Emissions (GHG).



Siobhan Kavanagh

The Signpost Programme dairy demonstration farmers are making progress in adopting the 12 Steps to Reducing Greenhouse Gas Emissions. Farmers participating in Teagasc's Signpost Programme are on target to reduce their emissions through a series of actions and adjustments to their farming systems. The Signpost Programme is designed to support and enable all farmers to farm more sustainably, and the role of the 120 demonstration farms taking part in the programme is to showcase technologies that can reduce gaseous emissions, and to provide a location for other farmers to learn.

The 12 Steps to Reducing Greenhouse Gas Emissions framework is the basis of the advisory programme supporting and enabling farmers to reduce emissions. The 12 Steps translates the mitigation actions in the Marginal Abatement Cost Curve into key actions at farm level.

The baseline year for data collection for the Signpost demonstration farms was 2021, and Teagasc expects to track on-farm changes on the Signpost Farms over multiple years – at a minimum to 2025, for a five-year time series. The results referred to in this feature are for the first 24-month period and, as such, are initial indicators only of progression towards lower greenhouse gas emissions.

Progress and potential

On average, total greenhouse gas emissions for these farms was 974t CO₂-e per dairy farm. Carbon emissions Life Cycle Assessment (LCA) per kilogramme of product was 0.92kg CO₂ e/kg fat and protein corrected milk. Emissions per hectare were 10.4t CO₂ e/ha.

Considerable progress has been made on the Signpost dairy farms to implement the 12 Steps. There is more potential to further reduce total GHG emissions on the Signpost farms by further reducing chemical nitrogen use and increasing the proportion of their chemical N applied as protected urea.

The data from beef, sheep and tillage enterprises is currently being analysed and will be available over the coming weeks.

Step 1: Use protected urea

Framework recommendation: Apply protected urea instead of CAN/straight urea.

Baseline data for Signpost farms: These farmers are using protected urea as a source of more than half of their fertiliser nitrogen (N), but there is still scope to increase its usage. Availability was an issue in 2022.

Step 2: Apply lime

Framework recommendation: Apply lime to fields identified as low pH.

Baseline data for Signpost farms: These farms were extensively soil sampled in late 2021 and early 2022, and the farmers have used the results to target lime applications, with 77 tonnes spread per farm on average (equivalent to 0.86 tonnes per hectare farmed) in 2022. It is important that an increase in the use of lime is matched by a decrease in chemical N, as that is where emissions savings occur.

Step 3: Build or maintain soil fertility

Framework recommendation: Continue to use phosphorous (P) and potassium (K) fertilisers such as 18:6:12.

Baseline data for Signpost farms: Four out of ten soil samples had the correct soil pH, P and K. This is higher than is the case on a typical dairy farm (two in ten samples for 2022).

Step 4: Use 100% LESS

Framework recommendation: Apply slurry in spring/early summer using Low Emission Slurry Spreading (LESS) technology.

Baseline data for Signpost farms: There has been complete adoption of LESS by this group of farmers. All dairy farmers sampled their slurry in 2022, allowing them to make informed decisions as to where and how much slurry to apply.

Step 5: Reduce chemical N use by 30%

Framework recommendation: Apply lime, incorporate clover and make best use of slurry/farmyard manure.

Baseline data for Signpost farms: These farmers have started the transition to a lower dependence of fertiliser N use, with fertiliser N usage 17% lower in 2022, and an average chemical N use of 170kg/ha. There is scope to further reduce chemical N use

by incorporating clover on these farms as well as maximising the value of liming and slurry application.

Step 6: Better grassland management

Framework recommendation: Weekly farm walk, measure grass and extend grazing season.

Baseline data for Signpost farms: Signpost dairy farmers have a high level of grass utilisation; the target of 12t DM grass utilised/ha was exceeded by many of them last year.

Step 7: Improve animal health

Framework recommendation: Create a herd health plan.

Baseline data for Signpost farms: Many different elements contribute to herd health, including lameness, mastitis, infertility, pneumonia, fluke, etc. Milk was produced with a low somatic cell count of 124,000 cells/ml on average.

Step 8: Improve dairy herd quality

Framework recommendation: Use high Economic Breeding Index (EBI) bulls and increase herd EBI by >€10/year. Use sexed semen to accelerate genetic gain.

Baseline data for Signpost farms: The target on the programme was to increase herd EBI by €10 per year, which was achieved by the Signpost dairy farms.

Step 9: Increase milk solids/cow

Framework recommendation: Milk record, cull poor cows and aim for 305 day lactation.

Baseline data for Signpost farms: There was a high level of technical performance on the Signpost dairy farms in 2022 with an average milk solids output of 498kg per cow and feeding 1,189kg concentrates per cow. Concentrate usage was high due to the drought

conditions in 2022.

Step 10: Reduce age at first calving

Framework recommendation: Calf heifers at 22 to 26 months.

Baseline data for Signpost farms: The average age at first calving was 24 months on these farms.

Step 11: Finish cattle earlier

Framework recommendation: Use Dairy Beef Index (DBI) to produce earlier finishing cattle.

Baseline data for Signpost farms: Dairy farmers have a significant role to play in improving the quality of the dairy male calves available for finishing. The DBI of the beef sires used by the Signpost dairy farmers was on average €71 in 2022.

Step 12: Incorporate clover

Framework recommendation: Incorporating 5kg/ha (2kg/ac) clover seed will replace up to 100kg/ha (80 units/ac) of chemical N/year.

Baseline data for Signpost farms: More than eight out of ten farmers (86%) have incorporated clover into reseeds in 2022, setting them up for further reductions in chemical N use. An assessment of clover content on these farms was made in 2023. Almost 50% of area farmed was assessed as having some clover. One third had high levels of clover, with similar amounts with medium and low levels.

ACKNOWLEDGEMENTS

The sustainability metrics for individual farmers presented in this article are generated by the National Farm Survey (NFS) team.

Contributors - *Siobhan Kavanagh*, Communications and Engagement Specialist, The Signpost Programme, Teagasc Oak Park. *Cathal Buckley*, Senior Research Officer, Agricultural Economics & Farm Surveys Department, REDP, Teagasc Athenry.

Tom O'Dwyer, Head of Signpost Programme, AGRI Centre, Teagasc Moorepark.

Brian Moran, National Farm Survey, REDP, Teagasc Athenry.



Speakers at the AIB Agri Sustainability event held in October in AIB Bandon Co. Cork were from L to R Gavin Hunt, Project Manager Farm Zero C; Raymond Goggin, Teagasc Signpost Demonstration Farmer; Noreen Walsh, Head of AIB Cork; Sheila McCarthy, Branch Manager, AIB Bandon; Diarmuid Donnellan, Head of Sustainability for Agriculture, Food and Fisheries, AIB; Brian Nugent, Head of Consumer Banking, AIB.

Daniel Noonan, from the AIB Economic Research Unit, discusses the slowdown in the Irish economy and the positive outlook.



Daniel Noonan

The rate of growth in the Irish economy was always expected to decelerate from the breakneck speed seen in 2021 and 2022. Tighter monetary policy, still elevated levels of inflation, and high levels of uncertainty, owing to a difficult geo-political backdrop, were forecast to weigh on the global economy in 2023, including the highly open Irish economy. However, it should be noted that Irish growth has slowed by more than anticipated in 2023, albeit, the economy remains in good shape overall. Furthermore, there are a number of factors which suggest Ireland should continue to perform well economically relative to its peers over the coming years.

Just to recall, Irish Gross Domestic Product (GDP) grew by 15.1% in 2021, and 9.4% in 2022, while modified Gross National Income (GNI) (which excludes some distortionary effects of multinational companies) rose by 13.9% and 6.7%, respectively, over the same period. The domestic economy, as measured by modified domestic demand (MDD) expanded by 7.3% in 2021 and 9.5% in 2022. Meantime, the level of employment was 13.1% higher at the end of 2022 compared to the end of 2020, while the unemployment rate averaged just 4.5% in 2022. Thus, no matter what measure you choose, the economy performed very strongly in 2021-22.

In 2023 though, GDP was in decline. This largely relates to a fall in contract manufacturing activity abroad, stemming from base effects and post-pandemic normalisation in activity. The Central Bank of Ireland (CBI) notes that, investment from multinational enterprises (MNE), and exports from pharmaceutical companies registered double-digit growth in 2022, partly due to pandemic related factors. However, both fell back in 2023, contributing to weaker MDD and negative GDP growth. Data are available for the opening three quarters of 2023, and show output from the MNE-dominated sectors contracted by 2.7% compared to the same period in 2022. However, output from the domestic-facing sectors of the

economy grew by 4%. It means that overall, GDP was 1.3% lower year-to-date at end September. Meantime, MDD was up by just under 1% to end Q3. The CBI sees MDD expanding by 1.5% overall in 2023.

Other indicators though, suggest that the Irish economy continued to perform well last year. Labour market data in particular has remained quite robust. Employment rose by 1% between Q2 and Q3. Gains in employment have been broad-based across sectors, and in total, the economy added over 100,000 jobs in the year to end September. The labour force is growing strongly too, increasing by 111,000 in the latest twelve-month period. One unusual feature of the labour market though, has been the pick-up in the unemployment rate, at a time of rapid job growth. The unemployment rate rose from 4.1% between February – April, to 4.8% by November. However, this reflects the fact that the labour force has been growing more strongly than employment recently, and should not be taken as a sign of weakening economic activity. In contrast, the increase in the number of people available for work is a welcome sign that one of the constraints facing the economy – a tight labour market – is easing somewhat. Overall, the unemployment rate is likely to average 4.4% in 2023, slightly below the 4.5% rate seen in 2022.

Encouragingly, inflation has also fallen back throughout 2023. Like elsewhere, Ireland has experienced a significant inflation shock over the past two years, owing to supply chain distributions and higher energy costs, which were amplified by the War in Ukraine. Inflation as measured by Harmonised Indices of Consumer Prices (HICP) (EU-wide standard measure) peaked at 9.6% in June/July 2022 and averaged 8% for the year. However, it declined sharply last year, and stood at just 3.2% in December 2023 according to the preliminary estimate. However, core inflation remains stickier, with the ex-food & energy inflation rate at 4.3%.

Turning to the agricultural sector, the preliminary estimate from the CSO shows that farm incomes declined by 27% last year due to falling output prices and volumes. Looking at the key underlying trends from 2023, the value of milk output fell by 27.4%, due to a sharp drop in prices, with production volumes falling by a modest 1%. In terms of livestock, the

value of cattle and sheep output declined by around 1.5%, while the value of pigs and poultry rose by over 10%. In volume terms, cattle and pig output fell by 5% and 8.5%, respectively. Elsewhere, cereal production declined by 26% in volume terms, owing to bad weather, with prices falling by 30% also.

Meanwhile, the CSO estimates that the cost of farming inputs fell outright by 5% in 2023, primarily due to a drop in the price of fertilisers. However, this needs to be viewed in the context of the rapid price increase seen in 2022, largely due to the war in Ukraine. CSO data show that the price of fertilisers is projected to have dropped by 22% in 2023, having increased by 25% in 2021, and by an exceptionally large 123% in 2022, meaning they are still almost double the price seen in 2020. At the same time, energy prices are estimated to have fallen by 2.8% last year also. However, all other input price measures are expected to have risen in 2023.

Looking ahead to this year it is clear that the outlook for the Agri-sector, much like the wider Irish economy, will depend on the evolution of inflation and the global economic backdrop. Another year of sluggish growth is anticipated for the global economy, with demand dampened by the tightening of monetary policy and the cost-of-living pressures over the past two years.

However, inflation is set to wane further, and interest rate cuts are expected over the next couple of years. Furthermore, despite forecasts for subdued global growth, recent forecasts from the Economic and Social Research Institute (ESRI) and CBI show they expect stronger Irish growth in the coming year, assuming the drag on output and investment in the multi-national sector abates.

The ESRI and CBI are projecting that growth in GDP and MDD will average in the range of 2.0-2.5% in 2024. The CBI also provides longer term forecasts and sees GDP growth picking up to 4.25-4.5% in 2025-26. Furthermore, labour market conditions are projected to remain tight out to 2026, with the unemployment rate staying below 5%. The CBI warns though, that the economic outlook is uncertain and its growth forecasts are subject to downside risks. There are also domestic capacity constraints on growth in terms of a tight labour market, shortage of housing and pressures on the public infrastructure. Nonetheless, fiscal policy is set to remain expansionary in the context of the healthy state of the public finances. Additionally, private sector balance sheets remain characterised by low debt and high levels of savings. Thus, after falling back in 2023, there are still plenty of reasons to be optimistic about the outlook for the Irish economy.



AIB is delighted to have become the exclusive financial partner of Carbery Groups Farm Zero C project. Present at the launch are L to R Cormac O'Keeffe, Carbery Chairman, Minister for Finance, Michael McGrath and AIB Chief Executive Colin Hunt.

Leo McGrane, Manager at AgTechUCD Innovation Centre, showcases what the Agccelerator Programme has to offer.



Leo McGrane

The AgTechUCD Innovation Centre promotes and accelerates early-stage startups and SMEs with disruptive innovations in Ireland and Europe in the AgTech, Agrifood, Veterinary and Equine sectors, helping these early-stage ventures build their innovative businesses into leading enterprises. The AgTechUCD Innovation Centre is part of NovaUCD, the Centre for New Ventures and Entrepreneurs and the commercialisation arm of University College Dublin.

AgTechUCD delivers a suite of programmes and tailored support for startups and SMEs including:

- **Innovation Days** - helping businesses generating solutions for the agricultural industry.
- **Incubator** - helping new startups to build their business models and develop a minimum viable product (MVP).
- **Accelerator** - helping startups get customer and investor-ready, and scale globally.

Based at the UCD Lyons Farm, the AgTechUCD Innovation Centre offers the only on-farm workspace hub to promote and accelerate agri-businesses and startups. AgTechUCD provides access to on-farm experimental facilities, allowing testing and trialling of products and services in a real-world environment. Startups also have preferred access to UCD food processing facilities, access to Venture Capital & Business Angels networks, mentoring, corporate partners, office, and lab spaces, and much more. The AgTechUCD Innovation Centre is funded through Enterprise Ireland's Regional Enterprise Development Fund.

The Agccelerator Programme

AgTechUCD's accelerator programme, aptly named the AgTechUCD "Agccelerator" Programme, is a 12-week programme for early-stage startups in Ireland and Europe, in the AgTech, Agrifood, Veterinary and Equine sectors. The programme supports startups as they build their innovative businesses into leading enterprises. The Agccelerator programme aims to fast-

track business development and leadership skills for early stage founders. And best of all, the programme was built from the ground up with the agricultural industry in mind, and its focus on the sector is experienced throughout the workshops.

The programme has taken great care to be tailored to understand the particular needs and challenges facing startups within, and adjacent to, the agricultural industry. It consists of weekly practical workshops, giving the startups the tools, templates, support and guidance needed to accelerate their early-stage venture.

On top of helping founders build the core foundations of a strong, investable business, the AgTechUCD Agccelerator is a great vehicle for profiling the startups who participate in the programme, helping to build awareness in the investment community about the business's innovations. The programme is also strongly focused on mentoring, matching the startups with industry mentors to help guide them through the common pitfalls experienced by many early-stage companies.

The programme offers the following supports to its participants:

- Business development workshops
- Investor readiness training
- Brand profiling and PR
- Dedicated Mentoring
- Access to AgTechUCDs Corporate Network
- Preferred access to On-Farm Testing at UCD Lyons Farm
- An Active Alumni Network
- And much more!

Applications for the Agccelerator Programme open in July each year with the programme commencing in October and running through to the end of January. There is no cost to participate in the programme and AgTechUCD don't take any equity from the startups we work with. The only cost is time. This programme is a time for startups to work on their business, rather than in their business.

AIB & The Yield Lab Support

The AgTechUCD Agccelerator Programme has been supported by AIB and the AgriFoodTech venture capital firm, The Yield Lab since its inception in 2021. The Agccelerator Programme runs for 12 weeks, and it culminates in an Investor Day Event, where the startup companies who participated in the programme pitch to a panel of experienced investors for their chance to win a cash prize. AIB and The Yield Lab are financial supporters of the programme, having contributed a €10k prize to the programme in 2022 and 2023. This prize was awarded to one stand-out company on the programme in each of these years. The 'AIB and The

Yield Lab AgTech Startup Award' was presented to Cotter Agritech in 2022 and My Gug in 2023.

Cotter Agritech

Cotter Agritech, a Limerick based agtech company founded by brothers Jack and Nick Cotter, has developed an innovative, mechanical sheep handling unit along with companion software that lets farmers know whether to dose their sheep and lambs or not. These innovations reduce both manual labour and antibiotic use on sheep farms, saving farmers time and money and reducing labour and antibiotic resistance issues.



Pictured receiving the AIB & Yield Lab Agtech Startup award 2022 are Jack & Nick Cotter of Cotter Agritech. Also pictured are (From L-R), Donal Whelton, AIB Head of Agriculture, Food and Fisheries; Tom Flanagan, Director of Enterprise & Commercialisation, NovaUCD; James Maloney, Senior Development Adviser for Agtech, Climate & Sustainability, Enterprise Ireland; Niamh Collins, Director of AgTechUCD; David Bowles, Managing Partner, The Yield Lab Europe.



Pictured above is the Cotter Crate and the Crate in operation by a satisfied farmer.

My Gug

My Gug, a Cork based company founded by Fiona Kelleher and Kieran Coffey, has developed a micro-scale food waste treatment anaerobic digester system. MyGug are focused on reducing food waste in the small food business and education sectors, and their egg-shaped anaerobic digester converts food waste into a usable biogas and liquid biofertilizer. The biogas can be used directly by the home or business for cooking or heating and the liquid biofertilizer can be

used for growing food. MyGug is a circular solution that eliminates the negative environmental impacts associated with the disposal of food waste.

The 2023/2024 Agccelerator Programme

The Agccelerator Programme is currently in its 3rd year, with the 2023/2024 cohort set to pitch to a panel of investors on January 30th at an in-person event in the new AgTechUCD Innovation Centre at UCD Lyons Farm, Celbridge, Co. Kildare.



Pictured receiving the AIB & Yield Lab Agtech Startup award 2023 is Fiona Kelleher of My Gug. Also pictured are (From L-R), Liam Phelan, AIB Agri Adviser for Wicklow, Wexford, Carlow: David Bowles, Managing Partner, The Yield Lab Europe.



Pictured above are Kieran Coffey, Co-founder of My Gug with the Micro Anaerobic Digester (L) and an operational unit outside 8020 Burger in Clonakilty, Cork (R).

Eamonn O'Reilly, AIB Agri Advisor, discusses some of the options available to farmers who may be impacted by the reduced Nitrates Derogation limit.



Eamonn O'Reilly

2023 was a year of many changes and challenges for Irish farmers mainly weather, increased input prices, declining output prices and a new Common Agricultural Policy (CAP). As we entered into 2024, there is no doubt the ever-evolving nature of our industry will continue.

In March 2022, the Irish Government published Ireland's fifth Nitrates Action Programme which was given effect by the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2022. These regulations contain specific measures to protect surface waters and groundwater from nutrient pollution from agricultural sources. There were a number of measures added to and strengthened as part of the programme that are applicable for all farmers and not just farmers in derogation. These measures include the introduction of the chemical fertiliser sales register, cow banding, green cover on tillage ground, crude protein in feeds and use of low emission slurry spreading amongst others. With the above measures in place, Ireland remained one of a few EU countries that had a Nitrates Derogation, (individual farmers with permission could produce up to 250kgN/ha) however subject to mid-term review.

Nitrates Derogation

Under Ireland's fifth Nitrates Action Programme in 2022, Ireland had maintained its Nitrates Derogation up to 2026 but with conditions attached. One of these conditions included a mid-term review which stated that where water quality was poor or not improving that derogation would be reduced to 220kgN/ha in that area. In September 2023, the EU Commissioner ruled that Ireland's Nitrates Derogation would be cut to 220kgN/ha from January 2024. This is impacting over 2,150 dairy farmers who are producing >220kg N/ha and now need to adjust their farming system. There are also an additional 4,800 farmers who are availing of a derogation but are below the 220kgN/ha i.e. from >170 <220kgN/ha. However it is also fair to say that the reduction in the Nitrates Derogation limit is impacting all Agri sectors indirectly, given the increased demand for access to additional land.

There are a number of options available to the farmers that have been affected by the reduction in the Nitrates derogation limit, to get below the 220kgN/ha, but they all come at a cost. These could include buying / renting additional land, reducing cow numbers, contract rearing replacement heifers, selling surplus stock / cull cows from parlour, exporting slurry or regularising grass / maize bought on the stem.

In the case study below, I have looked at an example of a farmer who has been impacted by the reduction in the derogation limit and examined some of the options available to them and the potential impact each has on their business.

Case Study:

Dairy Farmer milking 130 cows, average production of 858,000 litres of milk or 6,600 litres per cow for the past three years. Farming 160 acres (64.8 ha) - 110 acres owned and renting an additional 50 acres. Currently they rear all their own replacements only with all male / surplus heifers stock sold as calves. Cull cows are sold directly from the parlour.

Table 1: 2022 Position – Farmer in derogation with derogation limit of 250kgN/ha

| Animal Type | Animal Numbers | Kg N | Total |
|--------------------------------------|----------------|------|--------|
| Cows | 130 | 89 | 11,570 |
| R2 | 30 | 57 | 1,710 |
| R1 | 30 | 24 | 720 |
| Total Organic Kg N Produced on farm. | | | 14,000 |
| Kg Organic N/ha | | | 216 |

Table 1 outlines the position of the farmer in 2022. The farmer was in derogation and farming at 216kg of N/ha.

Table 2: 2023 Position – Farmer in Derogation with 250kgN/ha

| Animal Type | Animal Numbers | Kg N | Total |
|--------------------------------------|----------------|------|--------|
| Cows | 130 | 106 | 13,780 |
| R2 | 30 | 57 | 1,710 |
| R1 | 30 | 24 | 720 |
| Total Organic Kg N Produced on farm. | | | 16,210 |
| Kg Organic N/ha | | | 250 |

Table 2 outlines the position of the farmer in 2023. The farmer has the same number of cows and is farming the same land area but has been impacted by the cow banding rules.

Table 3: Option 1 buy / rent an additional 22 acres of land

| Animal Type | Animal Numbers | Kg N | Total |
|--------------------------------------|----------------|------|---------|
| Cows | 130 | 106 | 13,780 |
| R2 | 30 | 57 | 1,710 |
| R1 | 30 | 24 | 720 |
| Total Organic Kg N Produced on farm. | | | 16,210 |
| Kg Organic N/ha | | | 220 |
| Financial Impact: | | | |
| Additional Rent cost of €300/acre | | | -€6,600 |
| Net cost | | | -€6,600 |

The current land market is very buoyant, with some impacted farmers seeking to purchase additional land over the past 12 months. The land rental market has been subject to very strong demand, with the reduction in the Nitrates Derogation limit a key contributing factor. There is an expectation that the land rental market will remain strong into 2024, and possibly some land-displacement from dry-stock farmers to nitrates derogation impacted farmers. In some areas land availability to rent may be a challenge. Quality, the condition of land and the term of the lease are other considerations. Most importantly, the economic return from the additional rented land must be calculated to ensure it is adding value to the enterprise.

Table 4: Option 2 reduce cow numbers by 15

| Animal Type | Animal Numbers | Kg N | Total |
|--------------------------------------|----------------|------|----------|
| Cows | 115 | 106 | 12,190 |
| R2 | 25 | 57 | 1,425 |
| R1 | 25 | 24 | 600 |
| Total Organic Kg N Produced on farm. | | | 14,215 |
| Kg Organic N/ha | | | 219 |
| Financial Impact: | | | |
| Less Profit per cow of €850 | | | -€12,750 |
| Heifer rearing savings | | | €3,000 |
| Net cost | | | -€9,750 |

Dairy expansion is reaching the peak of the expansion curve. Dairy cow numbers have increased from 1,104,800 in 2009 to 1,665,180 in June 2023 (IBCF, June 2023) a 51% increase in cow numbers. With such growth in cow numbers and herd size, some herds have kept some lower performing cows to reach peak cow numbers. In recent years, some dairy farmers have commenced greater selective culling of poorer performers and in some cases reducing cow numbers by more aggressive selective culling. Evidence to date suggests a minimal reduction in profitability by removing the bottom 5% of poor performers.

Table 5: Option 3 contract rear heifers from 6 months old to point of calving

| Animal Type | Animal Numbers | Kg N | Total |
|--------------------------------------|----------------|------|----------|
| Cows | 130 | 106 | 13,780 |
| R2 | 0 | 57 | 0 |
| R1 | 15 | 24 | 360 |
| Total Organic Kg N Produced on farm. | | | 14,140 |
| Kg Organic N/ha | | | 218 |
| Financial Impact: | | | |
| Contract rearing cost per day | | | -€29,565 |
| Heifer rearing savings | | | €13,500 |
| Labour savings | | | €4,500 |
| Net cost | | | -€11,565 |

This practice has become popular for expanding herds and utilised to maximise stocking rate on the grazing platform. Whilst expensive, it can be used as a means to reduce farm stocking rate and also has major labour-saving benefits. The contract rearer needs to be an excellent stock person and achieve agreed growth and fertility targets while TB risk as always, is in the background.

Other potential options include:

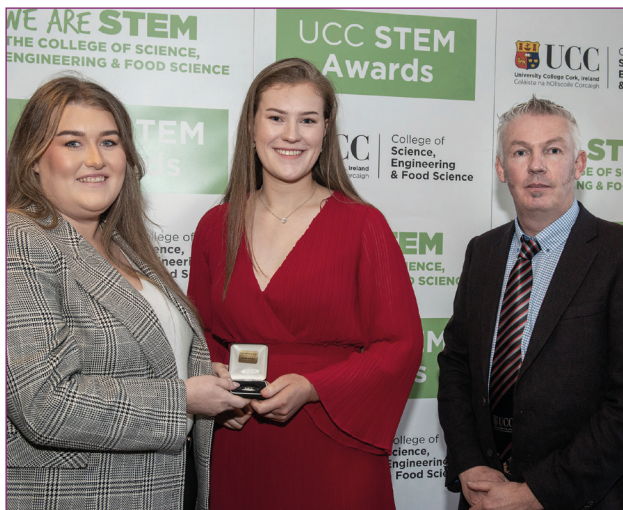
1. Selling surplus stock / cull cows from parlour - Many dairy farms have out-farms which in some cases are used for a heifer rearing sales enterprise or beef operation. In some cases, it may be beneficial to reduce / cease heifer rearing and / or the beef enterprise to reduce the overall farm stocking rate, the overall feed demand and as such the overall level of organic N produced on the farm. Finishing cull cows is a sub-enterprise on some farms, with many now seeking to sell cows immediately from the parlour as opposed to keeping for an additional 2-3 month of a finishing period.
2. Export slurry - Many farmers exported slurry to other lower stocked livestock farmers / tillage farmer holdings which was beneficial to both parties. However the N content of slurry has been reduced from 5kg/tonne to 2.4kg/tonne, this in essence doubles the amount of slurry needed to be exported to comply with the new limits, and makes this measure less effective. In addition, farmers using this measure are exporting valuable phosphorus (P) and potassium (K) to another farm.
3. Regularise grass / maize bought on the stem - Imported forage in the form of zero-grazed grass, silage cuts and maize has been a feature for many farms in nitrates derogation. Moving to an actual land rental agreement would have greater benefits for whole farm stocking rate, slurry utilisation and ultimately their nitrates position.

Key take home messages.

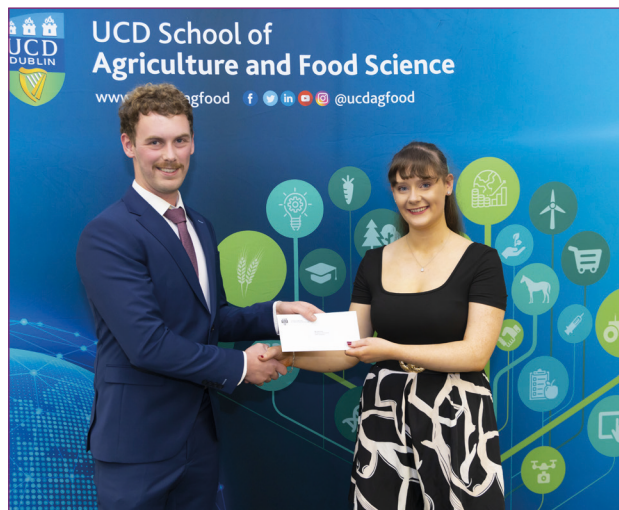
While we looked at a number of options to help impacted farmers achieve compliance with the new 220kgN/ha derogation limit, each of these options come as an additional cost to the business in the form of income foregone or increased costs.

We expect impacted farmers will use a combination of these options to support their business in achieving nitrates compliance. Each farm business is individual in terms of land base, land availability, enterprises and stocking rate and should review the options most suitable to them and understand the impact on their business. If any customer is concerned in relation to the impact of the Nitrates Derogation on their business, please come and talk to a member of our Agri Team and we can review and discuss your financial position.

We as farmers, and indeed the wider agri industry have a responsibility to protect water quality. It is within the best interests of the industry for water quality to improve and not deteriorate further.



AIB Agri Advisor Clodagh Forbes, presenting the AIB Best Work Placement Award to Amy Dunphy, Glencar, Co Kerry and Professor Frank Buckley, Professor of Agricultural Science and Academic Director of UCC's Bachelor of Agricultural Science at the UCC Agricultural Science awards ceremony.



AIB Agriculture, Food and Fisheries Sector Specialist, Donal Walsh presenting the AIB Best in Class award for UCD Dairy Business to Ciara Fox at the UCD School of Agriculture and Food Science awards ceremony 2022/2023.

AIB Agri Team

We have a dedicated Agri Advisor Team based around the country who support the needs of our farming customers. We are from farming backgrounds ourselves, so we have a practical understanding of the sector and bring a wealth of experience when looking at farm finance. Our team provide strong, objective farm financial and technical analysis on individual farm cases as needed.



Donal Whelton
Head of Agri Sector
M: 086 4146550
E: donal.j.whelton@aib.ie



Diarmuid Donnellan
Head of Sustainability for Agri, Food & Fisheries
M: 086 4621355
E: diarmuid.p.donnellan@aib.ie



Dónal Walsh
Agri Sector Team
M: 087 6901985
E: donal.x.walsh@aib.ie



John Farrell
Agri Sector Team
M: 086 0080305
E: john.a.farrell@aib.ie



Barry Hyland
AIB Agri Advisor for Cavan, Monaghan
M: 086 3831661
E: barry.l.hyland@aib.ie



Chris Nolan
AIB Agri Advisor for Kilkenny, Tipperary, Waterford
M: 086 0080272
E: chris.p.nolan@aib.ie



Clodagh Forbes
AIB Agri Specialist
M: 087 4756741
E: clodagh.x.forbes@aib.ie



Eamonn O'Reilly
AIB Agri Advisor for Westmeath, Longford
M: 087 2517806
E: eamonn.m.o'reilly@aib.ie



Kelley Lyons
AIB Agri Advisor for Clare, Limerick
M: 087 3523610
E: kelley.m.lyons@aib.ie



Liam Phelan
AIB Agri Advisor for Wicklow, Wexford, Carlow
M: 086 0231700
E: liam.p.phelan@aib.ie



Michael Murphy
AIB Agri Advisor for Cork, Waterford
M: 086 7805216
E: michael.a.murphy@aib.ie



Mick Conlon
AIB Agri Advisor for Meath, Laois, Offaly
M: 087 1872346
E: michael.j.conlon@aib.ie



Nicola Fetherstone
AIB Agri Advisor for Sligo, Leitrim, Roscommon, Galway, Mayo
M: 087 6578335
E: nicola.j.fetherstone@aib.ie



Patrick Butterly
AIB Agri Advisor for Donegal, Louth, Dublin, Kildare
M: 086 3831576
E: patrick.p.butterly@aib.ie



Shane McCarthy
Shane McCarthy
AIB Agri Advisor for Cork, Kerry
M: 086 0081317
E: shane.p.mccarthy@aib.ie



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