Outlook 2025

Situation and Outlook for Irish Agriculture

December 3rd 2024

Agricultural Economics and Farm Surveys Department
Teagasc

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Outlook 2025
Economic Prospects for Agriculture

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Summary Review of 2024

Global Economy
- Inflation rates moderated
- Global economic growth slowed
- Rising protectionism and fracturing of international trade relations

Average NFS Farm Income 2024e vs 2023

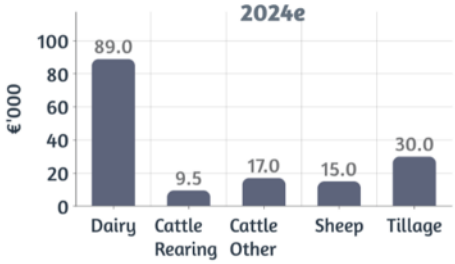
Margins (relative to 2023)

- Dairy: up substantially, due to higher milk prices
- Beef: up for rearing and finishing, due to higher cattle prices
- Sheep: up, due with higher lamb prices and lower costs
- Tillage: up due to lower costs
- Pigs: up slightly, due to lower costs

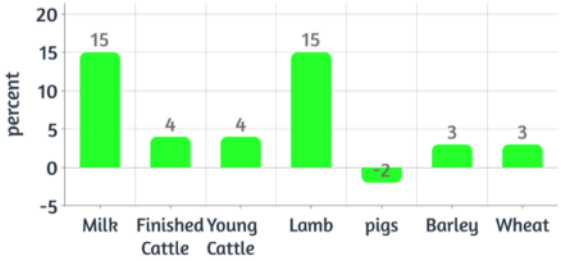
Support Payments

- Broadly in line with 2023
- Scheme participation dependent
- Some additional Tillage measures

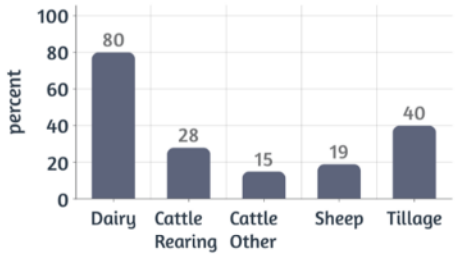
Average Family Farm Income 2024e



% change Farm Output Prices 2024e vs 2023



% change Family Farm Income 2024e vs 2023



Input Costs
Down slightly in aggregate, with lower prices for fertiliser, feed and electricity but higher feed and fertiliser volumes

Fertiliser Prices
Down 30% for grassland and 40% for tillage vs 2023

Feed Prices
Down 14% relative to 2023

Oil Prices
Down relative to 2023, averaging US$80 in 2024 (down 3% in euro terms)

Average Annual Exchange Rate in 2024e
$ 1.08 / Euro
£ 0.85 / Euro

Eurozone inflation
Returned to lower levels in 2024

Irish Unemployment
4% in 2024

Weather Conditions
Unfavourable, with an adverse impact on production

Summary of Prospects for 2025

Global Economy
- Global economic growth to remain modest
- Further drop in inflation
- Uncertain geopolitical outlook

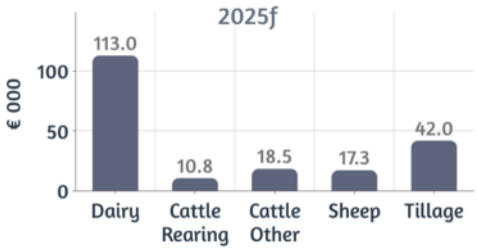
Average NFS Farm Income 2025f vs 2024e

Margins in 2025 (relative to 2024)

- **Dairy:** up, due to higher milk prices & higher milk volume
- **Beef:** up for rearing and finishing, higher cattle prices & lower costs
- **Sheep:** up slightly, due to cost savings
- **Tillage:** up, but contingent on normal cereal yields
- **Pigs:** down appreciably, due to lower pig prices

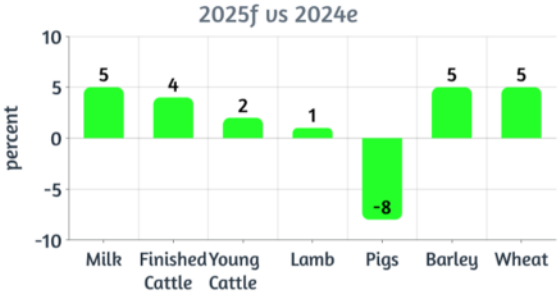
Support Payments
- Broadly in line with 2024
- Scheme participation dependent

Average Family Farm Income



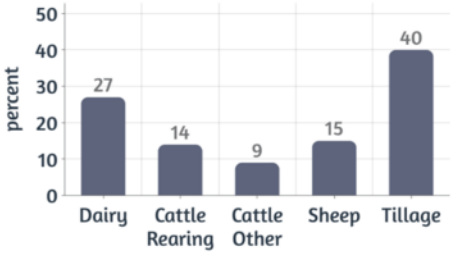
% change in Farm Output Prices

2025f vs 2024e



% change Family Farm Income

2025f vs 2024e



Input Costs
Unchanged in aggregate

Fertiliser Prices
Down slightly for both grassland and tillage

Feed Prices
Unchanged on the 2024 level

Oil Prices
Expected to be down 3% in euro terms in 2025 (average US$76)

Average Annual Exchange Rate
$ 1.05/ Euro
£ 0.85/ Euro

Eurozone inflation
To continue to fall

Irish Unemployment
to remain stable at 4%

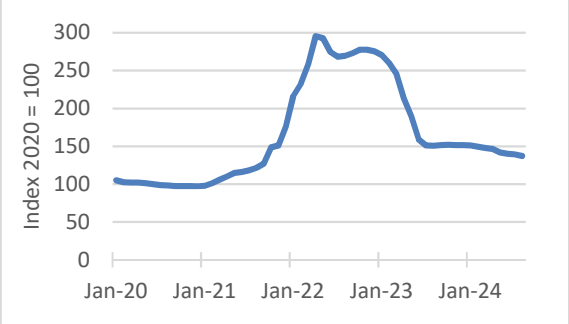
Weather conditions
Normal weather assumed to lead to better production conditions

Overall Sector: Summary Review of 2024

Output Value	Input Spend	Support Payments	Income
↑ Up	↓ Down	→ Stable	↑ Up

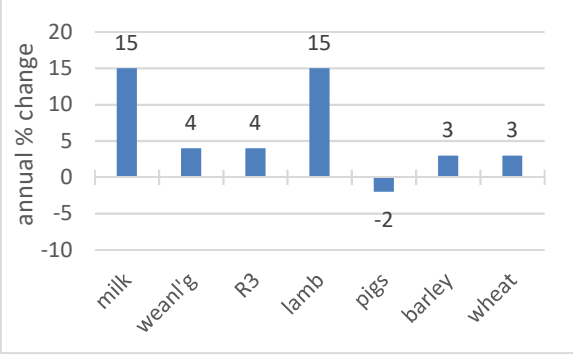
- Grass growth for most of 2024 was well below the 5 year average due to unusually wet conditions in Q1 and Q2 and unusually dry conditions and low sunshine levels in Q3. However, production conditions improved in Q4.
- The high production cost environment of recent years persisted during 2024, despite price reductions for some key inputs, such as fertiliser and concentrate feed.
- Averaged over the year, there was a 15 percent increase in milk prices in 2024, with VAT inclusive prices averaging close to 50 cent per litre (actual fat and protein). Irish milk production is estimated to have declined by 2 percent in 2024.
- An improvement in the milk price helped farms to contend with the continuing high cost environment in 2024. The average dairy net margin improved by 84 percent compared to 2023, to an estimated 13.3 cent per litre.
- Prices for finished cattle increased by 4 percent in 2024. Weanling prices and store cattle prices also increased by an average of 4 percent relative to the 2023 levels.
- The average gross margin on the cattle finishing enterprise increased by 13 percent in 2024. The average gross margin on the single suckling enterprise increased by 16 percent in 2024.
- The average net margin on the cattle finishing enterprise increased to €131 per hectare in 2024. The average net margin on the single suckling enterprise increased to €78 in 2024.
- Declines in the costs of production for the sheep sector were coupled with higher marketed output values in 2024. This resulted in higher margins on the average mid-season lowland lamb enterprise. Total direct costs of production were down 8 percent on average.
- The gross margin for Irish mid-season lowland lamb producers in 2024 is estimated to have increased by just over 21 percent. These margins were supported by the receipt of payments from the Sheep Improvement Scheme (SIS).
- In 2024, the outturn for yields for Ireland's major cereal crops were mixed, compared to 2023. Cereal prices at harvest in Ireland in 2024 were up slightly on the 2023 level, due to movement in the international stocks to use ratios.
- Direct costs for cereal production decreased in 2024, due mainly to a decrease in fertiliser and seed costs. Gross and net margins in 2024 were higher than in 2023 for the major cereal crops.
- Pig prices fell marginally to reach an average of 220 cent per kg in 2024, a 2 percent decrease on the 2023 level.
- On average pig production costs were stable in 2024 (lower feed cost, higher non-feed costs), following the large increase in 2022. Irish pig production increased by 3 percent in 2024, following the substantial breeding herd reduction of 9 percent in 2023.
- The key pig production profitability measure, margin over feed, improved significantly reaching 86c per kg dwt in 2024, up from 69c in 2023, maintaining the current phase of profitability in Irish pig production.

Figure E1: Monthly Price Index of Fertiliser in Ireland for 2018 to 2024



Source: Central Statistics Office (Various Years)

Figure E2: Change in Output Prices 2024 vs 2023



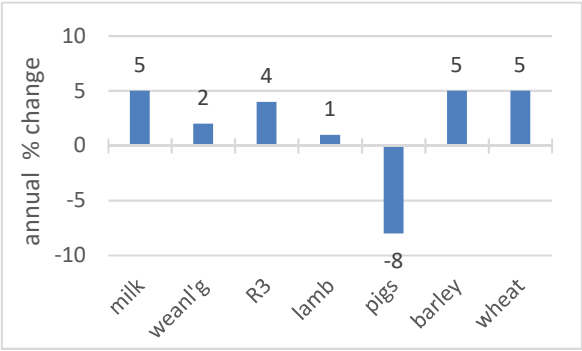
Source: Authors' estimates

Overall Sector: Outlook for 2025

Output Value	Input Spend	Support Payments	Income
Up	Down	Stable	Up

- The outlook for Irish agriculture in 2025 is conditional on a normal weather assumption.
- While little price movement is forecast in key inputs in 2025, normal weather would allow scope for cost savings through lower feed use in grassland systems.
- Fertiliser prices are forecast to fall somewhat on 2024 levels, with limited change in usage levels anticipated.
- For 2025 as a whole, feed prices are forecast to remain very similar to the 2024 level.
- Fuel prices are also forecast to remain stable in 2025.
- The outlook for the global dairy market is generally positive for 2025, with average Irish milk prices projected to improve 5 percent on the 2024 level.
- An average Irish milk price of about 52.2 cent per litre (actual constituents vat incl.) is forecast. Despite some input cost reductions, production expenditure will remain high.
- Following a decline in 2024, Irish milk production is forecast to increase by 4 percent in 2025, with improved yields anticipated, assuming a normal season for grass growth.
- In 2025 the average dairy net margin is forecast to improve by 29 percent compared to 2024, to 17 cent per litre.
- Finished cattle prices and store cattle prices are forecast to be four percent higher in 2025 relative to 2024. Weanling prices are forecast to be 2 percent higher in 2025.
- The average gross margin on the cattle finishing enterprise is forecast to increase by 8 percent to €816 per hectare in 2025.
- The average gross margin on the single suckling enterprise is forecast to increase by 10 percent to €639 per hectare in 2025.
- While 2025 lamb prices are forecast to remain close to the high levels observed during 2024, a slight easing in costs, will result in higher margins on sheep farms.
- Sheep gross margins are forecast to increase by 16 percent on average, to €967 per hectare.
- Payments to farmers participating in the Sheep Improvement Scheme will continue to support the value of gross output and margins per hectare on sheep farms in 2025.
- EU winter planted area figures for the 2025 harvest are forecast to be higher than the 2024 harvest levels. Irish cereal prices at harvest in 2025 will be highly dependent on supply and demand conditions globally.
- Based on a forecast of tight international stock to use ratios for cereals in 2025, Irish cereal prices are forecast to increase very slightly relative to harvest 2024.
- Overall, costs on cereal farms look set to be on a par with 2024. With normal yields forecast, and a slight increase in prices, margins for all crops in 2025 will increase on the 2024 levels.
- In 2025, the Irish pig price is forecast to fall by 8 percent on the 2024 level, to a forecast 202 cent per kg dead weight.
- Little movement is forecast in the annualised composite pig feed price, with just a 2 percent decline relative to 2024 anticipated.
- This represents a decrease in the cost of feed per kg dwt., which is forecast to be 130 cent in 2025 compared with 134 cent in 2024.
- With Irish pig production set to remain stable in 2025, the Irish pig sector will experience a reduction in margins but will still maintain a moderate level of profitability.

Figure E3: Forecast Change in Output Prices 2025 vs 2024e



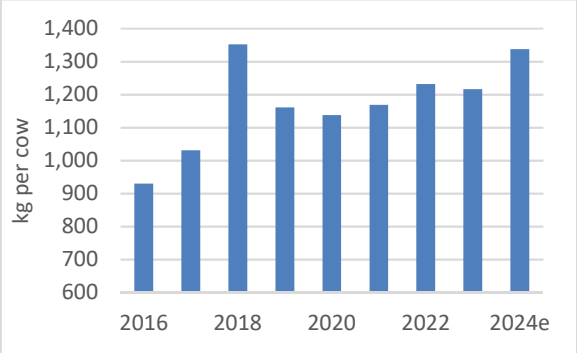
Source: Authors' forecasts

Dairy: Review of 2024

Output Value	Input Spend	Income
↑ Up	→ Stable	↑ Up

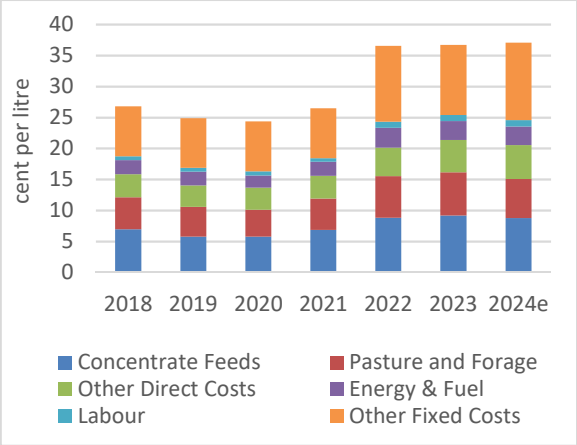
- The value of output increased in the dairy sector in 2024, but production costs remained high.
- Modest milk production growth has been observed across the main dairy export regions in 2024. Weak supply growth in recent years has helped to support higher dairy commodity prices, albeit in the face of a mixed demand picture.
- Butter prices rose dramatically and given their importance in the Irish dairy product mix, Irish milk prices increased to above the EU average.
- The annual average Irish milk price for 2024 is estimated to have increased by 15 percent to 49.7 cent per litre (actual constituents vat incl.).
- In aggregate, Irish milk production is estimated to have declined slightly in 2024 (down 2 percent), with grass production below normal due to adverse weather, with particularly wet conditions in H1 and drier conditions in H2 2024.
- Dairy cow numbers decreased by 1.4 percent to 1.624 m in June 2024, compared to June 2023.
- On a per cow basis, dairy feed usage is estimated to have increased by 10 percent in 2024 to about 1,338 kg.
- Due to a decrease in concentrate feed prices, feed expenditure is estimated to have decreased in 2024 by 5 percent on a per hectare basis and 4 percent on a per litre basis.
- Fertiliser prices continued to decline in 2024, but remained above normal levels. As a result, pasture and forage costs fell on average by about 11 percent year-on-year. Fertiliser usage increased after a number of years of decline.
- Despite reductions in some input cost items in 2024, it is estimated that total production costs increased slightly relative to 2023. Total costs in 2024 are estimated to be approximately 37.3 cent per litre.
- The recovery in milk prices, in a high cost environment, resulted in an estimated net margin of 13.3 cent per litre in 2024. This represents an 84 percent increase on 2023.
- With a rise in milk prices, but with production per hectare down in 2024, it is estimated that the net margin per hectare increased by approximately 71 percent to a national average of €1,578.

Figure E4: Irish Dairy Cow feed use 2016 to 2024e



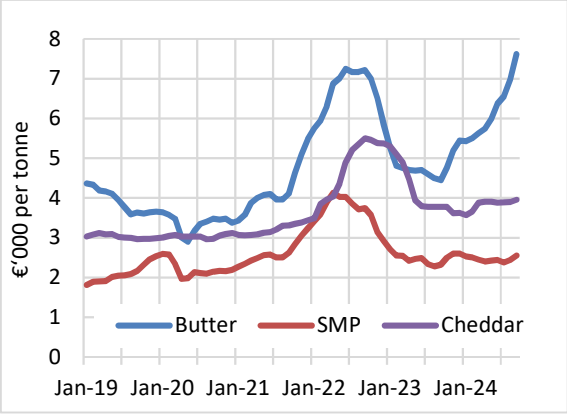
Source: NFS data with 2024 Authors' estimate
Note: e = estimate

Figure E5: Average Total Milk Production Costs (cent per litre) in Ireland: 2018 to 2024e



Source: Teagasc National Farm Survey and Authors' Estimate

Figure E6: Monthly European Dairy Product Prices Jan 2019 to Sept 2024



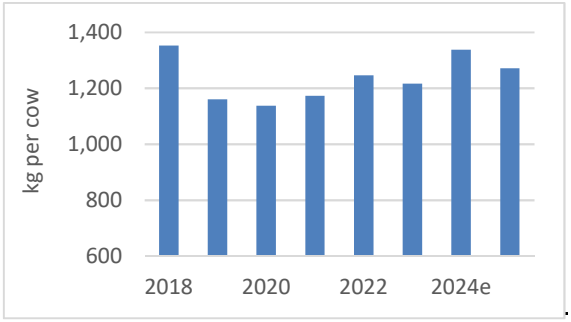
Source: MMO

Dairy: Outlook for 2025

Output Value	Input Spend	Income
↑ Up	↓ Down	↑ Up

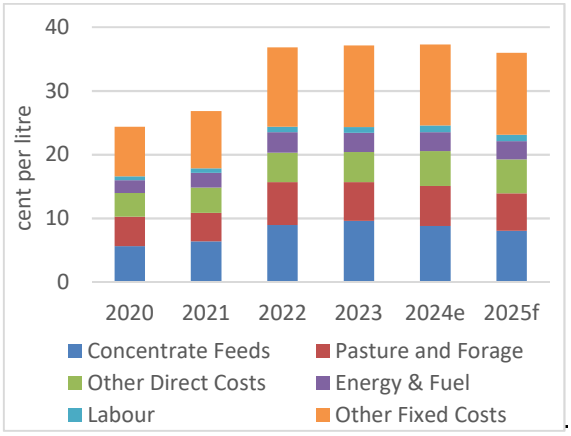
- The dairy market situation in 2025 will partially depend on factors which are difficult to anticipate, such as the impact of potential La Nina weather conditions in the Southern Pacific and geopolitical considerations, such as the potential imposition of US trade tariffs. Nevertheless the short term outlook is positive, given that dairy commodity prices have been moving to higher levels in recent months.
- The annual average Irish milk price in 2025 is forecast to improve for the year as a whole. This would represent an annual average milk price of approximately 52.2 cent per litre (actual constituents vat incl.).
- Some further easing in production costs is expected across some cost items in 2025 e.g. fertiliser.
- Assuming improved weather conditions in 2025, feed use per head on Irish dairy farms is expected to decline. Feed prices are also expected to remain stable compared to 2024.
- Despite global uncertainty, oil prices are expected to fall further in 2024, with fuel prices forecast to remain unchanged year-on-year.
- The outworking of the recent changes in nitrate regulations is likely to be complex and have some influence on national production. However, following a decline in production in 2024, recovery is anticipated for 2025 with an improvement in milk yields.
- With output value per hectare expected to increase by 4 percent in 2025, and allowing for a slight fall in costs, improved margins are anticipated. The forecast average net margin per hectare in 2025 is €1,825, an increase of 16 percent relative to 2024.
- On a per litre basis, the average net margin is forecast to increase by 10 percent in 2025 relative to the 2024 level, to an average of 14.6 cent per litre.
- Overall, a continuation in improved income levels is envisaged on Irish dairy farms in 2025. Although production costs look set to remain elevated, the improved farmgate milk price will boost output value.

Figure E7: Irish Dairy Cow feed use: 2018 to 2025f



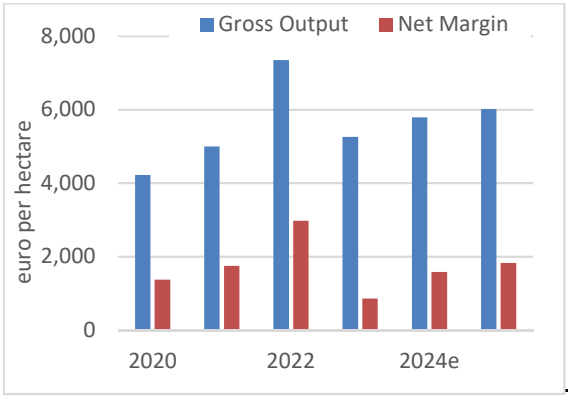
Source: NFS data with 2024 Authors' estimate and 2025 forecast.
Note: e = estimate. f= forecast

Figure E8: Average Total Milk Production Costs (cent per litre) in Ireland: 2020 to 2025f



Source: Teagasc National Farm Survey, Authors' Estimate for 2024 and Authors' Forecast for 2025

Figure E9: Dairy Gross Output and Net Margin 2020 to 2025f



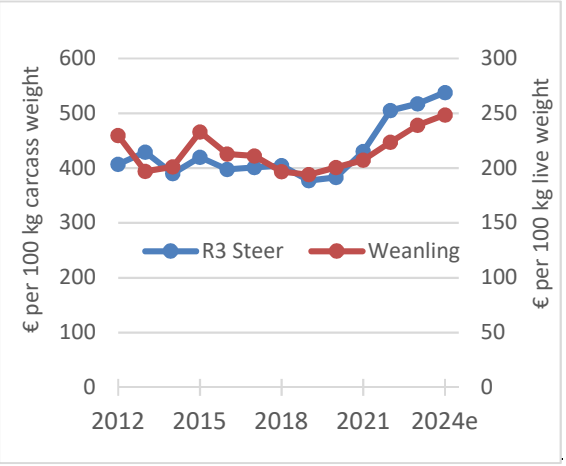
Source: Teagasc National Farm Survey, Authors' Estimates for 2024 and Authors' Forecast for 2025

Cattle: Review of 2024

Output Value	Input Spend	Income
↑ Up	↓ Down	↑ Up

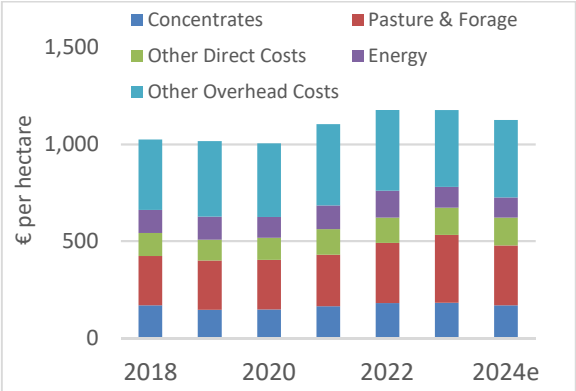
- In 2024, average prices for prime finished cattle were 4 percent higher than the average levels in 2023.
- In 2024, average prices for younger cattle were 4 percent higher relative to 2023, leading to an increase in output value on Single Suckling enterprises.
- The output value on the average Cattle Finishing enterprise increased in 2024 despite lower volumes of prime beef production.
- The Suckler Cow Efficiency Programme (SCEP) and National Beef Welfare Scheme (NBWS) schemes contributed positively to gross output on Single Suckling farms.
- Decreases in fertiliser prices have contributed towards lower direct input expenditures on cattle enterprises.
- In 2024, the average gross margin per hectare earned on Single Suckling enterprises is estimated to be €582 per hectare, a 16 percent increase on the 2023 level.
- In 2024, the average gross margin per hectare earned on Cattle Finishing enterprises is estimated to be €753 per hectare, a 13 percent increase on the 2023 level.

Figure E10: Finished Cattle and Young Cattle Prices 2012-2024e



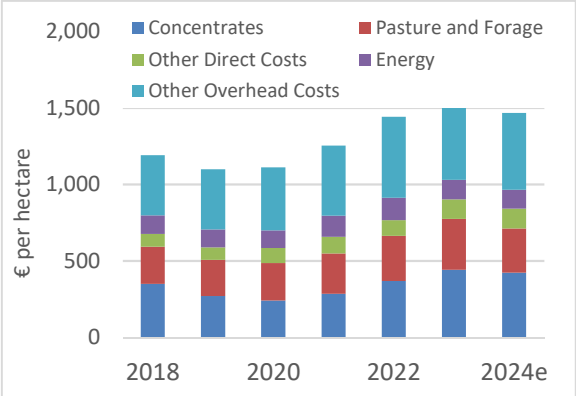
Source: 2012-2023 DG Agri, CSO, 2024 Authors' estimate

Figure E11: Costs of Production Single Suckling (SS) 2018-2024e



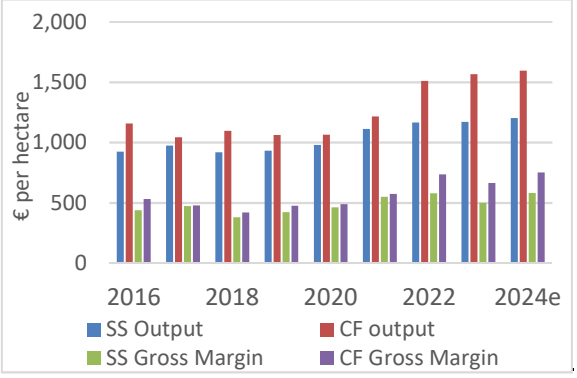
Source: 2018-2023 Teagasc NFS, 2024 Authors' Estimate

Figure E12: Costs of Production Cattle Finishing (CF) 2018 -2024e



Source: 2018-2023 Teagasc NFS, 2024 Authors' Estimate

Figure E13: Output and Gross Margin 2016-2024e



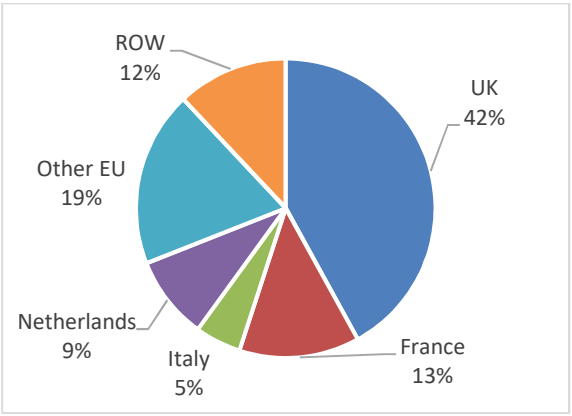
Source: 2018-2023 Teagasc NFS, 2024 Authors' Estimate

Cattle: Outlook for 2025

Output Value	Input Spend	Income
↑ Up	↓ Down	↑ Up

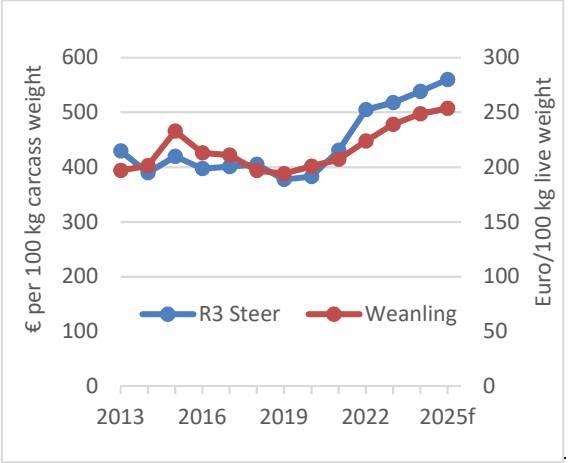
- EU beef supply is forecast to decline in 2025.
- UK beef supply is forecast to decline in 2025.
- Average Irish finished cattle prices and store cattle prices in 2025 are forecast to be 4 percent higher relative to 2024.
- Average weanling prices in 2025 are forecast to be 2 percent higher relative to 2024.
- Input expenditure in 2025 is forecast to decrease on 2024 levels.
- Direct costs of production on Single Suckling enterprises are forecast to decrease by approximately 1 percent in 2025.
- Direct costs of production on Cattle Finishing enterprises are forecast to decrease by approximately 3 percent in 2025.
- In 2025, the average gross margin per hectare on Single Suckling enterprises is forecast to increase by 10 percent to €639 per hectare.
- In 2025, the average gross margin per hectare on Cattle Finishing enterprises is forecast to increase by 8 percent to approximately €816 per hectare.
- The Suckler Carbon Efficiency Programme, the ACRES programme and other policy supports will continue to contribute to farm income on cattle farms in 2025.

Figure E14: Irish Beef Exports by Volume in 2024



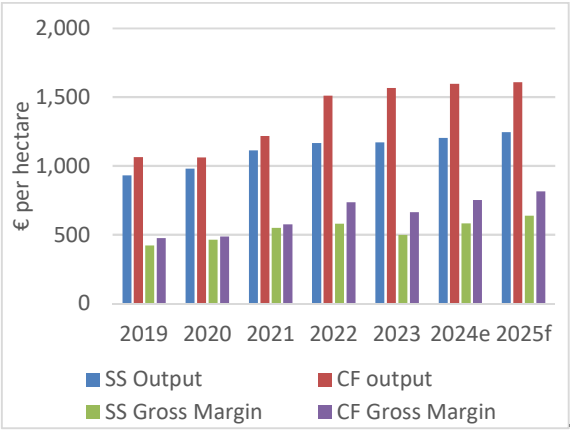
Source: Eurostat COMEXT (year through August)

Figure E15: Irish Cattle prices 2013-2025f



Source: Authors' forecast

Figure E16: Single Suckling (SS) and Cattle Finishing (CF) Output and Gross Margin 2019-2025f



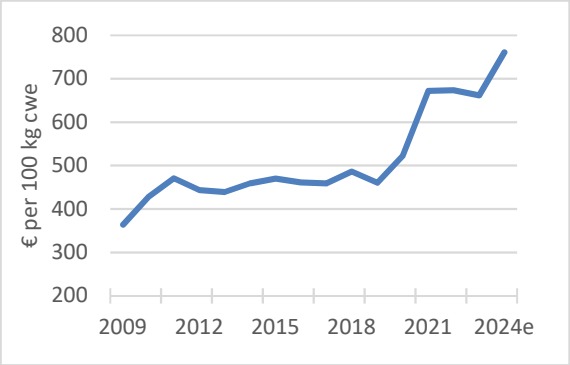
Source: 2019 to 2023 Teagasc NFS, 2024 Authors' estimate, 2025 Authors' forecast

Sheep: Review of 2024

Output Value	Input Spend	Income
↑ Up	↓ Down	↑ Up

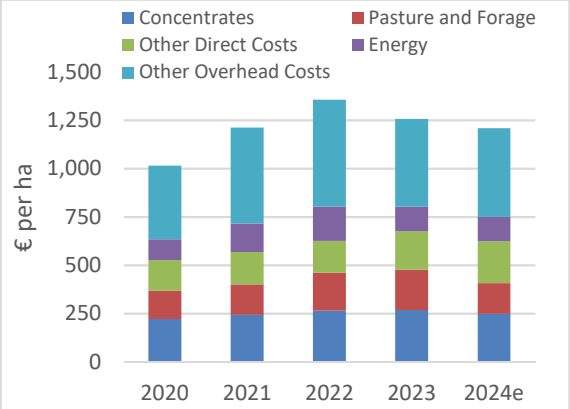
- EU sheep meat production 2024 has continued to decline, due to a structural decrease in the sheep EU flock.
- With high EU lamb prices leading to a loss in competitiveness on international markets, EU sheep meat exports have declined. For H1 2024 the decline was 14 percent. Continued high EU lamb prices and tight EU domestic supply are expected to continue.
- In H1 2024, EU sheep meat imports declined, despite the high EU domestic price level. However, it is estimated that, for the year as a whole, EU imports will grow by 2 percent.
- Prices on the European lamb market in 2024 are higher than in 2023 and are well ahead of the 5 year average price level. Prices for heavy lamb, at the time of writing, are on average 15 percent higher than in 2023.
- The average lamb price in Ireland for 2024 will be higher than in 2023. The year on year price change is estimated at 15 percent.
- Total direct costs of production for Irish mid-season lowland lamb enterprises are estimated to have decreased, down by 8 percent in 2024.
- Overhead costs of production are estimated to have increased by 1 percent.
- Gross margins per hectare for Irish mid-season lowland lamb producers are estimated to have increased in 2024 by 21 percent.
- The receipt of Sheep Improvement Scheme payments, under CAP Pillar II, boosted margins on sheep farms in 2024.
- In 2024 the average gross margin on mid-season lowland enterprises is estimated to be €831 per hectare.

Figure E17: Irish Lamb price 2009 – 2023 with estimate for 2024



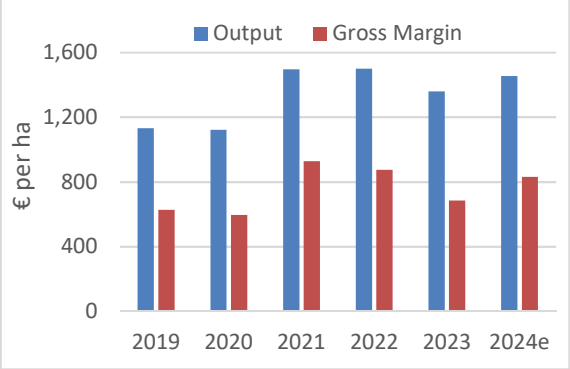
Source: DG AGRI and Authors' Estimate 2024

Figure E18: Average Sheep production costs 2020 - 2023 and estimate for 2024



Source: Teagasc NFS 2020 - 2023, Authors' Estimate for 2024

Figure E19: Average Sheep output 2019-2023 & margin estimate for 2024



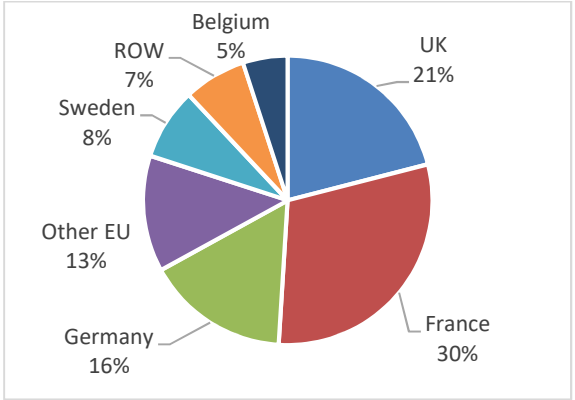
Source: Teagasc NFS 2019-2023, 2024 Authors' Estimate

Sheep: Outlook for 2025

Output Value	Input Spend	Income
↑ Up	↓ Down	↑ Up

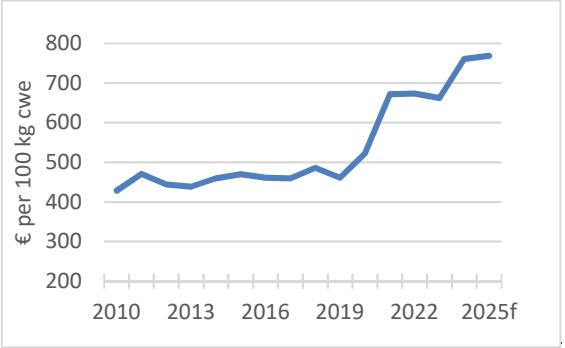
- The outlook for Irish and EU lamb prices for 2025 is positive, prices are forecast to remain at the high levels observed in 2024. Continued high EU lamb prices and tight EU domestic supply are expected to continue.
- Global sheep meat prices are forecast to remain high. High prices in Irish export markets (UK and EU) will continue to support Irish prices in 2025.
- Sheep feed expenditure is forecast to decrease by circa 7 percent. Concentrate prices are forecast to remain similar to 2024, while feed use is forecast to revert to more normal levels.
- Fertiliser prices are forecast to decline slightly on the 2024 level. With fertiliser usage returning to more normal use levels, pasture and forage costs in 2025 are expected to decline by circa 9 percent.
- With lower costs of production continuing into 2025, and the lamb price outlook forecast to remain at current high levels, gross margins for the mid-season lowland lamb enterprises in 2025 are forecast to increase by 8 percent.
- The recently announced additional payments and measures forthcoming under the 'new' Sheep Welfare Scheme will provide a further boost at the individual farm level in 2025 and support margins for lowland lamb producers.
- In 2025, the average gross margin per hectare earned by Irish mid-season lowland lamb enterprises is forecast to increase to €967.

Figure E20: Irish Sheep and Lamb Meat Exports (Volume) by Destination in 2024



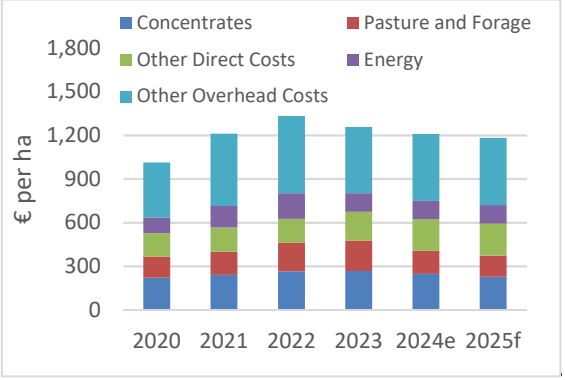
Source: Eurostat COMEXT (Volume, year to end September 2024)

Figure E21: Irish Lamb price, with forecast for 2025



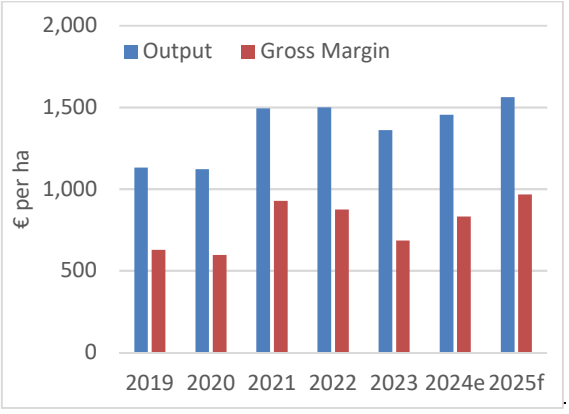
Source: DG Agri 2010-2023; Authors' Estimate 2024; Authors' Forecast 2025

Figure E22: Sheep production costs, with forecast for 2025



Source: Teagasc NFS 2020-2023, Authors' Estimate 2024, Authors' Forecast 2025

Figure E23: Average Sheep output & margins, with forecast for 2025



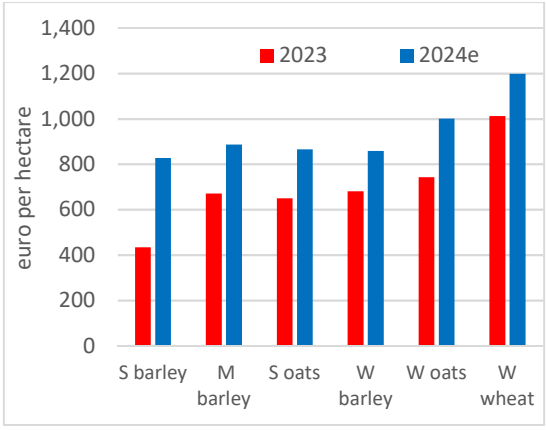
Source: Teagasc NFS 2019-2023, Authors' Estimate 2024, Authors' Forecast 2025

Cereals: Review of 2024

Output Value	Input Spend	Net Margin per ha
↑ Up	↓ Down	↑ Up

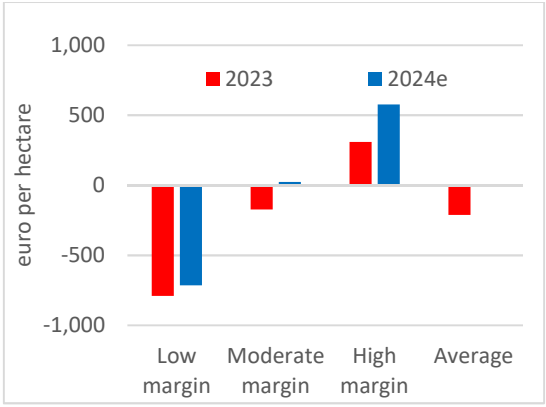
- Despite an increase in total grains production on the international balance sheet in 2024/25, the relatively low ending stocks coming into the marketing year, were sufficient to leave supply relatively tight for the marketing year.
- These supply factors, coupled with an increase in demand, led to a decline in the stocks to use ratio across all grains on the forecast international balance sheet for 2024/25, and a slight increase in cereal prices at harvest 2024, with on account Irish harvest prices increasing marginally by 3 percent.
- There was mixed performance in relation to yields of the main cereal crops in Ireland in 2024. Irish spring barley yields increased by 16 percent on a per hectare basis, while winter wheat yields decreased by 7 percent per hectare, compared to 2023. It is however important to note that there was a significant decrease in winter planting in the 2024 harvest year due to weather conditions at planting.
- Direct costs of production on Irish cereal farms decreased in 2024 compared to 2023. The largest decreases were for fertiliser and seed related costs, at 40 percent and 5 percent respectively.
- On average direct costs of production decreased by 15 percent in 2024 on a per crop basis. Overhead costs allocated to cereal enterprises on tillage farms increased marginally in 2024.
- The net effect of the changes in output value and input costs was an increase in the average gross margin for cereal crops in 2024. The gross margin per hectare for spring barley, winter barley and winter wheat increased by €400, €180 and €180 respectively.
- There remains a wide variation in terms of the economic performance of individual cereal farms nationally. It is estimated that the average cereal enterprise on specialist tillage farms will struggle to return a positive market based net margin in 2024.
- But there is a range around this average figure, with the bottom one third of farms earning a negative market based net margin of approximately minus €700, while the top one third of farms earned approximately €575 per hectare.
- Overall, there was a €200 per hectare increase in the average market based net margin in 2024, relative to 2023. This can be attributed to the slight increase in cereal price, and mixed yield outturns which were more than outweighed by a decrease in direct costs.

Figure E24: Gross Margin for Main Cereal Crops in 2023 and 2024e



Source: Teagasc, National Farm Survey Data & Author's Estimate for 2024

Figure E25: Cereal Enterprise Net Margin on Specialist Tillage Farms in 2023 and 2024e



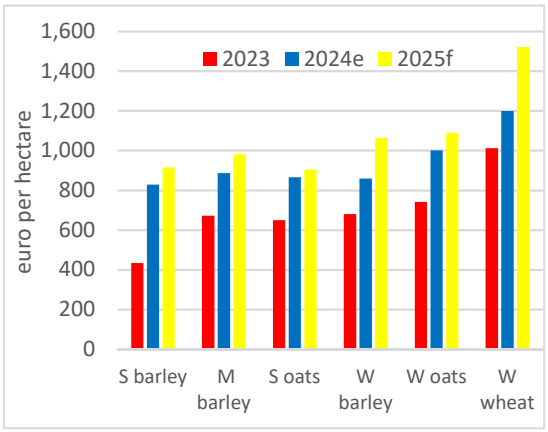
Source: Teagasc, National Farm Survey Data & Author's Estimates for 2024

Cereals: Outlook for 2025

Output Value	Input Spend	Net Margin per ha
Up	Down	Up

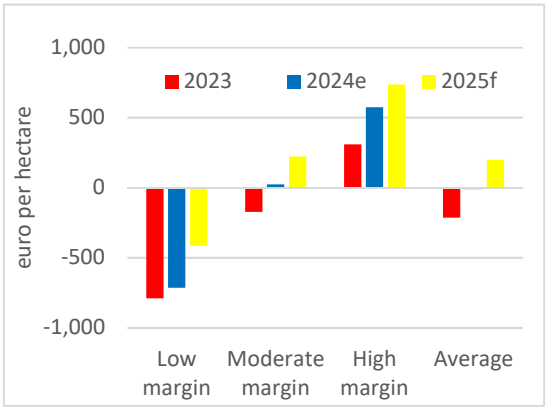
- EU grain production decreased in 2024. In terms of market supply and demand, there appears to be some upward momentum in forward prices associated with a forecast reduction in stocks to use ratios internationally for the end of the 2024/25 marketing year.
- Current (November 2024) futures markets indicate that 2025 harvest prices will be marginally higher than those that prevailed at harvest 2024, by about 5 percent.
- This slight upward movement in prices can be explained by the ending stock to use ratio coming into the next production year (harvest 2025).
- A return to 5 year trend yields in Ireland in 2025 would mean a yield increase for most cereal crops in 2025.
- Direct costs of production on cereal farms are expected to be relatively stable, with limited movement in key inputs, such as fertiliser, seed and fuel expected, on a per hectare basis.
- The net effect of the forecast changes in output value and input expenditure mean that 2025 gross margins for cereals are forecast to increase over 2024 levels.
- The average gross margin for spring barley in 2025 is forecast to increase by approximately €85 per hectare compared to 2024. The average winter barley and winter wheat gross margins are forecast to increase by about €200 and €320 per hectare respectively in 2025.
- The cereal enterprise market based net margin on specialist tillage farms in 2025 is forecast to increase on the 2024 level. It is forecast that the average specialist tillage farm will return approximately €200 in market based net margin in 2025.
- It is forecast that approximately 30 percent of specialist tillage farmers will return a negative market based net margin in 2025.

Figure E26: Gross Margin for Main Cereal Crops (2024 estimate & 2025 forecast)



Source: Teagasc, National Farm Survey Data & Author's Estimate for 2024 & Forecast for 2025

Figure E27: Cereal Enterprise Net Margin on Specialist Tillage Farms, 2025 forecast



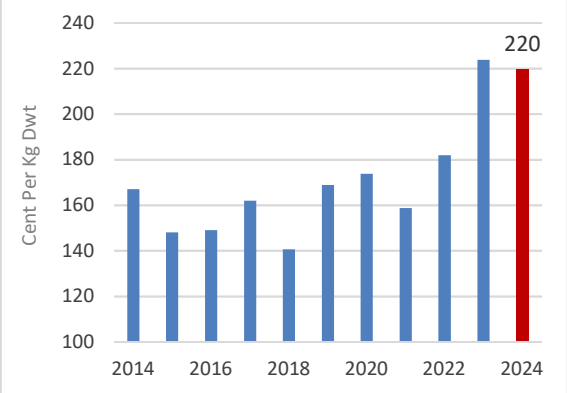
Source: Teagasc, National Farm Survey Data & Author's Estimate for 2024 & Forecast for 2025

Pigs: Review of 2024

Output Value	Input Spend	Income
Down	Down	Up

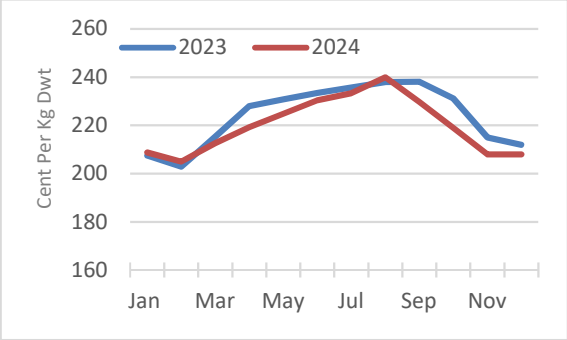
- The composite feed price per tonne entered 2024 at a high level (€393 per tonne) due to the continuation of the high feed ingredient prices in the aftermath of the invasion of Ukraine
- The annual average feed cost in 2024 is estimated to be 134 cent per kg dwt. This is lower than the 2023 figure (155 cent), but equal to the five year average (2020-24) of 134.5 cent per kg.
- At 220 cent per kg, the 2024 Irish pig price was marginally lower than the 224 cent per kg average for 2023. This reduction is primarily attributable to lack-lustre EU export volumes.
- The estimated 2024 average pig price of 220 cent per kg is significantly higher than the five year average (2020-2024) of 192 cent per kg.
- The 2024 'Margin Over Feed' (MOF) per kg is estimated to be 86 cent per kg dwt. This is moderately higher (+25 percent) than the 69 cent per kg dwt achieved in 2023.
- The volume of Irish pigs slaughtered increased to 3.58m in 2024, which was an increase of 100,000 pigs (2.8 percent) on the 2023 level and similar to the 2015 level. In 2024, of the 3.58m pigs of ROI origin that were slaughtered, 0.403m were slaughtered in Northern Ireland. This is an increase of 50,000 head, which reverses the decline of recent years
- In 2024, pig slaughter volumes in the principal European pig producing countries decreased by 4.3 percent when compared to 2023. The countries with the largest percentage decrease were Denmark (2.9% percent) and France (1.1 percent).
- Exports of Irish pigmeat in 2024 increased by 2.3 percent (Jan to Sept.) when compared to 2023. Irish pigmeat exports to China increased in volume by 1.4 percent, but this represents a 56 percent decline compared to 2021.
- EU pigmeat exports to China fell (12 percent) in volume terms in 2024 compared to 2023 (542,000 versus 615,000 tonnes).

Figure E28: Irish Compound Pig Feed Price 2014 to 2024e



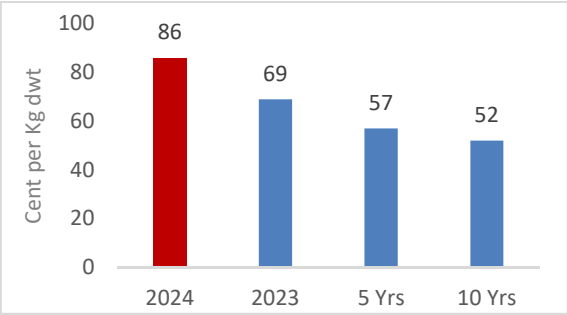
Source: Teagasc Pig Development Department, estimate for 2024

Figure E29: Monthly Irish Pig Prices 2023 – 2024e



Source: Teagasc Pig Development Department, estimate for 2024

Figure E30: Margin Over Feed: Historical Comparison with 2024e



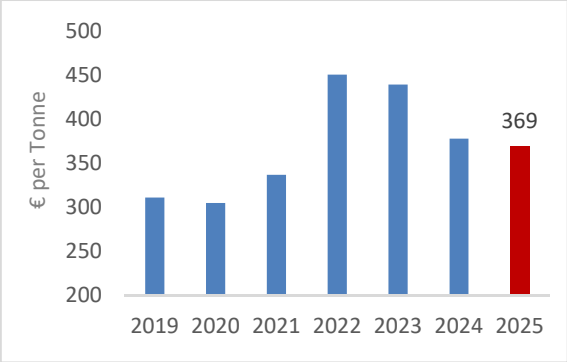
Source: Teagasc Pig Development Department, estimate for 2024

Pigs: Outlook for 2025

Output Value	Input Spend	Income
Down	Down	Down marginally

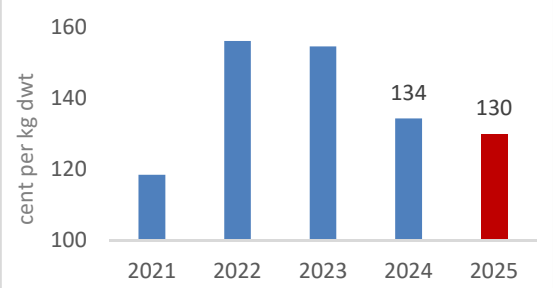
- The November 2024 composite pig feed price of €369 per tonne is expected to be maintained into early 2025.
- In Q2 and Q3 of 2025, pig feed costs are forecast to marginally decrease, with expectations of good harvest yields in the northern hemisphere and a further transition to contract milling/forward buying.
- Forecasts for the 2025 South American soyabean harvest suggest it will reach 165 mt. However, current drought conditions in some parts of Brazil may lead to a lower harvest.
- The annualised composite pig feed price is forecast to decrease by 2 percent in 2025 relative to 2024. This represents a decrease to 130 cent per kg dead wt. in 2025, compared to 134 cent per kg dead wt. in 2024.
- In 2025 the size of the EU sow herd is likely to continue to stabilise in the main pig producing countries, with the exception of Spain. The Spanish sow herd is expected to continue its long term growth, albeit at a lower level than previously (+1 percent).
- In 2025, the size of the Irish sow herd is expected to marginally increase after a significant reduction in 2022-2023, but the tight supply volume of Irish pigs is expected to continue.
- The volume of EU exports of pigmeat to China and the potential for trade tariffs will have an important influence on the EU and Irish pig price in 2025. It is expected that China's imports from the EU will remain weak and any imposition of trade tariffs will further reduce volumes.
- African Swine Fever (ASF) will continue to feature in 2025, with further cases in Eastern and Western Europe meaning heightened biosecurity precautions will continue.
- In 2025, the Irish pig price is forecast to be 202 cent per kg, but this forecast is highly influenced by ASF developments, EU pig supply volumes and Chinese import demand and potential trade tariffs.
- Following high losses in 2021 and 2022 and a return to profitability in 2023 and 2024, the Irish pig sector is expected to continue to deliver moderate levels of profitability in 2025.

Figure E31: Historical Compound Pig Feed Price and forecast for 2025



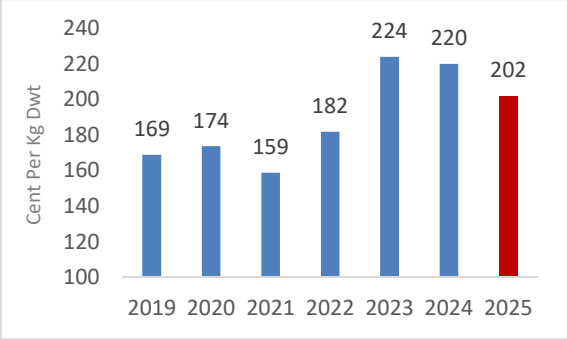
Source: Teagasc Pig Development Department estimate for 2024 & forecast for 2025

Figure E32: Historical Compound Pig Feed Price and forecast for 2025



Source: Teagasc Pig Development Department estimate for 2024 & forecast for 2025

Figure E33: Historical Irish pig prices and forecast for 2025



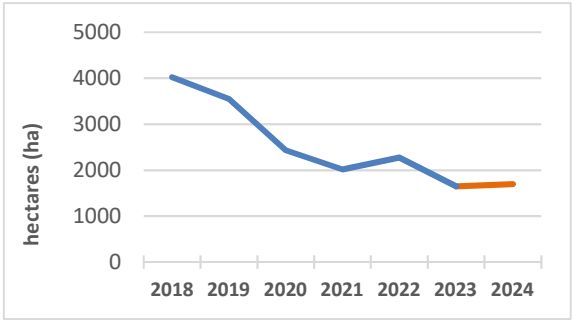
Source: Teagasc Pig Development Department estimated for 2024 & forecast for 2025

Forestry Sector: Review of 2023/2024

Afforestation levels	Actual Timber demand	Timber prices
Forecast similar to 2023 levels	Variable due to national and international economic factor / consumer confidence	Stable in 2024, tracking timber demand and competitiveness

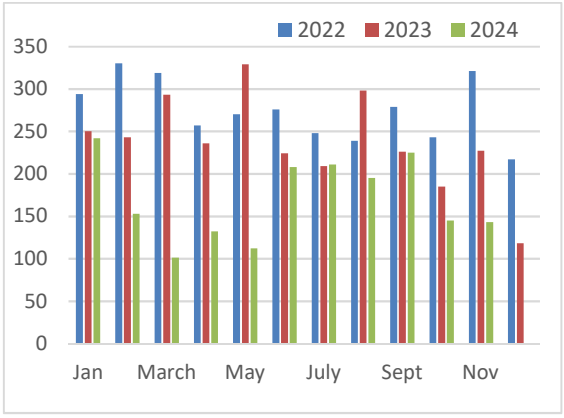
- The estimated planting level for 2024 is below 2,000 hectares (ha).
- Planting approval has been issued for over 5,500 ha in 2024 with over 7,300 ha approved since the Forestry Programme launch in September 2023.
- There have been significant improvements in DAFM licencing turnaround times with half of applications reportedly processed within 6 months and 75 percent within 9 months.
- Seventy seven kilometres (km) of private grant aided forest roads were constructed in 2023. The year to date completion figure up to Week 3, November 2024, is 67 km.
- The total number of private felling licences issued to Week 3, November, 2024 was 884, compared to a total of 1,427 for the full year in 2023.
- Roundwood removals from Irish forests reached a reported 4.25 million cubic metres (m^3) in 2023, with a total value of €214 million.
- Exports of forestry and wood based products totalled €647 million in 2023, representing almost 1.44 million tonnes of product.
- The United Kingdom remains our largest export market, accounting for over 80 percent of forestry and wood-based product exports by value.
- Timber markets remained challenging during 2024, reflecting the demand/supply situation.
- New dwelling completions in Ireland for in the first three quarters of 2024 reached 21,664, compared to a figure of 22,521 for the same period in 2023.
- Approximately half of Ireland's forest estate is certified as sustainably managed by international non-governmental organisations. Currently there are 33,064 ha of private forest is certified; all of which is certified by PEFC and 16,345 ha conjointly with FSC.

Figure E34: Annual planting 2018 to 2023, with projection for 2024



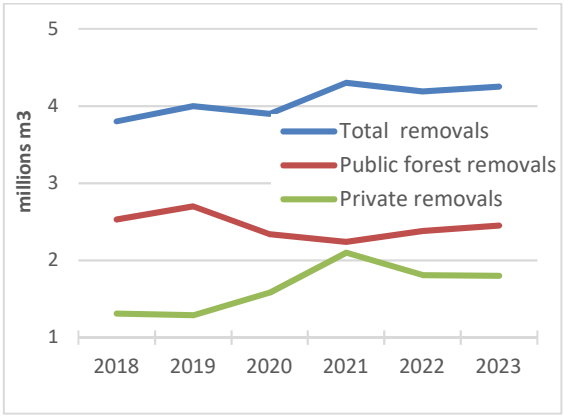
Source: DAFM (2024)

Figure E35: Monthly Felling Licences issued from 2022 to November 2024



Source: DAFM, Forestry Section Monthly Reports (2021/22/23)

Figure E36: Roundwood Removals 2018-2023 (millions m^3)



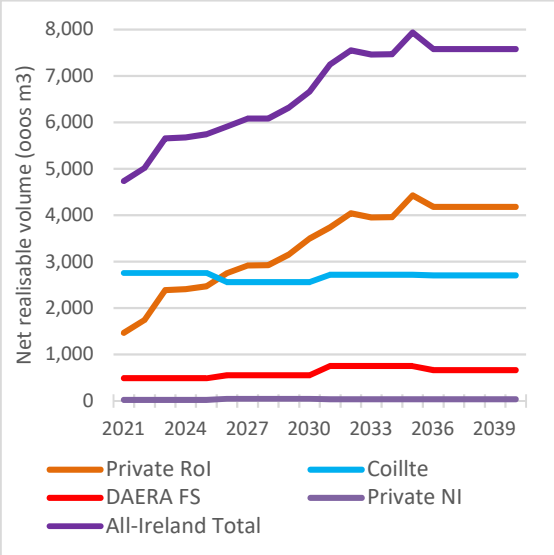
Source: CSO, 2024

Forestry Sector: Outlook for 2025

Afforestation levels	Timber demand	Timber prices
Up	Anticipated stable or modest demand increases	Linked to demand / supply issues

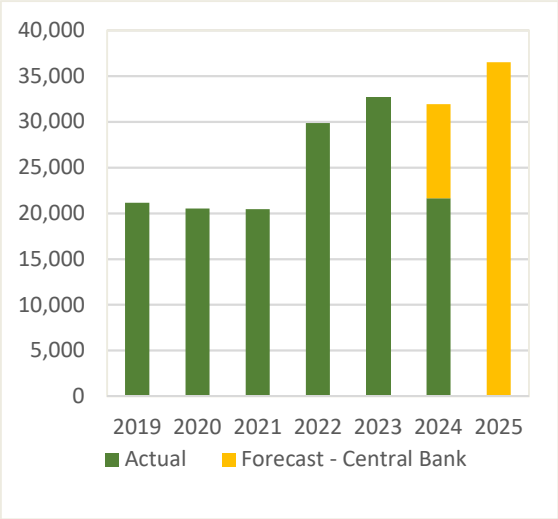
- The Government budget allocation for forestry measures in 2025 is €91 million. This allocation reflects funding to establish 8,000 ha of new forests, an ambitious target set out in the Food Vision 2030 Strategy and Climate Action Plan 2024.
- Progressing forest planting rates towards target levels in 2025 remains a priority. Forest creation opportunities within the Forestry Programme 2023-2027 will need to be combined with provision of strong support to farmers and landowners in re-engaging with forestry and building confidence regarding its many benefits.
- Forecasts indicate that the net realisable timber volume (NRV) from private sector forestry in Ireland will increase from 2.41 million m^3 in 2024 to 2.47 million m^3 in 2025.
- The export-oriented sawmilling sector will continue to compete in a challenging market environment, but has significant potential to enhance its market position with a sufficient level of timber mobilisation capacity.
- The level of Irish house completions for 2025 is estimated to reach 35,500.
- Continued progressive and sustainable management of forests, including timely thinning operations, as appropriate, will help optimise forest productivity, whilst also facilitating ongoing mobilisation of the timber resource.
- A focus on the rapid expansion of forest certification in the private forest sector is also necessary to ensure the sector is well positioned to meet future timber market requirements.

Figure E37: Forecast of Total Net Realisable Volume Production by ownership category to 2040 (≥ 7cm top diameter)



Source: All-Ireland Roundwood Production Forecast 2021-2040 (COFORD, 2021)

Figure E38: Housing Completions in Ireland (actual and forecast) 2019-2025



Sources: CSO, 2024, Central Bank 2024

Irish Dairy Farming Factsheet 2023
Average Performance

Milk Sales per ha
11,177 litres (down 6%)

Days at Grass
226 days (down 5 days)

Milk Production per cow
5,474 litres (down 5%)

Stocking Rate
2.12 lu/ha (down 1%)

Milk price actual fat/protein
42.79 cent per litre (down 29%)

Dairy Enterprise* area
44.3 ha (down 2%)

Average Dairy Herd Size
95 dairy cows (down 2%)

Milk Fat Content
average 4.30% (up 0.02 points)

Concentrates Fed/Dairy Cow
average 1,216 kg (down 1%)

Milk Protein Content
average 3.52% (down 0.03 points)

Concentrates fed/litre of milk
average 0.22 kg (up 4%)

Milk Solids per Cow
average 423 kg (down 5%)

Nitrogen per ha of grassland
147 kg (down 8%)

Pillar I Payment
per farm € 15,865

Total Production Costs
36.71 cent per litre (unchanged)
€4,213 per hectare (down 5%)

Somatic Cell Count
179,000 cells/ml (up 6%)

Gross Margin Dairy Enterprise
22.60 cent per litre (down 45%)
€2,674 per hectare (down 47%)

Net Margin Dairy Enterprise
7.24 cent per litre (down 71%)
€922 per hectare (down 70%)

Source: Teagasc National Farm Survey 2023. Please note that percentage changes are relative to 2022.
*Dairy Enterprise area refers to area for dairy cows only.

Irish Dairy Farming in 2024

Improved dairy prices
Modest growth in global milk production

Irish Milk Production
Down 2% on 2023

Irish Milk Price
Up 15% on the 2023 level

Weather Conditions
Challenging during H1 especially with improved conditions in H2

Grass Availability
Reduced for the year as a whole

Fertiliser Prices down 30%
Fertiliser Use up 10%

Feed Prices down 14% in 2024
Feed Use up 10% per head

Other Direct Costs per litre
up 5% on the 2023 level

Fuel Prices (Farm Diesel)
stable on the 2023 level

Total Costs per litre of milk
up slightly on the 2023 level

Net Margin for Dairy Enterprise
up 83% per litre on 2023

Source: Teagasc Estimates for 2024 and Forecasts for 2025

Irish Dairy Farming in 2025

Positive dairy price outlook
prices higher in H1 and lower in H2

Irish Milk Production
forecast to increase by 4%

Irish Milk price
up 5% for year as a whole

Weather Conditions
Normal weather assumed

Grass Availability
normal conditions

Fertiliser Prices down 5%
Fertiliser Use unchanged

Feed Prices stable
Feed Use down 5% per head

Other Direct Costs per litre
down 3% on the 2024 level

Fuel prices (Farm Diesel)
unchanged on the 2024 level

Total Costs per litre of milk
down 4% on the 2024 level

Net Margin for Dairy Enterprise
up 29% per litre on the 2024 level

Note: percentage changes are relative to previous year

Review of Dairy Farming in 2024 and Outlook for 2025

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1. Introduction

This paper looks back on dairy farm performance in 2023, reviews the outcomes for 2024 and looks ahead to the prospects for 2025. Data from the Teagasc National Farm Survey (NFS) are used in our review of 2023. The milk price and key input cost estimates for 2024 are used to produce an overall estimate of dairy enterprise margins for 2024. Finally, in the closing sections of the paper, the forecast for milk price, production costs and dairy farm margins in 2025 are presented.

Average Dairy farm income decreased substantially in 2023, compared to the particularly high level experienced in 2022. This was largely due to a decline in milk production, given a weak milk price, stubbornly high input prices and challenging weather and grass growing conditions. A fall-off in milk production was particularly evident in the final quarter of 2023, with the earlier housing of animals across some regions. On average, according to the Teagasc NFS, there was a 69 percent decrease in Family Farm Income (FFI) in 2023 to €49,432.

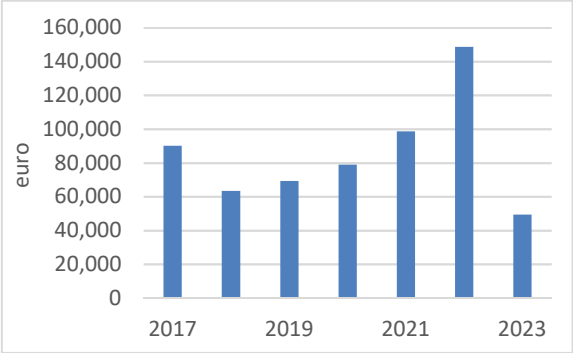
Despite a reduction in the price of some inputs such as fertiliser and fuel in 2023, prices relating to other items such as energy, concentrate feed and contracting all increased compared to 2022. As a result, Dairy production costs remained stable but elevated in 2023. On the average Dairy farm enterprise in 2023, on a cent per litre basis, average direct costs increased by 6 percent, due mainly to elevated feed use due to reduced grass growth. Conversely, fixed costs decreased by the same magnitude, with savings across most categories, particularly with regard to building depreciation.

Although feed use on individual farms is influenced by factors such as location, land type and stocking rate, average purchased concentrate expenditure increased by 4 percent per litre in 2023. The average feed volume per dairy cow remained relatively stable at 1,216kg. Pasture and forage costs on Dairy farms increased slightly in 2023, up 4 percent per litre, on average. Other direct costs (such as contracting charges and veterinary expenses) also increased, up 13 percent year-on-year. On average, expenditure relating to hired labour decreased in 2023 with spending on energy, fuel and land rental also down (marginally).

2. Review of the Economic Performance of Dairy Farms in 2023

Results from the Teagasc NFS 2023 for Dairy farms are summarised here. Figure 1 presents the average FFI on *Specialist Dairy* farms over the years 2017 to 2023. The chart shows the sharp decline in average dairy farm income in 2023, following a number of years of strong growth due to generally increased milk production volume and value.

Figure 1: Average Income on Irish Specialist Dairy Farms 2017 to 2023



Source: Teagasc National Farm Survey (various years).

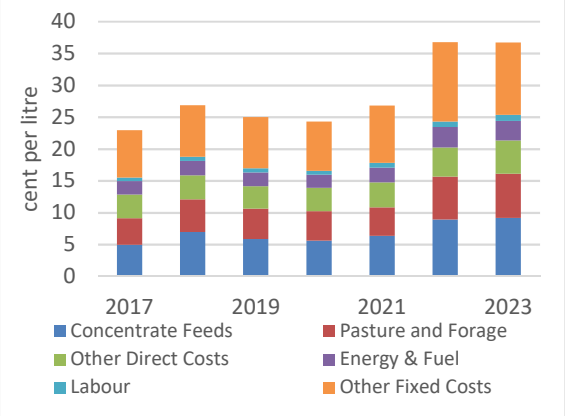
To further explore the economic performance of dairy farms in 2023, we next look at how margins have changed over the course of the past few years. Table A1 (see appendix) presents the average gross output, gross margin and net margin per litre of milk produced in 2022 and 2023. Farms producing mainly liquid milk are excluded from the sample, as are herds of 10 cows or less.

The gross output measure includes the value of milk and calf sales minus replacement costs. The data indicate that gross output per litre decreased by 28 percent in 2023 relative to 2022, due to the weak milk price. On average, on a cent per litre basis, concentrate feed related costs increased by 4 percent year-on-year. As a whole, total direct costs (per litre) increased by 6 percent. Overall, in 2023 average Dairy gross margin decreased by 45 percent to 22.6 cent per litre. Total fixed costs declined in 2023, with reductions across items such as depreciation and energy and fuel. On average, total costs remained relatively stable albeit elevated in 2023. Overall, there was a 71 percent decrease in average net margin in 2023, to 7.24 cent per litre.

Table A2 (in the appendix) presents gross output, total costs and net margin per hectare of forage area allocated to the Dairy enterprise for 2022 and 2023. In 2023, milk production per hectare declined by 5 percent. Net margin, on a per hectare basis, decreased by 70 percent for the average Dairy enterprise in 2023, due mainly to a reduced milk price and decreased production, in the context of elevated production costs.

The cost and margin data in Table A3 (in the appendix) allow us to examine the variability in economic performance across dairy farms in 2023. Farms are classified on the basis of gross margin per hectare: the best performing one-third of farms (Top), the middle one-third (Middle) and the least best performing one-third (Bottom). On a per litre basis, total production costs for the Bottom group (40.4 cent) were 17 percent higher than for the Top group (34.6 cent). The net margin for the Bottom group (1.9 cent) is approximately 17 percent of that of the Top group (11.14 cent). Figure 2 indicates that total milk production costs remained elevated (but relatively stable year-on-year) on average in 2023 at 36.7 cent per litre.

Figure 2: Total Milk Production Costs (cent per litre) in Ireland: 2017 to 2023



Source: Teagasc National Farm Survey Data.

3. Review of 2024 Estimated Performance

This section of the paper presents a review of Irish dairying in 2024. Actual Teagasc NFS results for 2024 will not be available until the middle of 2025. Therefore, it is necessary to estimate the price and volume of inputs and outputs in 2024, in order to estimate the outcome for margins in 2024. The following section of the paper first addresses production cost estimates for 2024, looking at both input prices and input usage volumes. A cost assessment based on the average dairy farm nationally is then given. Finally, the development of dairy product markets in 2024, in terms of both price and volume changes, is discussed.

3.1 Estimated Input Usage and Price 2024

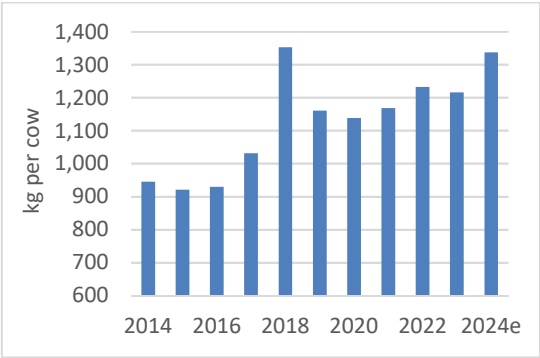
It is not yet possible to offer a comprehensive assessment of the precise changes in production costs for every farm in 2024. It is assumed that there was a 2 percent drop in the volume of milk production on the average dairy farm in 2024.

3.1.1 Feedstuff – usage and price 2024

Purchased feed (concentrates) is an important element of dairy production costs in Ireland, typically accounting for about 25 percent of total production costs in recent years.

Although official aggregate feed sales data for the full year are not yet available, the trend in dairy feed use in 2024 is up slightly on the 2023 level. Department of Agriculture, Food and the Marine (DAFM) feed sales data for dairy farms for Q1 and Q2 of 2024 were respectively up 4 percent on the same period in 2023. Data for Q3 2024 indicate an increase of 12 percent relative to the same period in 2023. Overall, dairy feed sales were 7 percent higher in the first 9 months of 2024. The Irish dairy cow population is estimated to have decreased by 1.4 percent in 2024. The average milk yield per cow in 2024 is estimated to have decreased marginally by less than 1 percent on the 2023 level. Figure 3 shows the average volume of compound feed use per cow in recent years, including an estimate for 2024.

Figure 3: Compound Feed Purchases per Dairy Cow in Ireland: National Average for 2014 to 2024e



Source: NFS data with authors estimate for 2024.
Note: e = estimate.

These data are derived from DAFM figures on feed sales to the end of Q3 and estimates for Q4 2024 by the authors, along with Central Statistics Office (CSO) data on animal numbers. For the average dairy farm, with a 2 percent decline in milk production in 2024, feed use per cow, is estimated at approximately

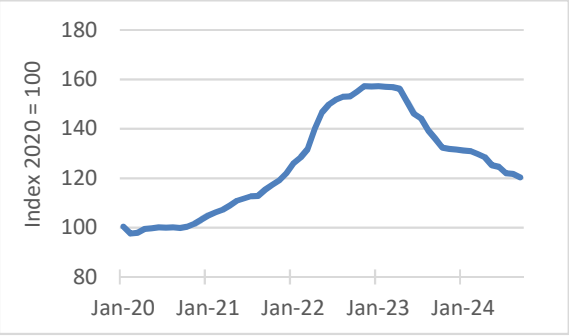
1,338 kg, a 10 percent increase in volume terms relative to 2023.

The feed price in any given year is a combination of supply and demand factors for the current production year, and the year previous. In 2024, the feed price story is made up of what happened in feed grain markets in the 2023 and 2024 production years. For the first half of 2024 there was a continued easing of feed price levels, which were very high in late 2022 and early 2023 due to the invasion of Ukraine, which resulted in downward movement in feed prices during H1 2024.

During H2 2024, whilst it became evident that the international balance sheet for grains remained tight following the global supply and demand conditions, feed price escalation remained relatively flat. Market reports were indicating in Q4 2024 that supplies from the Black Sea region were continuing to flow and for the year as a whole in 2024, the majority of influencing factors on 2024 feed prices emanated from the 2023/24 ending stock position. Any inflationary pressure on monthly feed prices are not expected to impact until later in the 2024/25 marketing year. For the year as whole, feed prices are estimated to be down by about 14 percent, compared to 2023 feed prices.

Figure 4 shows an index of monthly Irish cattle feed prices from 2020 to 2024. While the price of feed has been declining for over 18 months, it has done so from a very high level. For 2024, on an annual basis, feed prices are estimated to be about 14 percent lower than in 2023.

Figure 4: Monthly Price Index of Cattle Meal in Ireland 2020 to 2024



Source: Central Statistics Office (Various Years).

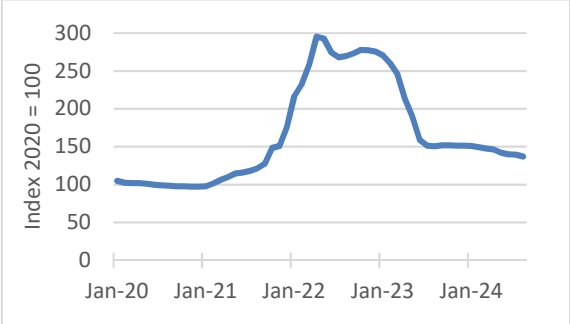
On a per litre basis, the expenditure on feed is estimated to have decreased by about 4 percent in 2024 compared to the 2023 level. Feed costs, measured on a per hectare basis, are estimated to have decreased by 5 percent on the average farm, experiencing a 2 percent drop in milk production in 2024.

3.1.2 Fertiliser – usage and price 2024

Pasture and forage costs typically comprise about 20 percent of total production costs on Dairy farms. This cost item is made up of fertiliser purchases and contracting charges. Figure 5 charts the Irish monthly index of farm level fertiliser prices from 2020 through to 2024.

Following the sharp rise in fertiliser prices due to the invasion of Ukraine in 2022, fertiliser prices have gradually fallen over the course of 2023 and 2024. Taking account of the seasonality in purchasing, a 30 percent drop in fertiliser prices in 2024 is estimated relative to 2023.

Figure 5: Monthly Price Index of Fertiliser in Ireland for 2020 to 2024



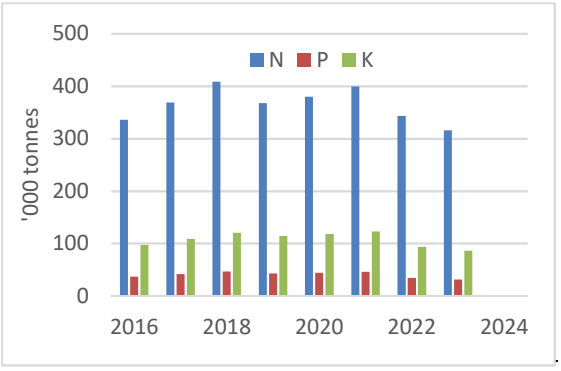
Source: Central Statistics Office (Various Years).

Figure 6 shows DAFM data for fertiliser sales for the years 2015 to 2023. While full year sales data for 2024 was unavailable at the time of writing, data for the first nine months of the fertiliser year(October to June) showed a 3 percent increase in nitrogen (N), a decline of 5 percent for phosphorous (P) and an increase of 1 percent for potassium (K). In contrast to the summer of 2023, weather conditions were more favourable for the application of fertiliser during the summer of 2024.

Fertiliser use on dairy farms is estimated to have increased in 2024, following a number of years of decline. It is estimated that total nitrogen fertiliser use on the average Dairy farm increased by approximately 10 percent in 2024.

Overall, taking account of the increased level of fertiliser sales and the 30 percent drop in price, fertiliser expenditure per hectare on the average dairy farm in 2024 is estimated to have fallen by approximately 23 percent compared to 2023.

Figure 6: Irish Fertiliser Sales by Compounders 2016 to 2023 (Oct-Sept)



Source: DAFM (various years)

Note: Full year data for 2024 was unavailable at the time of publication.

3.1.3 Contractor Costs - usage and price 2024

Contractor costs comprise the remainder of the pasture and forage cost element. It is estimated that contracting charges have remained stable in 2024.

3.1.4 Pasture and Forage – usage and price 2024

With the reduced spending on fertiliser in 2024 and no change in contracting charges, expenditure on pasture and forage is estimated to have fallen by about 11 percent on a per hectare and 10 percent on a per litre basis on farms where milk production has fallen by 2 percent in 2024.

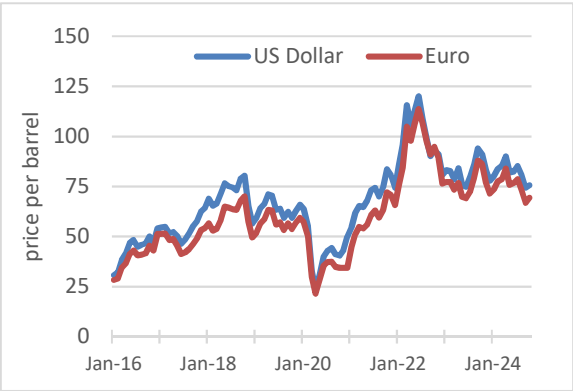
3.1.5 Electricity and Fuel – usage and price 2024

Energy (electricity and fuel) is a relatively less important farm input compared to feed and fertiliser, comprising less than 10 percent of total costs on dairy farms, on average.

Crude Oil and Fuel Prices:
The global energy market continued to experience volatility in 2024, as geopolitical tensions continued. Brent crude oil prices began 2024 at US$80 per barrel (pb). Monthly prices increased to US$90 in April, but fell below US$75 in Q4.

Crude oil prices are presented in Figure 7. The annual average Brent price for 2024 is expected to be about US $80 pb, which represents a 3 percent decline on the average oil price in 2023 of almost US $83 pb.

Figure 7: Monthly Average Brent Crude oil prices in Euro and US dollar from 2016 to 2024



Source: St Louis Fed

In 2024 the euro was relatively steady against the US dollar. The euro was valued at US$1.08 in January 2024. It fell to US$1.07 in June, but rose to US$1.11 by September, before slipping back to about US$1.08 by October. The average value in 2024 should be about US$1.08, in line with the average figure for 2023.

With the euro unchanged in value in 2024 compared with 2023, it had no impact on oil prices. Hence, the estimated average crude oil price for 2024 was about €76 pb, in line with the 2023 level. Overall, farm level fuel costs in Ireland, averaged across the year, were relatively unchanged in 2024.

Electricity Prices: Despite the fall in fossil fuel prices in 2023, the downward movement in electricity prices lagged behind, only filtering through in 2024. Annual electricity prices in 2024 are estimated to be 18 percent lower than their 2023 level.

Fuel and Electricity Volumes: Demand by farmers for fuel and electricity tends to be relatively inelastic with respect to price.

Given that milk production is estimated to have fallen by only 2 percent nationally, this suggests that the volume of electricity and fuel use is not likely to have changed in 2024. With higher prices for fuel and lower prices for electricity, the overall expenditure on both electricity and fuel is estimated to be down about 4 percent on a per hectare basis and 1 percent on a per litre basis in 2024.

3.1.6 Other Direct and Fixed Costs – usage and price 2024

It is estimated that there was a 3 percent increase in agricultural wages in Ireland in 2024. It is assumed that the quantity of hired labour used on farms is likely to have been unchanged. Therefore, expenditure on hired labour is estimated to have

increased by 3 percent on a per hectare basis and 6 percent on a per litre basis.

The price of other input cost items increased by 3 percent in 2024. It is assumed that usage volume of these input items remained unchanged.

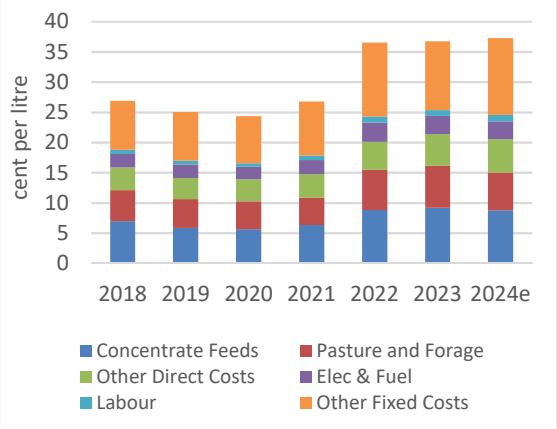
The assessment of fixed costs in the Teagasc NFS is quite complex and definitive information on how fixed costs have changed in 2024 will not be available until the Teagasc NFS results for 2024 are published in 2025.

Factoring in the increase in milk price in 2024 and the drop in milk production, the value of milk output will has increased considerably. Hence the share of fixed costs allocated to the Dairy enterprise on Dairy farms is estimated to have increased in 2024.

3.1.7 Estimate of Total Input expenditure for 2024

With a 1.4 percent decrease in dairy cow numbers, and a 2 percent drop in milk production in 2024, it follows that milk yield per cow has decreased, marginally, by less than 1 percent, in 2024. The assessment of production costs for the average dairy farm is considered here on the basis that the farm experienced a 2 percent drop in milk production in 2024. Figure 8 charts the average total cost of production and its subcomponents from 2018 to 2023 and the associated estimate for 2024.

Figure 8: Total Cost of Milk Production in Ireland from 2018 to 2024e



Source: Teagasc National Farm Survey Data and Authors' estimate. Note: e = estimate.

The fall in production costs in 2019 and 2020 has been followed by an increase in 2021, a dramatic increase in 2022 and a stabilisation in production costs in 2023 and 2024.

It is estimated that the average total cost of milk production in Ireland in 2024 was 37.3 cent per litre, up marginally on the 2023 level. It is notable that total production costs in 2024 are almost 50 percent above pre-COVID levels.

3.2 Review of Dairy Market in 2024

In aggregate, modest milk production growth has been observed across the main dairy export regions in 2024 relative to 2023. Weak supply growth in recent years has helped to support higher dairy commodity prices, albeit in the face of a mixed demand picture.

European dairy product prices have taken different paths in 2024. The last three year in the European butter market have been unprecedented. Having fallen sharply in 2023, butter prices have soared in 2024, taking prices over the extraordinary levels experienced in 2022 (€7,800 in November 2024). For 2024 as a whole, European butter prices are likely to be up 35 percent on the 2023 level.

By contrast European SMP prices have remained relatively stable in 2024, moving in a range of €2,400 to €2,600 in 2024. For the year 2024 as a whole, European SMP prices are likely to relatively unchanged on the average level in 2023.

Cheddar prices in 2024 have not recovered from the decline experienced in 2023. Prices have moved within a range of €3,600 to €4,200 in 2024. For the year 2024 as a whole, European Cheddar prices are likely to be down 5 percent on the 2023 level.

In the EU, milk production growth was mixed across countries in 2024. With challenging weather conditions across some countries in addition to reduced cow numbers. Overall, EU milk production is likely to increase by about 0.5 percent overall. This represents an increase in EU milk production of about 0.8 mt relative to the 2023 level.

New Zealand (NZ) milk production was down 1 percent for H1 2024, but production in the current season has been up on the same period in 2023. For the 2024 calendar year milk production is expected to increase by 2.4 percent compared to 2023 (+0.5mt).

US milk production and dairy cow numbers declined in 2023. While, 2024 has seen higher milk prices and lower feed costs, milk production is likely to be on a par with the 2023 level.

Overall, for the calendar year 2024 Australian milk production will be up 3 percent on 2023 (0.22mt). On the other hand, milk production in Argentina for the calendar year 2024 is down about 7 percent on the 2023 level (0.81mt), with some recovery in production evident as the year progressed. The fall in production in 2024 was due to adverse weather

conditions, disease related feed shortages and depressed domestic demand due to the economic recession the country has experienced.

On foot of a recovery in global milk production across the major dairy export nations in 2024, production across the main producers is likely to be up slightly on the 2023 level.

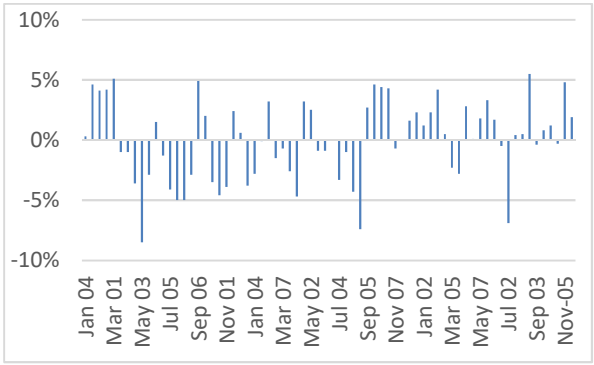
While it had been expected that China's milk production would continue to increase in 2024, falling milk prices have led to a slowdown and production for 2024 may not now increase on the 2023 level.

Chinese dairy import demand has continued to weaken in 2024, as domestic consumption of dairy products is affected by the slowdown in its economy and domestic supply. By July of 2024 SMP imports into China were running 36 percent below the previous year, while imports of WMP were down about 9 percent in the same period. Imports of whey powder also decreased by about 9 percent over the first half of 2024.

Total EU exports of SMP to third countries were down 8 percent in the period January to July 2024, relative to the same period in 2023. Some decrease in EU butter exports has also been experienced in 2024. For the period January to July, EU butter exports to third countries decreased by 2 percent on the same period in 2023. EU exports of cheese to third countries remained relatively stable (up 1 percent) in 2024 compared with 2023.

Figure 9 shows price movements in the influential New Zealand Global Dairy Trade (GDT) Auction Index over the course of the past two years. Generally positive price movements occurred in Q1 through to Q4 in 2024.

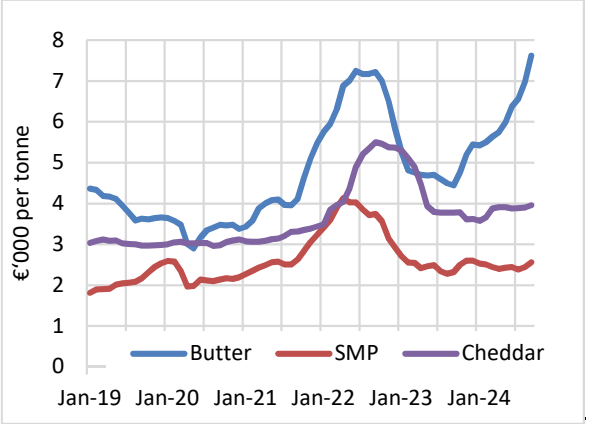
Figure 9: Monthly GDT Auction Index Price movements in 2023 and 2024



Source: GDT Auction 2024.

European wholesale dairy product prices are shown in Figure 10. In 2024 prices for butter rose dramatically, SMP prices remained stable, while cheddar prices fell slightly.

Figure 10: European Dairy Product Prices 2019-24

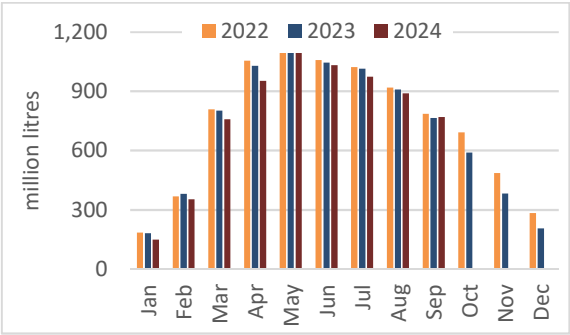


Source: MMO 2024.

3.3 Estimated Output Values 2024

Irish milk production is estimated to have fallen by about 2 percent in 2024. Monthly milk deliveries are shown in Figure 11.

Figure 11: Monthly Irish Milk Deliveries 2022 to 2024



Source: CSO, 2024

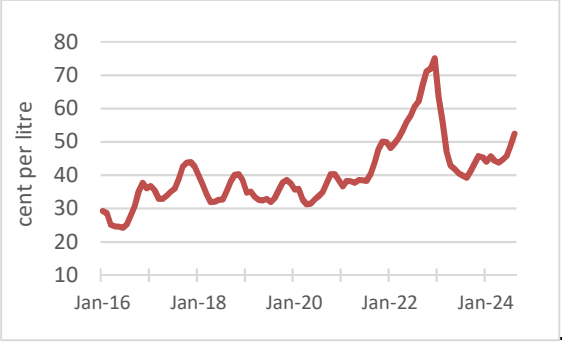
Milk production in 2024 got off to a poor start with monthly milk deliveries down over 5 percent in H1 2024, relative to H1 2023. However, milk production in H2 has been stronger, which has reduced the deficit towards the end of the production season.

There has been a slight decrease in dairy cow numbers in 2024, alongside slightly lower milk yields. Irish dairy cow numbers, as recorded in June 2024 decreased to 1.624 million, compared with 1.647 million in June 2023, a decrease of 1.4 percent (CSO, 2024).

Figure 12 presents monthly Irish milk prices recorded by the CSO from January 2016 through to September 2024. In Ireland the average 2024 manufacturing milk price is estimated to be up about 15 percent on the 2023 level. However, some farmers will have

milk in fixed price contracts and therefore may not obtain the spot prices quoted.

Figure 12: Irish Farm Gate Milk Prices Actual fat (vat incl.) Jan 2016 – Sept 2024



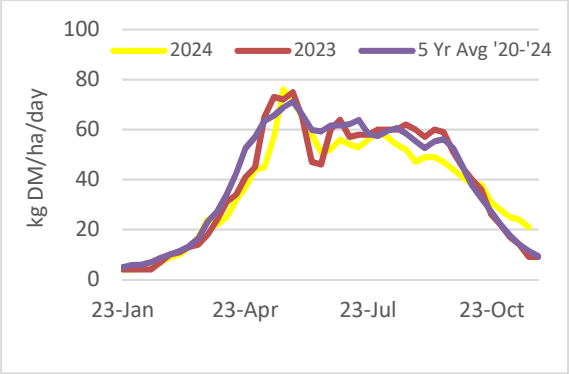
Source: CSO. Note: Actual fat (vat inclusive).

In 2024, Irish farm gate milk prices have increased as the year has progressed, reflecting the rise in butter prices in particular. The annual average national milk price (CSO definition) is estimated to be approximately 49.7 cent per litre (vat inclusive) in 2024 on an actual fat and protein basis (estimated to be 4.32 percent fat and 3.53 percent protein).

The general upward trend in milk price is driven by increased demand growth internationally alongside a tight supply. This has resulted in a continued increase in key international dairy product prices.

Figure 13 illustrates the evolution in national grass growth in 2024 compared to 2023 and the 5-year average (2020-24), as measured by the PastureBase Ireland system. Grass growth over Q1 - Q3 of 2024 was well below the 5 year average due to unusually wet conditions in Q1 and Q2 and unusually dry conditions and low sunshine levels in Q3. This had a negative impact on grass growth through the summer. However, production conditions in Q4 were exceptionally good and this facilitated good late season milk production volumes.

Figure 13: National Grass Growth 2023 & 2024



Source: Pasturebase Ireland.

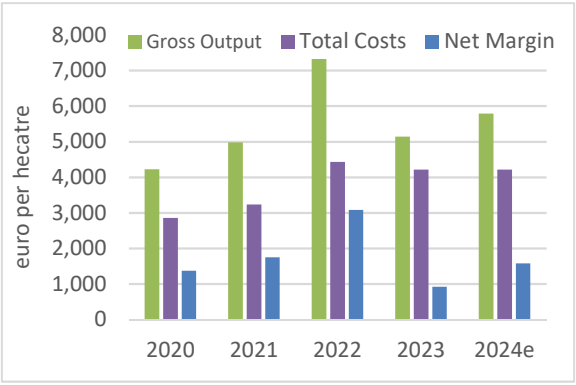
3.4 Review of Dairy Enterprise Net Margins in 2024

The review of milk prices showed that the average milk price for 2024 was up approximately 15 percent on the 2023 level. The review of input costs concluded that for the average farm, experiencing a slight decline in milk production, total production costs on a per litre basis increased marginally in 2024.

The margin per hectare is first described before examining margin on a per litre basis. Figure 14 presents the estimated average gross output, production costs and net margin per hectare for 2024 in comparison to recent years, on the basis of a 2 percent decline in milk production in 2024.

For 2024 the net margin for milk production is estimated to have averaged €1,578 per hectare. This means that the average net margin in 2024 has increased by more than €650 per hectare relative to 2023. This represents an increase of 71 percent year-on-year.

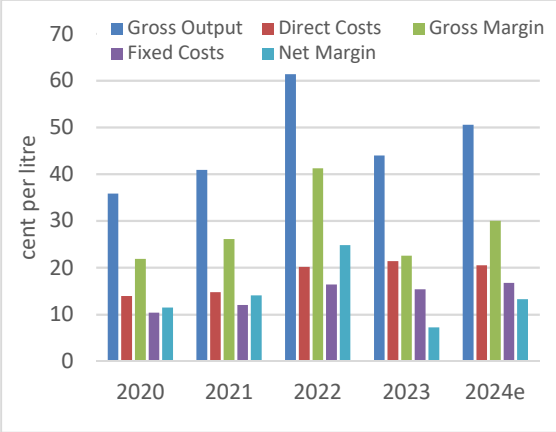
Figure 14: Average Gross Output, Costs & Margins per hectare for Irish Milk Production in 2020-2023 & estimate for 2024



Source: Teagasc National Farm Survey Data and Authors' estimates. Note: e = estimate.

Estimated average gross output per litre in 2024 is shown in Figure 15, on the basis of a 2 percent decline in milk production across the year. Average gross output per litre is estimated to be 50.6 cent per litre in 2024, representing a 15 percent increase on the 2023 level. Total costs are estimated to have increased slightly to 37.3 cent. This will result in a significant improvement in net margin on the 2023 level of 84 percent or 6 cent, taking the net margin in 2024 to 13.3 cent per litre, on average.

Figure 15: Average Gross Output, Costs & Margins per litre for Irish milk production in 2020-2023 and estimates for 2024



Source: Teagasc National Farm Survey Data and Authors' estimates. Note: e = estimate.

See Table A5 (in the appendix) for estimates of output, costs and margins on a per litre basis for a farm that has reduced milk production by 2 percent in 2024.

4. Dairy Outlook for 2025

For the purposes of this analysis, a 4 percent increase in Irish milk production in 2025 is forecast based on an improvement in yields, with no change in the dairy enterprise's land base. Production costs are forecast to remain at elevated levels.

4.1 Outlook for Input Expenditure 2025

This analysis of likely changes in production costs in 2025, is based on a 4 percent increase in milk volume on the average farm. This is in line with the forecast increase in Irish national milk production.

4.1.1 Feed - usage and price 2025

Irish animal feed prices are driven by a combination of Irish cereal harvest prices (for the previous year and current year) and the prices of imported feed. Irish cereal prices at harvest 2024 were only very slightly up (by about 3 percent) on the 2023 level. In 2024, despite a slight increase in European grain production volumes, an increase in grains internationally, coupled with increased demand, resulted in a slight decrease in ending stocks to use ratios on the intentional balance sheet, resulting in a very slight upward movement in Irish farm gate harvest prices compared to 2023.

Feed prices in 2025 will depend in part on cereal prices for harvest 2025, but probably more so on the harvest prices paid in 2024. On a monthly basis there has been downward movement in feed prices over the course of 2024, with prices in early 2025 set to be lower than at the outset of 2024. Cereal prices at harvest 2025 are forecast to increase very slightly on 2024 harvest prices. Averaging across the full year, feed prices are forecast to be a tale of two halves, with a relatively stable story for average feed prices in 2025, compared to 2024.

It is estimated that the volume of dairy feed used in Ireland increased significantly in 2024 on a per head basis due mainly to adverse weather. With the assumption of normal weather in Ireland in 2025 feed volume requirements per head for grassland enterprises would be expected to decline. With feed use down slightly on Irish farms and with stable feed prices, this will result in a 9 percent forecast drop in feed expenditure on a per litre basis in 2025.

4.1.2 Fertiliser & Contracting Costs– usage and price 2025

At the time of writing, it is difficult to anticipate how fertiliser prices might evolve in 2025, as energy prices and trade policy are the subject of uncertainty. For 2025 as a whole, for the purposes of this paper it is forecast that fertiliser prices will decline by 5 percent on the 2024 level.

Fertiliser usage in 2025 is forecast to remain unchanged on the 2024 level. With fuel prices expected to remain stable, agricultural contracting charges in 2025 are forecast to remain unchanged on the 2024 level. Overall, this means that pasture and forage costs per hectare are forecast to decline by 3 percent in 2025.

4.1.3 Electricity and Fuel – usage and price 2025

As of November 2024, prospects for the US$/euro exchange rate in 2025 are somewhat uncertain following the outcome of the US election. Concern about the potential imposition of trade tariffs has caused forecasts for the euro in 2025 to weaken to US$1.05. An analysis of futures prices indicates that Brent crude oil could average US$76 in 2025. This would represent a decrease of about 6 percent on the 2024 level.

At a US$/euro exchange rate of $1.05, the forecast annual Brent crude oil price for 2025 would be a little over €72 pb, which would leave the annual average Brent crude oil price down 3 percent in euro terms in 2025 relative to the average for 2024. With a further carbon tax increase planned for 2025, farm fuel prices are forecast to be unchanged on the 2024 level. Following a significant drop in 2024, electricity prices are forecast to remain unchanged in 2025. This would mean expenditure per hectare on

electricity and fuel in 2025 would remain unchanged on the 2024 level.

4.1.4 Other Direct and Fixed Costs – usage and price 2025

Projections relating to the macroeconomy in 2025 are conditioned by some uncertainty relating to global growth prospects, geopolitical concerns and trade relationship uncertainty. Global economic growth rates in 2025 are expected to be on a par with 2024, albeit that the new US administration creates some uncertainties. General inflation is expected to be lower in 2025, returning to levels that are more sustainable over the longer term.

An increase in wage rates in 2025 of 3 percent is forecast. The increase in general inflation affecting other direct costs in 2025 is forecast to be 1 percent on a per hectare basis.

At an overall farm level, fixed costs on dairy farms are forecast to remain unchanged on average in 2025.

4.1.5 Estimate of Total Input expenditure for 2025

At the Dairy enterprise level, direct costs per hectare are forecast to fall by 3 percent in 2025, with a 6 percent reduction on a per litre basis. Fixed costs for the Dairy enterprise are forecast to increase slightly due to the increased value of milk sales. Overall, total production costs per hectare are forecast to remain stable in 2025.

4.2 The Outlook for Dairy Markets in 2025

The world dairy market in 2024 was characterised by rising dairy commodity prices, albeit from quite a low base, in the context of the level of production costs in the last couple of years.

There was some modest production growth in 2024 in key production regions, while demand was stronger. China's production growth stalled and with depressed domestic consumption, this resulted in subdued dairy import activity.

The dairy market situation in 2025 will partially depend on factors which are difficult to anticipate, such as the impact of potential La Nina weather conditions in the Southern Pacific and geopolitical considerations, such as the potential imposition of US trade tariffs. Nevertheless the short term outlook is positive, given that dairy commodity prices have been moving to higher levels in recent months.

On the demand side continued weakness in Chinese dairy imports is anticipated, although it is thought that stock levels are in decline. More generally economic growth prospects, which are reasonably positive, may be affected by decisions to be made by the incoming US administration.

On the supply side milk production by the main dairy exporters should increase by about 0.3 percent in 2025.

Movements in the GDT auction are usually indicative of short-term developments in global dairy commodity prices and in farm milk prices. The GDT has continued to report positive price movements in recent auctions, indicating that the outlook for milk prices entering 2025 remains favourable.

In spite of bad weather and animal disease outbreaks, improving margins meant that EU milk production increased in 2024. For 2025, assuming more favourable production conditions, a slight further increase in EU milk production is possible, perhaps about 0.2 percent (0.3 mt).

While environmental pressures continue to weigh on the EU dairy sector, there will be few such concerns in the US. For the US dairy market the latest forecasts suggest a further 0.7 percent (0.7 mt) increase in US milk production in 2025. This increase would reflect a combination of increased milk yields and stable cow numbers (USDA, 2025).

There has been a relatively good start to the 2024/25 milk production season in New Zealand. Dairy margins should improve in the current production season. However, a slight reduction in dairy cow numbers is anticipated in 2025, with the added possibility of La Nina weather conditions. As a result, it is likely that New Zealand milk production could decrease by close to 1 percent (0.2 mt) in 2025.

The Irish milk price improved to a greater extent than milk prices in much of the rest of the EU in 2024. From a position close to the bottom of the EU milk price league in 2023, Irish milk prices exceeded the EU average in 2024.

The high price of butter has been the main driver of the recent increase in Irish milk prices. While the short term outlook for butter prices remains positive, past experience suggests that very high prices can only be sustained for a limited period. Therefore some weakening in butter prices later in 2025 may emerge. Given the seasonal nature of Irish dairy production, the longer the current buoyancy in butter prices continues, the greater the benefit this will have for the annual average Irish milk price in 2025.

It is forecast that the annual average Irish milk price for 2025 will be up about 5 percent on the 2024 level, giving an annual average milk price (actual fat and protein vat inclusive) of about 52.2 cent per litre in 2025, equivalent to a base price of about 47.1 cent per litre.

4.3 The Outlook for Milk Production in 2025

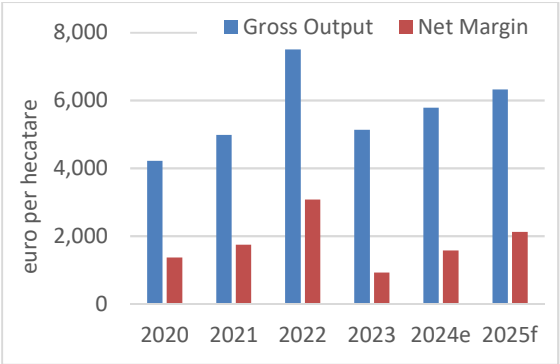
Irish milk production is estimated to have fallen by 2 percent in 2024, with lower cow numbers and slightly lower milk yields. Following a notable improvement in 2024, the milk price outlook for 2025 remains favourable. However, cost pressures will remain a concern, as will uncertainty relating to potential future changes to environmental policy including nitrates limits. It is unlikely that we will see an increase in cow numbers as farmers wait to see how policy will evolve. A 4 percent increase in milk production is forecast for 2025, with a stable dairy cow population and a recovery in milk yields, contingent on normal weather conditions.

4.4 The Outlook for Dairy Enterprise Net Margins in 2025

This section considers the impact of changes in milk prices and production costs on gross and net margins on dairy farms in 2025. Prices for feed and energy are forecast to remain relatively unchanged for 2025, with a small reduction in fertiliser prices likely. A 4 percent increase in milk output per hectare is assumed for 2025.

In 2025, profitability per hectare, as measured by net margin on the average dairy farm, is forecast to increase by 35 percent. Average net margin per hectare is estimated to be €1,578 for 2024, and is forecast to rise to €2,126 in 2025, as illustrated in Figure 16.

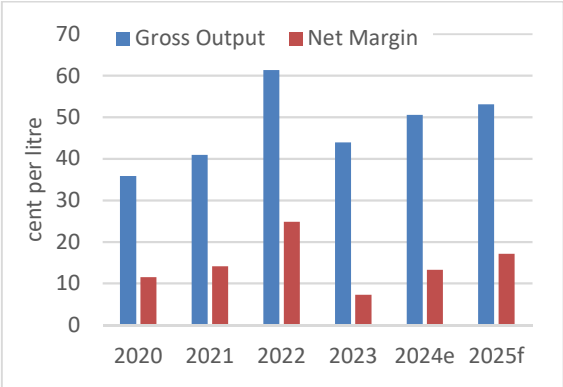
Figure 16: Average Gross Output and Net Margin per hectare for 2020 to 2024e with forecast for 2025



Source: Teagasc National Farm Survey Data and Authors' estimates. Note: e = estimate f= forecast.

Figure 17 presents a margin forecast on a per litre basis for the average dairy farm, based on a 4 percent increase in milk production in 2025.

Figure 17: Average Gross Output and Net Margin per litre in Ireland 2020 to 2024e, with forecast for 2025



Source: National Farm Survey Data (Various Years) and Authors' estimates. Note: e = estimate f = forecast.

Given that the average milk price in 2025 is forecast to improve by 5 percent compared to 2024, and with a marginal reduction in production costs, this would mean that gross and net margins are forecast to increase in 2025. Net margin per litre is forecast to increase by 29 percent in 2025, to an average of 17 cent per litre.

5. Concluding Comments

Production costs increased sharply in 2022 and remained elevated in 2023 and 2024. A significant recovery in milk prices occurred in 2024.

There was a significant improvement in net margin per hectare and per litre of milk produced in 2024. On average, it is estimated that dairy enterprise net margin per hectare increased by 71 percent in 2024 to €1,578.

In 2025 the annual average milk price is forecast to improve relative to the 2024 level. On the assumption that normal weather is experienced in 2025, production costs will remain high, but should be down marginally on the 2024 level.

It is forecast that total production costs will fall by 4 percent to reach 35.9 cent per litre. The average net margin per hectare and per litre in 2025 are likely to be up 35 and 29 percent respectively on the 2024 level at €2,126 per hectare and 17 cent per litre.

Dairy farms will continue to operate in a high cost environment in 2025. However, with a favourable milk price outlook and with the assumption of normal weather facilitating a production increase, there should be a further improvement in margins.

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Table A1: Average Gross and Net Margin of Milk Produced in 2022 and 2023

	2022	2023	% Change
	cent/litre		
Total Gross Output	61.34	43.96	-28
Concentrate Costs	8.83	9.18	+4
Pasture and Forage Costs	6.68	6.95	+4
Other Direct Costs	4.62	5.24	+13
Total Direct Costs	20.13	21.36	+6
Gross Margin	41.21	22.60	-45
Electricity and Fuel	3.17	3.03	-4
Labour	1.02	0.98	-4
Other Fixed Costs	12.22	11.34	-7
Total Fixed Costs	16.41	15.35	-6
Total Costs	36.54	36.71	-
Net Margin	**24.80**	**7.24**	**-71**

Source: Teagasc National Farm Survey Data

Table A2: Average Net Margin per hectare* in 2022 and 2023

		2022	2023	% Change
Milk Produced	litres/ha	12,234	11,617	-5
Total Gross Output	€/ha	7,466	5,200	-30
Total Costs	€/ha	4,424	4,213	-5
Net Margin	€/ha	**3,078**	**922**	**-70**

* Hectare of forage area allocated to the dairy enterprise

Source: Teagasc National Farm Survey Data

Table A3: Output, costs and margin (cent per litre) for Top, Middle and Bottom one-third of farms in 2023

	Top	Middle	Bottom
		cent per litre	
Gross Output	45.77	43.82	42.30
Concentrate Feeds	8.34	8.59	10.59
Pasture & Forage	6.45	6.89	7.49
Other Direct Costs	5.10	4.92	5.69
Electricity & Fuel	2.48	3.06	3.55
Labour	1.68	0.59	0.68
Other Fixed Costs	10.56	11.08	12.36
Total Costs	34.62	35.14	40.37
Net Margin	**11.14**	**8.68**	**1.94**

Source: Teagasc National Farm Survey Data

Table A4: Output and profit per hectare for Top, Middle and Bottom one third of farms in 2023

		Top	Middle	Bottom
Stocking rate	cows/ha	2.48	2.13	1.74
Milk produced	litres per ha	14,874	11,515	8,496
Concentrates fed per cow	kg	1,253	1,161	1,236
Concentrates fed per litre of milk produced	kg	0.20	0.21	0.25
Gross output	€ per ha	6,804	5,030	3,591
Direct Costs	€ per ha	2,994	2,374	2,022
Gross Margin	€ per ha	**3,810**	**2,656**	**1,569**

Source: Teagasc National Farm Survey Data

Table A5: Average Gross and Net Margin per litre of Milk Produced 2022-2025f

	2022	2023	2024e	2025f
	cent per litre			
Total Gross Output	**61.34**	**43.96**	**50.55**	**53.08**
Concentrate Costs	8.83	9.18	8.78	8.02
Pasture and Forage Costs	6.68	6.95	6.26	5.87
Other Direct Costs	4.62	5.24	5.48	5.32
Total Direct Costs	20.13	21.36	20.53	19.22
Gross Margin	**41.21**	**22.60**	**30.02**	**33.86**
Electricity and Fuel	3.17	3.03	3.00	2.90
Hired Labour	1.02	0.98	1.04	1.00
Other Fixed Costs	12.22	11.34	12.70	12.83
Total Fixed Costs	16.41	15.35	16.74	16.73
Total Costs	36.54	36.71	37.27	35.95
Net Margin	**24.80**	**7.24**	**13.28**	**17.13**

Source: Teagasc National Farm Survey Data. Figures for 2024 are estimates, Figures for 2025 are forecasts.

Cattle Farming in 2023
Average performance

Irish Cattle Slaughter
1.870 million head (down 2.1%)

Live Exports
322,684 head (up 12.7%)

Irish Suckler Cow Numbers
0.82 million (down 5.0%)

Weanling purchase price
average €844/head (up 0.8%)

Male Store purchase price
average €1,127/head (down 1.5%)

Female Store purchase price
average €1,001/head (up 5.4%)

Male Finished Animals Price
average €1,748 per head (down 4.2%)

Female Finished Animals Price
average €1,644 per head (up 4.4%)

Gross Margin
(Single Suckling)
average €499 per hectare (down 11.0%)

Gross Margin
(Cattle Finishing)
average €663 per hectare (down 11.0%)

Stocking Rate (Calf to Weanling)
average of 1.18 lu/ha (up 1.1%)

Stocking Rate (Calf to Store)
average of 1.43 lu/ha (up 2.4%)

Stocking Rate (Calf to Finishing)
average of 1.59 lu/ha (up 2.8%)

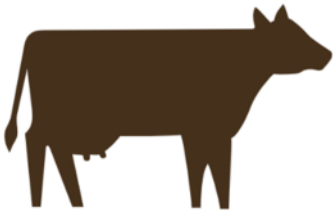
Stocking Rate (Cattle Finishing)
average of 1.44 lu/ha (up 6.9%)

Concentrate Fed/LU
(Cattle Finishers)
average 701 kg (up 11.7%)

Slaughter Weight/Head
average 320.5 kg (down 1.4%)

Total Production Costs
(Single Suckling)
average €1,176 per hectare (down 5.4%)

Total Production Costs
(Cattle Finishing)
average €1,525 per hectare (up 5.7%)



Source: Teagasc National Farm Survey, Central Statistics Office and Dept. of Agriculture, Food and the Marine

Irish Cattle Farming in 2024

R3 Steer price
4% on the 2023 level

Weanling and Store prices
4% on the 2023 levels

Beef calf prices
10% on the 2023 level

Weather Conditions
Less favourable weather in spring and summer

Grass Availability
Below normal for the year as a whole

Fertiliser Prices
30% on the 2023 level

Fertiliser Use
Finishers - 5% on 2023 level
Sucklers - no change

Feed Prices 14% on 2023

Feed use
Finishers - 11% on 2023
Sucklers - 8% on 2023

Other Direct Costs
3% on the 2023 level

Fuel prices
no change on the 2023 level

Total Input Costs (Suckler)
7.5% on the 2023 level

Total Input Costs (Finisher)
6.5% on the 2023 level

Gross Margin (Suckler)
16% on the 2023 level

Gross Margin (Finisher)
13% on the 2023 level

Source: Teagasc Estimates for 2024 and Forecasts for 2025

Irish Cattle Farming in 2025

R3 Steer prices
4% on the 2024 level

Weanling and Store prices
2% and 4% on the 2024 levels respectively

Beef calf prices
no change on the 2024 level

Weather Conditions
Normal weather assumed

Grass Availability
Normal conditions

Fertiliser Prices
5% on the 2024 level

Fertiliser Use
no change on the 2024 level

Feed Prices no change on 2024

Feed use
Finishers - 11% on 2024
Sucklers - 8% on 2024

Other Direct Costs
2% on the 2024 level

Fuel prices
3% on the 2024 level

Total Input Costs (Suckler)
1% on the 2024 level

Total Input Costs (Finisher)
3% on the 2024 level

Gross Margin (Suckler)
10% on the 2024 level

Gross Margin (Finisher)
8% on the 2024 level

Review of Cattle Farming in 2024 and Outlook for 2025

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1. Introduction

This paper presents estimates for the returns from cattle production in 2024. The paper contains a review of the economic performance of Irish cattle farms in 2023 based on data provided by the Teagasc National Farm Survey 2023 (Dillon et al. 2024). The paper also includes forecasts for the economic situation on Irish cattle farms in 2025.

Average R3 steer prices were between €5.40 per kg and €5.50 per kg (including VAT) during most of H1 2024. Beef prices declined in July and August to approximately €5.25 per kg. The seasonality of beef prices was, however, much less evident in 2024 relative to 2023. Beef prices began to increase in October and are much stronger in Q4 2024 relative to Q4 2023. In 2024, the annual average steer and heifer prices were 4 percent higher relative to 2023. Prices for store animals and weanlings also increased by approximately 4 percent.

In 2024, the volume of prime male cattle slaughtered decreased by 2.5 percent relative to 2023. However, an increase in the heifer kill means that the overall number of prime cattle slaughtered was similar in 2024 relative to 2023. Total prime beef production decreased by 1 percent relative to 2023 due to a decline in carcass weights. Overall, total national beef production increased by 1 percent in 2024 but this increase is entirely due to an increase in dairy cow slaughter.

Prices for many inputs declined in 2024. Concentrate feed prices were 14 percent lower in 2024 relative to 2023. Despite significant increases in feed use, it is estimated that total feed expenditure is slightly lower on cattle farms in 2024. Fertiliser prices declined by approximately 30 percent in 2024 and this supported a reduction in input costs for cattle farmers. In terms of other expenditures, electricity prices were lower in 2024 relative to 2023 with motor fuel prices similar to 2023.

Grass-growing conditions varied during 2024. Grass growth rates were lower than normal in April due to high rainfall levels. Grass growth rates were also below normal for much of the summer months. However, grass growth rates were reasonably good in the autumn. Overall, growing conditions influenced the demand for concentrate feed with an estimated 11 percent increase in the quantity of concentrates used on the average Cattle finishing enterprise and an estimated 8 percent increase on the average Single Suckling enterprise.

The average gross margin on Single Suckling farms is estimated to have increased by 16 percent in 2024 to an estimated €582 per hectare. It is estimated that overhead costs increased by 1 percent on a per hectare basis. The average Single Suckling enterprise is estimated to have a net margin of €78 per hectare in 2024.

The gross margin per hectare on the average Cattle Finishing enterprise is estimated to be 13 percent higher in 2024 leading to an estimate of €753 per hectare. On average, Cattle Finishing farms are estimated to have earned positive net margins in 2024. The average Cattle Finishing enterprise net margin is estimated to be €131 per hectare in 2024.

Margins earned on cattle farms in Ireland are influenced by beef supply and demand on Ireland's export markets. The quantity of beef consumed in the EU is estimated to be 1.7 percent lower in 2024 (European Commission 2024a). Total EU beef supplies are estimated to have increased in the first 8 months of 2024 relative to the same period in 2023 (European Commission 2024b).

In 2024, beef retail consumption in the UK is stable in volume terms. Rising consumer prices mean that the total consumption value is higher in 2024 relative to 2023 (AHDB 2024c). UK beef production is slightly higher in 2024 relative to 2023 (AHDB 2024c). During 2024, the value of the euro currency has weakened relative to sterling (Central Bank of Ireland 2024). Overall, these are positive developments for the beef sector in Ireland given the importance of exports to the UK.

At a global level, there continues to be an important shift in the demand for beef. In 2024, the domestic consumption of beef and veal is estimated to have increased by 4.2 percent in China. In contrast, beef consumption decreased by 9 percent in Argentina,

with smaller changes in other parts of the world. Global consumption of beef and veal is approximately 2 percent higher in 2024 relative to 2023. Global beef consumption in 2025 is expected to be 0.7 percent lower relative to 2024 (USDA, 2024a).

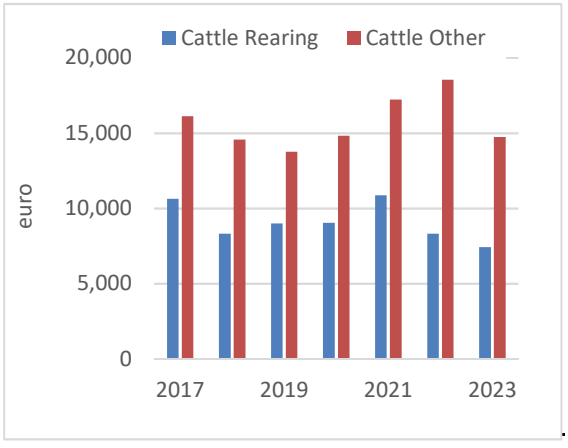
In 2024, there were important shifts in global trade with the United States estimated to have increased beef imports by 17.5 percent relative to 2023 (USDA 2024a). This increase in imports is associated with the decline in beef production and herd size in the United States, which appears linked to increased episodes of drought (USDA 2024b). The FAPRI Missouri baseline model forecasts that total beef production in the United States will continue to decline in 2025 but will begin to increase in 2026 (FAPRI 2024).

Unless stated otherwise, all figures referred to in this paper are in nominal terms and all enterprise output and profit estimates exclude the value of decoupled income support payments and are expressed per hectare.

2. Review of the Economic Performance of Beef Farms in 2023

The trends in average family farm income (FFI) for the two types of cattle farm systems identified in the Teagasc NFS over the period 2017 to 2023 are shown in Figure 1. In 2023, the average FFI on Teagasc NFS *Cattle Other* farms decreased by 19 percent compared with 2022 levels while the average FFI on Teagasc NFS *Cattle Rearing* farms decreased by 15 percent compared to 2022.

Figure 1: Average Family Farm Income on Cattle Rearing and Cattle Other Farm Systems: 2017 to 2023



Source: 2023 Teagasc National Farm Survey (2024)

2.1 Irish Beef Enterprise Performance in 2023

This section discusses the output and cost structure of Single Suckling and Cattle Finishing enterprises in Ireland.

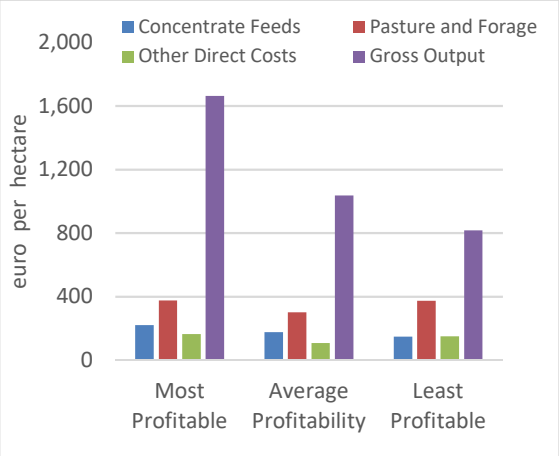
In this year's enterprise analysis, we continue to present results based on the two way categorisation of Irish cattle enterprises: Single Suckling and Cattle Finishing enterprises first used in Breen and Hanrahan (2012) and as in the Teagasc NFS cattle enterprise fact sheets (Teagasc, 2024a and 2024b).

Single Suckling enterprises in the analysis that follows are enterprises with more than 10 cows, while the Cattle Finishing enterprises analysed are those with more than 10 livestock units where more than 70 percent of the animals sold off the farm were sold for slaughter. In total, these two enterprises were present on more than 32,500 farms nationally.

Farms with these enterprises have been ranked on the basis of gross margin earned per hectare and each farm enterprise group has been broken into three equally sized sub-groups, which we have termed farms that are least profitable, those that have average profitability and those that are most profitable.

Single Suckling: In 2023, the average direct costs of production per hectare for Single Suckling enterprises varied from €585 on the middle-third of profitable farms to €759 on the top one-third of profitable farms (see Figure 2).

Figure 2: Variation in Total Production Costs and Gross Output on Single Suckling enterprises in 2023



Source: 2023 Teagasc National Farm Survey (2024)

The cost of concentrate feed, along with the cost of pasture and winter forage typically accounts for

approximately 80 percent of the direct costs of production on these farms. The average expenditure on concentrate feed varied from €148 per hectare on the bottom third of farms to €221 per hectare on the most profitable farms.

There was considerably more variability in the average gross output per hectare between the least profitable and most profitable farms. The most profitable one-third of Single Suckling enterprises achieved an average gross output of €1,662 per hectare, compared with an average gross output of €817 per hectare on the least profitable one third of Single Suckling enterprises. This variability in average gross output is largely due to higher average stocking rates on the more profitable farms. In 2023, the most profitable Single Suckling enterprises had an average stocking rate of 1.68 livestock units (LU) per hectare compared with 1.17 LU per hectare on those Single Suckling enterprises with the lowest levels of profitability.

The capacity of farms to operate at high stocking rates is in part determined by the quality of the land farmed. In 2023, 54 percent of the most profitable Single Suckling enterprises farmed very good soils, whereas the proportion of the least profitable Single Suckling farms on very good soils was considerably lower at 22 percent.

The most profitable one-third of Single Suckling enterprises in 2023 had an average gross output per hectare that was over double the average output per hectare on the least profitable one-third of enterprises. However, the average direct costs per hectare were only 13 percent higher for the most profitable group.

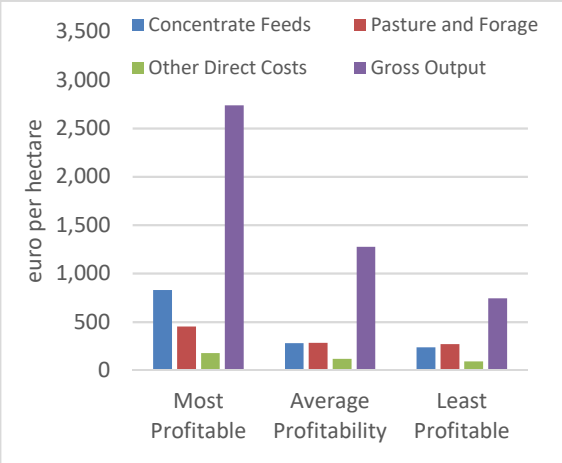
Cattle Finishing: The second cattle enterprise category analysed is the Cattle Finishing enterprise. The enterprises analysed were again ranked on the basis of gross margin per hectare and assigned to three equally sized groups in terms of profitability termed *least, average* and *most profitable*.

Average direct costs of production per hectare were highest on the most profitable farms and lowest on those farms in the middle third of profitability (see Figure 3). Total expenditure on concentrate feed is substantially higher on Cattle Finishing enterprises than on Single Suckling enterprises. The most profitable one-third of Cattle Finishing enterprises had a gross output of €2,737 per hectare compared with €744 per hectare on the least profitable Cattle Finishing enterprises.

Relative to the Single Suckling enterprise, there is a larger degree of heterogeneity in gross output per hectare across the Cattle Finishing enterprises analysed. This diversity reflects the differing levels of production intensity on these farms. The average stocking rate on the least profitable Cattle Finishing enterprises was 1.08 LU per hectare, while the average stocking rate on the most profitable one-third of Cattle Finishing enterprises was 1.89 LU per hectare.

In general, more profitable Cattle Finishing enterprises were on farms with better soils, 76 percent of the most profitable Cattle Finishing enterprises farmed very good soils compared to 50 percent of the least profitable farms.

Figure 3: Variation in Total Production Costs and Gross Output on Cattle Finishing Enterprises in 2023



Source: 2023 Teagasc National Farm Survey (2024)

The results presented in Figure 2 and Figure 3 highlight the differences in costs per hectare on Single Suckling and Cattle Finishing enterprises. However, it is important to recall that there is even greater variation in gross output across different farm enterprises. While higher levels of gross output per hectare are in general associated with higher levels of direct costs of production and farming on better than average soils, the difference in technical performance and productivity between the top one-third and bottom one-third of Cattle Finishing enterprises remains striking.

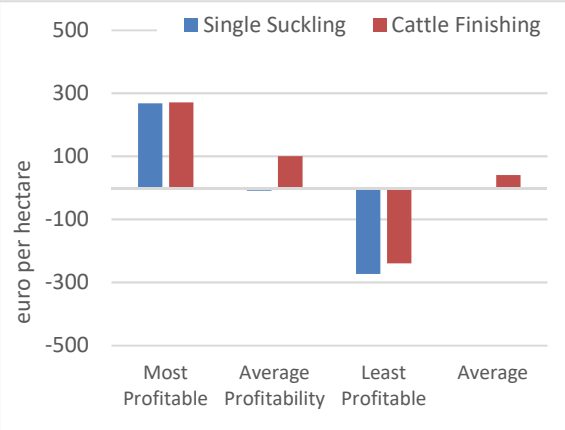
Average overhead costs per hectare on the Cattle Finishing and Single Sucking enterprises were €622 and €505 per hectare respectively (see Appendix Table A1 and Table A2 at the end of this paper). On a whole farm basis, the total overhead expenditures tend to be higher on Cattle Finishing enterprises due to their relatively larger farm size.

On Single Suckling farms, the net margins improved in 2023 relative to 2022 due to higher live cattle

prices and a decline in overhead costs. In 2023, the net margins declined on Cattle Finishing enterprises. This decline can be attributed to a decline in the volume of cattle finished and a rise in concentrate feed costs. On average, Cattle Finishing enterprises in 2023 earned a better net margin per hectare relative to the average Single Suckling enterprise. The average net margin is reported as positive for the Cattle Finishing enterprise in 2023 (+€41 per hectare) but is reported as negative for the average Single Suckling enterprise (-€5 per hectare).

Figure 4 shows the net margins earned on the two cattle enterprises analysed. Figure 4 illustrates that in 2023 only the most profitable one-third of Single Suckling enterprises earned positive net margins and that the level of these margins was relatively low. In the case of Cattle Finishing enterprises, the top and middle third of profitability earned positive net margins.

Figure 4: Cattle Enterprise Net Margins per hectare in 2023



Source: 2023 Teagasc National Farm Survey (2024)

3. Estimated Performance of Irish Cattle Farms in 2024

This section of the paper presents an estimate of the economic performance of Irish cattle enterprises in 2024. A discussion of the estimated changes in input usage and input costs in 2024 is first presented and this is followed by a discussion of estimated changes in output value. Estimates of margins earned by Single Suckling and Cattle Finishing enterprises in 2024 are then presented.

Estimates for 2024 margins are based on relatively small changes in the intensity of production per hectare on the average cattle finishing farm. The impact of changes in the intensity of production on individual enterprises would be expected to vary from farm to farm. In some cases, a change in intensity may increase profitability, in others it could give rise to lower margins. In 2024, prime beef production in 2024 is similar to 2023. Suckler cow inventories declined in 2024 relative to 2023 (DAFM 2024c).

3.1 Estimated Input Usage and Price 2024

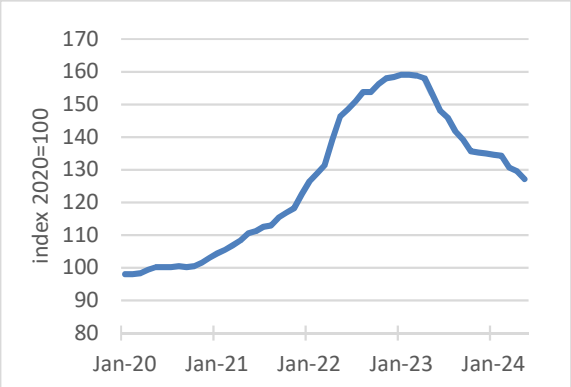
3.1.1 Feedstuffs in 2024

Purchased feed is an important element of the direct costs of beef production in Ireland. Typically, this cost item accounts for approximately 30 percent of total direct costs on Single Suckling enterprises and 45 percent of direct costs on Cattle Finishing enterprises.

In spring 2024, grass growing conditions were less favourable relative to previous years. This contributed to higher volumes of concentrate feed purchases by Cattle Finishing farms. The challenges associated with poor grass growth continued throughout the remainder of 2024 and have raised the importance of feed management entering the winter months (Mullins 2024). Overall, it is estimated that concentrate feed use increased by 11 percent per hectare on cattle finishing enterprises in 2024 relative to 2023. It is estimated that concentrate feed use increased by 8 percent per hectare on Single Suckling enterprises in 2024 relative to 2023.

Figure 5 presents the CSO monthly price index for cattle feed stuffs for the period January 2015 to August 2024. In August 2024, cattle feed prices were 13 percent lower relative to the prices reported in August 2023. As a result, we estimate that average cattle feed prices are 14 per cent lower in 2024 relative to 2023. This estimate accounts for the final quarter of the year.

Figure 5: Monthly Price Index of Cattle Meal in Ireland 2020 to 2024



Source: CSO (2024)

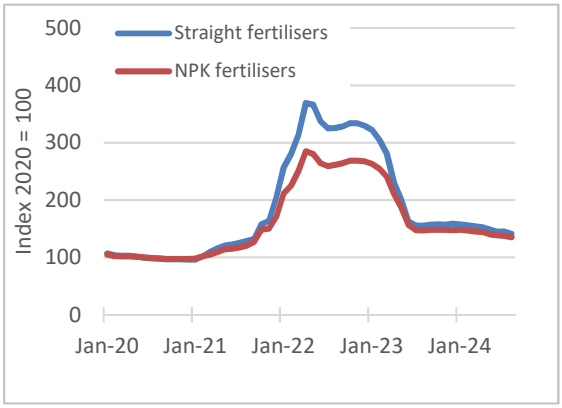
We estimate that expenditure on concentrates by cattle finishing farms in 2024 decreased by 4 percent relative to 2023. We estimate that expenditure on concentrates by Single Suckling farms in 2024 decreased by 7 percent relative to 2023.

3.1.2 Fertiliser in 2024

Figure 6 presents monthly data on fertiliser prices since 2020. Fertiliser prices increased dramatically in early 2022 but eventually began to decline in Q2 2023 with some further declines in 2024. The decrease in Irish fertiliser prices contributes to lower overall fertiliser expenditure on Irish cattle farms in 2024.

We estimate no change in contracting charges for 2024 compared to 2023. Overall expenditure on pasture and forage by cattle farmers in 2024 is estimated to have been lower than in 2023 and this decline is entirely attributed to reductions in fertiliser expenditure.

Figure 6: Monthly Price Index of Fertiliser in Ireland from 2020 to 2024



Source: CSO (2024)

3.1.3 Electricity and Fuel in 2024

Average fuel expenditure on Irish cattle farms is estimated to be unchanged in 2024 relative to the 2023 level. Due to a decline in prices, the average electricity expenditure on Irish cattle farms is estimated to have declined by 18 percent in 2024 relative to 2023.

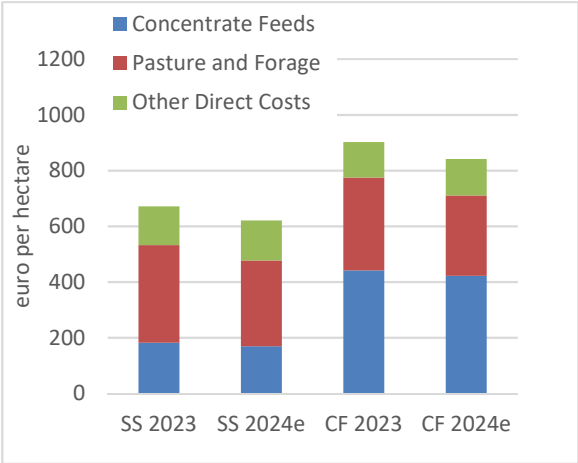
3.1.4 All Other Direct and Overhead Costs– usage and price 2024

Hourly wages in Ireland are estimated to have increased by 5 percent in 2024; however, given the low usage of hired labour on Irish cattle farms, this development does not have a major impact on costs of production. Increased veterinary costs contribute towards an estimated 3 percent increase in other direct costs for the average cattle enterprise in 2024.

3.1.5 Estimate of Total Direct Costs for 2024

Figure 7 compares the average direct costs of production for the Single Suckling and Cattle Finishing enterprises in 2023 with the estimated direct costs for 2024.

Figure 7: 2023 Direct Costs and Estimated 2024 Direct Costs for Single Suckling (SS) and Cattle Finishing (CF) Enterprises



Source: 2023 Teagasc National Farm Survey (2024) and Author's Estimates 2024

On average, total direct costs are estimated to have decreased by 7.5 percent on Single Suckling farms and by 6.5 percent on Cattle Finishing farms in 2024. These declines are due to reduced expenditure on concentrate feed and fertiliser. Feed use on Cattle Finishing farms increased significantly in 2024 (11 percent) and on Single Suckling farms (8 percent). However, the lower concentrate feed prices (14 percent) mean that concentrate feed expenditure is lower on both enterprises.

In 2024, there are limited changes in total overhead costs. The overall costs of production in 2024 are estimated to have increased by 1 percent on both Single Suckling and Cattle Finishing farms.

3.2 Estimated Output Values 2024

The value of gross output on Single Suckling enterprises is estimated to have increased in 2024, with higher average prices for weanlings and store cattle observed during the important autumn months.

In our estimates for 2024, we have included the payments made to cattle farmers under the Suckler

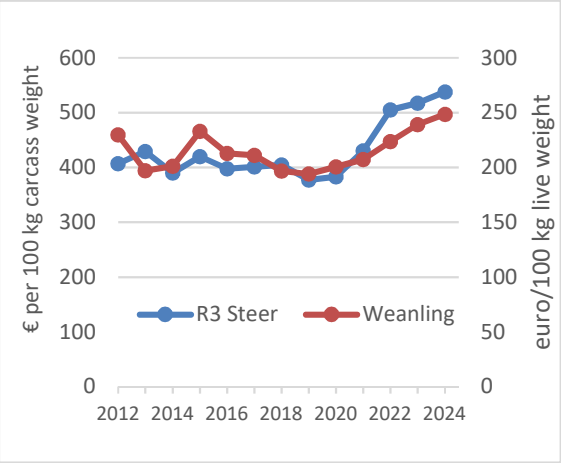
Carbon Efficiency Programme (SCEP) and the National Beef Welfare Scheme (NBWS). The payments under these schemes are contingent on farmers undertaking specified measures. These schemes are discussed in some detail in two Teagasc Beef Edge podcasts (Egan 2023a; Egan 2023b).

These two schemes contribute to our estimates of gross output value in 2024. We estimate no change in coupled payments in 2024 relative to 2023 for the average Single Suckling enterprise. This estimate represents the average situation for all such farms. However, some cattle farms with suckler cows are not participating in these schemes and receive no payments on a per hectare basis. Some farms may be participating in one of these schemes. For farms participating in these schemes, the actual payments per hectare are therefore significantly larger than the average estimates suggest.

Figure 8 presents average R3 steer and weanling prices for the period 2012 to 2023 and an estimate for 2024. The weanling price refers to the value of bullocks in the 300-349 kg weight bracket.

The estimated annual average R3 base steer price for 2024 of around €538/100kg (including VAT) represents a 4 percent increase on the price level in 2023. The estimated average weanling price (300-349kg) is estimated to be approximately 4 percent higher in 2024 relative to 2023. The increase in weanling prices could be attributed to some optimism about economic returns in the short-term as a result of expected reductions in beef supply in some key export destinations.

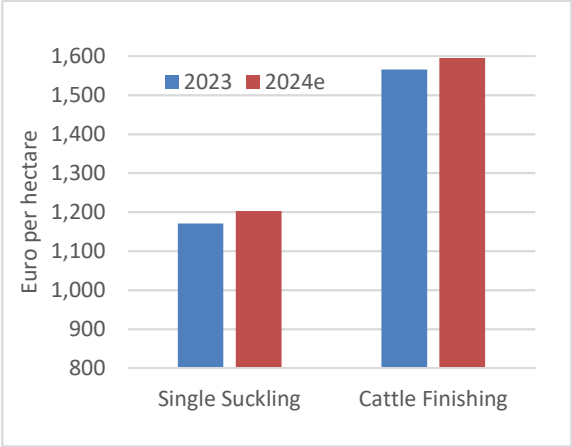
Figure 8: Finished and Live Cattle Prices in Ireland 2012 to 2024



Source: DG Agri. and CSO; * Author's estimate 2024

Figure 9 shows that the average gross output in 2024 is estimated to be higher than the levels observed in 2023. In 2024, the value of output per hectare on Single Suckling farms is estimated to be €1,203 (an increase of 3 percent on the level in 2023). In 2024, the value of output per hectare on Cattle Finishing farms is estimated to be €1,595 in 2024 (an increase of 2 percent on the level in 2023). On both Single Suckling farms and Cattle Finishing farms, the increases in Gross Output are due to increases in output prices exceeding the effect of declines in the volume of production.

Figure 9: 2023 Gross Output for Single Suckling (SS) and Cattle Finishing (CF) Enterprises and Estimate for 2024



Source: 2023 National Farm Survey (2024) and Author's Estimates 2024

In 2024, the average Gross output per hectare was higher on Cattle Finishing enterprises than for Single Suckling enterprises. This largely reflects the higher stocking density per hectare on these farms.

There is a large degree of variation in the value of gross output per hectare between the least profitable, those with average profitability and most profitable groups of Cattle Finishing enterprises. Table A2 shows that the most profitable Cattle Finishing enterprises in 2024 are estimated to have produced an average level of gross output per hectare (€2,789 per hectare) that was 350 percent higher than the average value of output per hectare on the least profitable group of Cattle Finishing enterprises (€759 per hectare).

3.3 Beef Enterprise Margin Estimates for 2024

As shown in Figure 7, the estimated expenditure on concentrate feed by finished cattle enterprises decreased in 2024. On both the Single Suckling and Cattle Finishing enterprises, expenditure on pasture and forage decreased in 2024. Total direct costs on

both enterprises are therefore estimated to have decreased in 2024.

On Single Suckling enterprises in 2024, the margins are higher relative to 2023. Single Suckling enterprises in 2024, are on average estimated to have a net margin of €78 per hectare. For the average Cattle Finishing enterprise, net margins on a per hectare basis are estimated to have increased in 2024. Cattle Finishing enterprises are estimated to have earned a positive net margin of €131 per hectare.

Table A1 and Table A2 decompose the Single Suckling and Cattle Finishing population into 3 groups of equal number on the basis of profitability (gross margin per hectare) and presents estimates of gross output, direct costs, gross margin and net margin for 2024.

For both the Cattle Finishing and Single Suckling enterprises, the top one-third of farmers earned positive net margins in excess of €300 per hectare. In 2024, the average net margin is slightly positive for the middle-third of farmers in both enterprises. For both enterprises, the bottom one-third of farmers are estimated to have experienced negative net margins in 2024.

4. Outlook for 2025

In this section, we forecast the expenditure for various input items and the beef price that is most likely to prevail in 2025. We provide a forecast of the incomes from the production of cattle in 2025.

4.1 The Outlook for Input Expenditure

4.1.1 Feedstuffs in 2025

Global cereal and oilseed futures market prices point to no change in feed prices in 2025. An 11 percent reduction in the volume of feed used on Cattle Finishing enterprises is forecast for 2025. Our forecast is for an average 8 percent decrease in overall feed volume used on Single Suckling enterprises in 2025. These forecasts are based on the assumption of normal weather conditions in 2025.

4.1.2 Fertiliser in 2025

Given the developments in global supply and demand, the outlook for international fertiliser prices in 2025 is for the price of fertilisers to be slightly lower relative to 2024. In our 2025 forecast, we forecast that total expenditure on pasture and forage by Irish cattle farmers will be slightly lower relative to the 2024 level.

4.1.3 Electricity and Fuel in 2025

Fuel costs in 2025 will depend mainly on the evolution of crude oil prices. Current futures prices suggest that crude oil prices will decrease in 2025 relative to 2024 prices. Our forecast is that fuel prices in 2025 will be similar to those paid in 2024.

4.1.4 Other Direct and Fixed Costs in 2025

The cost of labour is forecast to increase by 3 percent in 2025. However, on the average Irish cattle enterprise hired labour costs are very small and inflation in labour costs is not expected to have a major impact on overall costs of production. We forecast an increase in other direct costs of 2 percent in 2025. This is mainly attributed to a forecast increase in veterinary costs. Other overhead (fixed) costs are forecast to be 1 percent higher in 2025.

4.2 The Outlook for Cattle and Beef Markets 2025

Ireland exports close to 90 percent of its beef production (CSO 2024b). Conditions in markets to which Irish beef and cattle are exported largely determine Irish cattle prices; though supply developments in Ireland can cause Irish cattle prices to deviate from export market prices over the short run.

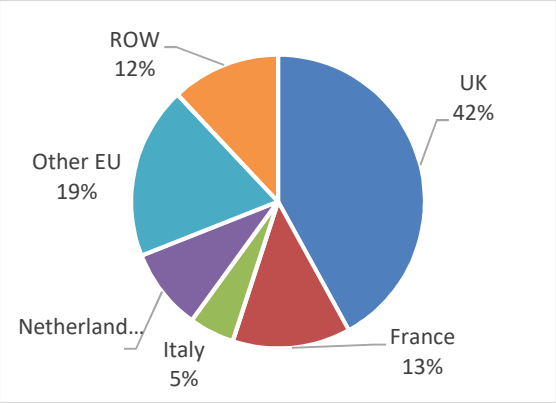
Figure 10 illustrates the destinations of Irish beef exports in 2024 (year to the end of August). The UK remains the most important export destination for Irish beef with a current export share of 42 per cent. The importance of the EU in Ireland's beef exports is also evident from Figure 10.

France remains the EU member state with the highest export share of Irish beef exports at 13 percent. Exports to the Netherlands and Italy remain important with export shares of 9 percent and 5 percent respectively. The share of exports to the rest of the world (ROW) remains significant at 12 percent.

In recent years, there has been a notable increase in the volume of exports to EU markets including France. However, both consumption and overall imports of beef have declined in France during 2023 and 2024 (L'institut de l'élevage, 2024). The European Commission reports that the consumption of beef is declining in the EU-27 (European Commission 2024b). At the same time, beef production is also declining in many EU member states, which counters the negative effect of reduced demand.

In many Western European countries, consumer prices for beef appear stable or increasing slightly in 2024 (INSEE France 2024a, 2024b; Federal Statistics Office Germany 2024; Statistics Netherlands 2024). In the UK, the rise in beef steak prices continued in early 2024 and remained stable through the rest of the year (Office for National Statistics 2024).

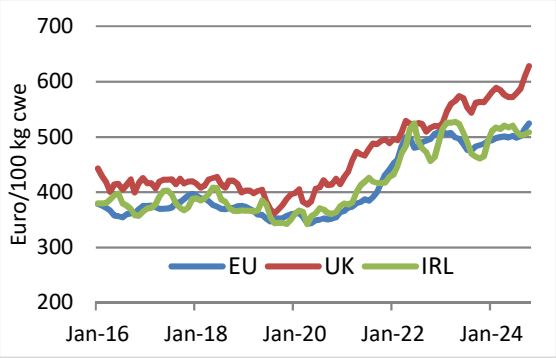
Figure 10: Estimate of Irish Beef Export Markets by Volume in 2024



Source: Eurostat COMEXT, January to August (2024)

Figure 11 shows a comparison of beef prices in Ireland with the EU and UK. Figure 11 shows that beef prices in the UK continued to increase during 2024. The AHDB reports more detailed statistics according to UK region (AHDB 2024b).

Figure 11: Monthly EU, UK and Irish Finished Cattle Prices 2016 to 2024 (Excl. VAT)



Source: DG Agriculture and Rural Development, AHDB and ECB. Ireland and UK Steer R3, EU27 Young Bull R3.

It is clear from Figure 11 that UK steer prices have tended to exceed Irish steer prices for most of the period. The preference among UK consumers for beef sourced in Britain provides one explanation for this long-run pattern.

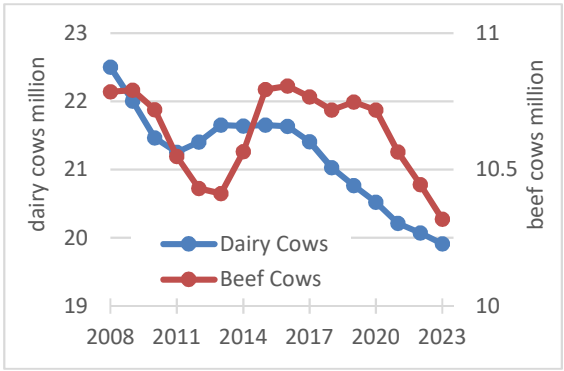
However, the gap between UK and Irish prices (October 2024) significantly exceeds the long run average of approximately 10 percent. Given the extent of interdependence between the UK and the beef sector in Ireland, we may therefore anticipate some partial convergence in British and Irish beef prices over the coming months.

In the short run, the outlook for prime beef supplies in Ireland are determined by the current inventories of animals aged 1-2 years. Data from the Department of Agriculture, Food and the Marine (DAFM) AIMS database provide insights into developments in these inventories. Inventories for animals aged 12-24 months of age are significantly lower relative to the levels observed 12 months previously. Overall, we forecast a 4 percent decrease in prime beef production for 2024.

In the rest of the EU, supplies of cattle for slaughter in 2024 are likely to be lower than 2023. Overall EU production of beef in 2025 is forecast to be 1.0 percent lower in 2024 (European Commission 2024c). In the UK, the inventories for animals aged 12-24 months of age appear lower in June 2024 relative to June 2023 (DEFRA 2024b). This points to a decline in UK beef production during 2025.

In the medium term, inventories of breeding animals are the key determinant of future beef supply. Figure 12 illustrates the recent trends in dairy and beef cow inventories in the EU (readers should note the different scales on the left and right axes). In anticipation of the abolition of EU milk quota in April 2015, the numbers of dairy cows in the EU increased, however low levels of profitability in many member states subsequently reversed this trend.

Figure 12: EU27 Cow Numbers 2008 - 2023



Source: Own elaboration based on Eurostat (2024)

Dairy cows account for approximately two-thirds of the stock of cows in the EU. Under the CAP, many Member States have coupled direct payments related to both numbers of dairy and suckler cows and these policy measures will tend to mitigate some of the impact of on-going low levels of profitability on cow numbers. Beef cow numbers declined in 2023 in many EU member states

including Ireland, France and Spain. Dairy cow numbers declined notably in France and Germany in 2023 and to a lesser extent in some other EU member states. Poland is an exception where the number of dairy cows increased strongly in 2023.

In the UK, there are notable declines in the size of the breeding herd and particularly for non-dairy cows. This points to some further contraction in UK beef production in the medium-term (beyond 2024).

Our forecast is for a 4 percent increase in the annual average finished cattle price in 2025 relative to the annual average in 2024. This equates to a price of approximately €560/100kg (including VAT) for the average R3 steer.

In 2025, a decrease in some input prices is expected to impact positively on Cattle Finishing enterprises. A rising demand for the purchase of younger cattle can emerge due to the expected contraction over the medium-term in beef production in the EU and the UK. A slight improvement in margins earned on the Cattle Finishing enterprise will further support this demand. Our forecast is that prices for weanling and store cattle will increase by 2 percent and 4 percent respectively in 2025 relative to the 2024 levels. Gross output for the average Single Suckling enterprise is therefore forecast to be higher relative to the estimated 2024 levels.

4.2.1 Outlook for Beef Enterprise Net Margins in 2025

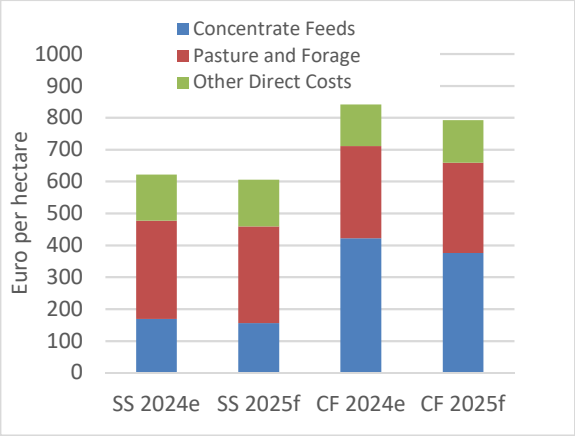
In 2025, the evolution of the net margin on cattle farm enterprises will be influenced by cattle sales, cattle purchases and input expenditures.

Figure 13 compares the estimated and forecast average direct costs per hectare in 2024 and 2025 for the Single Suckling and Cattle Finishing enterprises. On both enterprises, the level of expenditure on pasture and forage is expected to be slightly lower in 2025 relative to 2024. This is mainly due to the forecast of a slight reduction in the price of fertiliser.

Concentrate feed prices are forecast to be unchanged in 2025 relative to 2024. After significant increases in 2023 and 2024, the quantity of concentrate feed usage on Cattle Finishing farms is forecast to decrease by 11 percent. This forecast is based on the assumption of normal weather conditions in 2025. Expenditure on concentrate feed is forecast to be 11 percent lower on Cattle Finishing enterprises and 8 percent lower on Single Suckling enterprises in 2025.

On a per hectare basis, the direct costs are forecast to decrease by 3 percent on the average Single Suckling enterprise and by 6 percent on the average Cattle Finishing enterprise.

Figure 13: Estimated Direct Costs for 2024 and Forecast Direct Costs for 2025

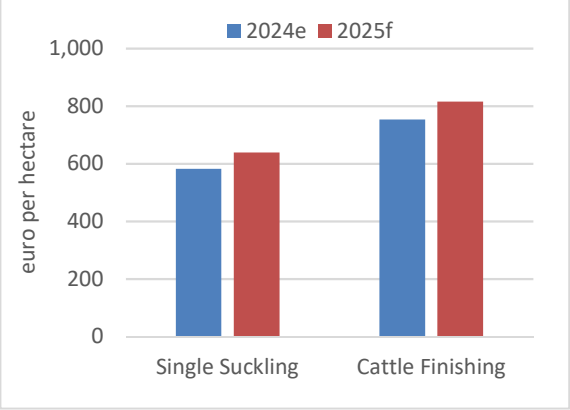


Source: Author's Estimates 2024 and Forecasts 2025

Figure 14 shows the estimated gross margin on both cattle enterprises in 2024 and the forecast gross margins for 2025. For 2025, the gross margin for the average Single Suckling enterprise is forecast to increase by approximately 10 percent. On a per hectare basis, the gross margin for the average Cattle Finishing enterprise is forecast to increase by approximately 8 percent in 2025.

Net margins on average Cattle Finishing farms are forecast to be higher in 2025 relative to 2024 with a forecast average net margin of €191 per hectare. Net margins for the Single Suckling enterprise are forecast to improve in 2025 relative to 2024. A positive net margin per hectare of €133 is forecast for 2025.

Figure 14: 2024 Gross Margin for Single Suckling (SS) and Cattle Finishing (CF) Enterprises and Forecasts for 2025



Source: Author's Estimates for 2024 and Forecasts for 2025

5. Concluding Comments

In 2024, there were some improvements in relation to the economics of cattle farming in Ireland. Cattle prices were much stronger in H2 2024 relative to H2 2023. Input prices declined for key inputs including feed and fertiliser. Young cattle prices performed well during the autumn and this pointed to some optimism among cattle finishers about economic returns over the short-term.

On a per hectare basis, gross and net margins for Cattle Finishing enterprises are estimated to be higher in 2024 relative to 2023. This is mainly attributed to an improvement in finished cattle prices. In 2024, margins improved on Single Suckling farms due to an increase in young cattle prices and some declines in input prices. The NBWS scheme and particularly the SCEP scheme supported gross output and gross margins on many Single Suckling farms.

In the short-term, the markets for beef remain strong globally with beef production in the United States set to be at its lowest level since 2016. The recent declines in the breeding cattle herd in the UK, France and Germany means that the prospects for beef prices in Ireland are reasonably good for the medium-term. A medium-term contraction in UK and EU beef supply can support the price of younger cattle in 2025. Margins on the average Single Suckling enterprise are forecast to improve in 2025.

Our forecast for 2025 is for a 4 percent increase in Irish finished cattle prices and a 2 percent increase for weanling prices. Assuming normal weather conditions, a decline in input costs can contribute to further improvements in the profitability on cattle farms in Ireland. However, a further decline in the volume of beef production is forecast in 2025. This means that beef output value on the average Cattle Finishing enterprise is forecast to be only 1 percent higher in 2025 relative to 2024.

The levels of profit forecast for both Cattle enterprises in 2025 are above the averages observed over the period 2015-2024. For Cattle Finishing enterprises, in particular, the average profit levels appear higher in the last five years (2020-2024) relative to the previous five year period (2015-2019).

On both enterprises, a large number of farms continue to have negative profitability, when decoupled direct payments are excluded. This means that many enterprises are unable to consistently cover their costs of production with the value of output sold. This on-going lack of profitability reflects the structure of the industry and its high costs.

There is a continued challenge facing the wider Irish beef industry in developing new markets for Irish beef that will reduce the dependence of the industry on the UK market that has traditionally been Ireland's second "home" market. Consumer prices for beef in the UK remained strong in 2024 but there is a preference among UK consumers for beef sourced in Britain.

The estimates and forecasts contained in this analysis relate to two cattle enterprises, which account for the majority of cattle enterprises in Ireland. However, these estimates and forecasts do not fully address the overall farm income on cattle farms in Ireland. In particular, the contribution of subsidies and income from other farm enterprises are important components in the calculation of overall family farm income.

In the Teagasc National Farm Survey report, income statistics are published in relation to the Cattle Rearing system and the Cattle Other system (Dillon et al 2024). Our estimates indicate that family farm income increased on the Cattle Rearing system from €7,425 in 2023 to €9,500 in 2024 and on the Cattle Other system from €14,735 in 2023 to €17,000 in 2024. Our forecast is that family farm income will increase on the Cattle Rearing system to €10,800 in 2025 and on the Cattle Other system to €18,500 in 2025.

In addition to assumptions in relation to market prices and volumes of production, these numbers are based on the assumption that the composition of both cattle farm systems does not change from one year to the next. In practice, the average farm income can be influenced by changes in the composition of the farming system from one year to the next.

The forecast decline in domestic beef production may have some influence on beef prices in Ireland during 2025. However, the main concerns will relate to beef supply and demand in key export destinations and beef markets globally. The prospects for the beef sector appear relatively positive entering 2025. The general outlook for 2025 is for moderate improvements in the profitability of beef production in Ireland.

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Table A1: 2023 and Estimated 2024 Financial Performance per hectare: Single Suckling Enterprise

	Most Profitable	Average Profitability	Least Profitable	Average
		euro per hectare		
Gross Output 2023	1,662	1,036	817	1,171
Direct Costs 2023	759	585	671	672
Concentrate Costs	221	176	148	182
Pasture and Forage Costs	375	301	373	350
Other Direct Costs	163	108	150	140
Gross Margin 2023	903	451	146	499
Overhead Costs 2023	635	460	419	505
Net Margin 2023	268	-9	-273	-5
Gross Output 2024	1,708	1,064	840	1,203
Direct Costs 2024	703	540	620	621
Concentrate Costs	205	164	138	169
Pasture and Forage Costs	330	265	328	308
Other Direct Costs	168	111	154	144
Gross Margin 2024	1,004	524	220	582
Overhead Costs 2024	635	460	419	504
Net Margin 2024	370	64	-199	78

Source: Teagasc National Farm Survey Single Suckling Enterprise Fact Sheet 2023 (Teagasc NFS, 2024a) and Authors' Estimates 2024

Table A2: 2023 and Estimated 2024 Financial Performance per hectare: Cattle Finishing Enterprise

	Most Profitable	Average Profitability	Least Profitable	Average
		euro per hectare		
Gross Output 2023	2,737	1,275	744	1,565
Direct Costs 2023	1,457	680	599	902
Concentrate Costs	828	280	239	442
Pasture and Forage Costs	452	283	271	333
Other Direct Costs	177	117	90	127
Gross Margin 2023	1,280	595	145	663
Overhead Costs 2023	1,009	494	384	622
Net Margin 2023	271	101	-240	41
Gross Output 2024	2,789	1,299	759	1,595
Direct Costs 2024	1,365	633	555	842
Concentrate Costs	791	267	228	422
Pasture and Forage Costs	392	245	235	289
Other Direct Costs	182	121	93	131
Gross Margin 2024	1,425	666	203	753
Overhead Costs 2024	1010	494	385	623
Net Margin 2024	415	172	-182	131

Source: Teagasc National Farm Survey Cattle Finishing Enterprise Fact Sheet 2023 (Teagasc NFS, 2024b) and Authors' Estimates 2024

Table A3: Forecast 2025 Single Suckling Enterprise Financial Performance per hectare

	Average
	euro per hectare
Gross Output 2025	1,244
Direct Costs 2025	606
Concentrate Costs	156
Pasture and Forage Costs	303
Other Direct Costs	147
Gross Margin 2025	639
Overhead Costs 2025	506
Net Margin 2025	133

Source: Authors' forecasts for 2025

Table A4: Forecast 2025 Cattle Finishing Enterprise Financial Performance per hectare

	Average
	euro per hectare
Gross Output 2025	1,608
Direct Costs 2025	792
Concentrate Costs	376
Pasture and Forage Costs	283
Other Direct Costs	134
Gross Margin 2025	816
Overhead Costs 2025	625
Net Margin 2025	191

Source: Authors' forecasts for 2025

Mid Season Lowland Lamb Factsheet
Average Performance 2023

Irish Sheep Slaughter
3.174 million head (down 0.7%)

Irish Lamb Slaughter
2.75 million head (up 0.3%)

Sheep Meat Exports
77,000 tonnes cwe (up 2.7%)

Irish Breeding Sheep
2.97 million (down 2.8%)

Lamb price
€662/100kg (down 1.7%)

Lamb Carcass kg per ha
down 8%

Total Production Costs
(Mid Season Lowland)
€187 per ewe (down 2%)
€1,258 per ha (down 7%)

Gross Margin
(Mid Season Lowland)
€685 per hectare (down 22%)

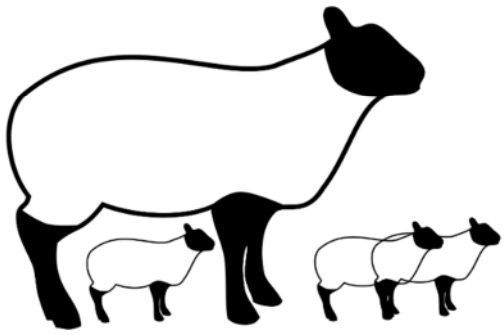
Net Margin
(Mid Season Lowland)
€103 per hectare (down 29%)

Stocking Rate
(Mid Season Lowland)
6.91 ewes/ha (down 4%)

Weaning Rate
(Mid Season Lowland)
1.31 lambs/ewe (down 5%)

Lamb Mortality
(Mid Season Lowland)
7% (up 8%)

Lambs Weaned/ ha
(Mid Season Lowland)
9.31 lambs/ha (down 8%)



Source: Teagasc National Farm Survey 2023 and Central Statistics Office
Note: Percentage changes are relative to 2022

Irish Sheep Farming in 2024

- **Higher EU lamb prices**
- **Lamb/Sheep Slaughter** down 10%
- **Lamb Prices** up 15%
- **Weather Conditions** below normal
- **Grass Availability** below normal
- **Fertiliser Prices** down 30% on the 2023 level
  Fertiliser Use up 5% on the 2023 level
- **Feed Prices** down 14% on 2023
  Feed use up 7% on 2023
- **Other Direct Costs** up 10% on 2023
- **Fuel prices** (Farm Diesel) down 4% the 2023 level
- **Total Direct Costs** down 8% on the 2023 level
- **Gross Margin per ha (Mid Season Lowland Lamb)** €831 (up 21% on 2023)

Source: Teagasc Estimates for 2024 and Forecasts for 2025

Irish Sheep Farming in 2025

- **Little movement in EU lamb prices**
- **Lamb/Sheep Slaughter** up 5% on 2024 level
- **Lamb prices** up 1% on 2024
- **Weather Conditions** normal weather assumed
- **Grass Availability** assumed normal
- **Fertiliser Prices** down 5% on the 2024 level
  Fertiliser Use down 5% on the 2024 level
- **Feed Prices** at 2024 level
  Feed use down 7% on 2024
- **Other Direct Costs** up 1% on the 2024 level
- **Fuel prices** (Farm Diesel) unchanged on 2024 level
- **Total Direct Costs** down 5% on the 2024 level
- **Gross Margin per ha (Mid Season Lowland Lamb)** €967 (up 16% on the 2024 level)

Review of Sheep Farming in 2024 and Outlook for 2025

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1. Introduction

For this paper, data from farms in the Teagasc National Farm Survey (NFS), which have a mid-season lowland lamb enterprise, are used together with data from the Central Statistics Office (CSO), European Commission DG Agri and Eurostat, to analyse the financial performance of Irish sheep farms. Estimates of enterprise margins for 2024 are based on 2023 Teagasc NFS data and on CSO price indices for the year to date (CSO, 2024a) and preliminary CSO price estimates for 2024 (CSO, 2024b). Forecasts for sheep enterprise margins for 2025 are based on our estimates of margins for 2024, and our forecasts of input and output price and volume changes in 2025.

We begin the paper with a brief review of the outturn for Family Farm Income (FFI) for the Teagasc NFS mainly sheep farms in 2023. A detailed assessment of the 2023 mid-season lowland lamb enterprise margins is then presented in section 3. This is followed by an overview of the current short term outlook for European and Irish sheep markets in section 4. Estimates and forecasts of margins for the mid-season lowland lamb enterprise for 2024 and 2025 are then presented in sections 5 and 6.

The mid-season lowland lamb enterprise is the predominant lowland sheep system in Ireland. In our analysis we have limited the sample analysed to those enterprises with more than 20 breeding ewes.

In our analysis of enterprise margins for 2025 we have included payments per breeding ewe for sheep welfare measures completed under the DAFM Sheep Improvement Scheme (SIS), funded under Ireland's CAP Strategic Plan (DAFM, 2022). The SIS initially ran from 1 February 2023 to 31 December 2023. From 2024, the scheme year will coincide with the calendar year, 1st January to 31st December 2024. The reference number of ewes on participating farms will be based on the number of breeding ewes declared on sheep census returns (historical census data) over the period 2016 to 2021 (DAFM , 2024c). The previous census returns will also determine flock type (lowland or hill). As in previous years, there will also be a provision for new entrants to sheep farming to apply and to join the Sheep Improvement Scheme.

We have assumed that the SIS payment will be paid on a per ewe basis, at a rate of €12 per ewe for 2024 year and 2025. At an average stocking rate of approximately 7 ewes per hectare, this is equivalent to €84 per hectare. However, based on average actual payments per hectare under the Sheep Welfare Scheme over the past number of years a lower estimate of €60 per hectare is applied.

The Budget 2024 announcement contained a further important measure to support the sheep farming sector. The National Sheep Welfare Scheme (SWS) aimed to assist farmers in producing better quality animals and implement practical animal welfare measures on their farms was launched in April 2024. In 2024 the scheme paid farmers €8 per ewe conditional on the completion of two selected actions (DAFM, 2024c). Budget 2025 included provision for an additional €5 per ewe payment under the SWS, increasing the payment per ewe to €13. Thus, total scheme payments for farmers participating in both SIS and SWS were €20 per ewe in 2024 and will be €25 per ewe in 2025. However, not all sheep farmers participate in the SIS and SWS, and based on average payment receipts at farm level for the SIS in 2023, we assume that farmers will receive on average a payment of just over €14 per ewe in 2024 and just under €18 per ewe in 2025. Based on a per ha stocking density of 7 ewes per hectare, total coupled SIS and SWS payments are assumed to be €100 per hectare in 2024 and €125 per hectare in 2025).

These payments, relating to the SIS and the SWS for both 2024 and 2025, are incorporated in the estimates of enterprise output for 2024 and in the forecasts for 2025 as payments are linked to production (ewe numbers).

2. Review of the Economic Performance of Sheep Farms in 2023

FFI on those farms classified by the Teagasc NFS as *Mainly Sheep* farms declined by 22 percent in 2023, to an average of €12,625. This was on foot of a similar decline in the previous year. Sheep farms account for 16 percent of the total farm population

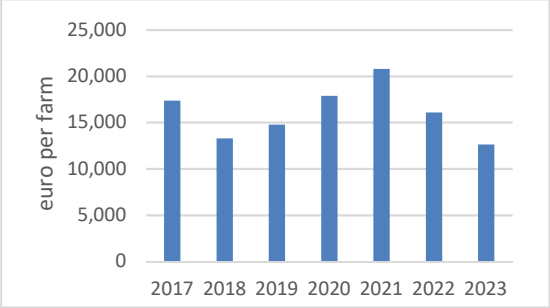
represented by the Teagasc NFS in 2023 (14,000 farms). The average FFI earned on these farms for the period 2017 through 2023 are shown in Figure 1.

Sheep farm incomes had been on an upward trajectory for several years. However, in 2022 and 2023, sheep farm output values declined and this coupled with increases in direct costs (up 3 percent in 2023) squeezed margins and led to sharp declines in average FFI.

Sheep farms in Ireland continue to be typically characterised by low profitability. The average FFI per hectare in 2023 was €286, down substantially compared to 2022 (Teagasc, National Farm Survey 2023). The median Sheep farm (the farm at the middle of the sheep farm income distribution) had a FFI per hectare of €252 in 2023. In 2023, gross output on the average sheep farm decreased by 5 percent to €58,061, reflecting lower lamb prices and lower output volume. On a per hectare basis, the average gross margin on Sheep farms declined 8 percent to €797 in 2023.

Following a sharp increase in 2022, average production costs remained relatively stable on sheep farms in 2023. Direct costs were up marginally by 3 percent to €22,835, while overhead costs declined 1 percent to €22,601. In terms of direct costs, expenditure on concentrate feed (the largest expenditure item), increased again in 2023, up 4 percent on average (to €8,627. On the other hand, expenditure on purchased bulky feed decreased significantly to €813. Fertiliser expenditure on the average sheep farm decreased by 22 percent compared to 2022, to €3,318, on average. Nitrogen use was down marginally in 2023, following a significant reduction in 2022.

Figure 1: Average Income on Mainly Sheep Farms in Ireland: 2017 to 2023



Source: Teagasc National Farm Survey (various years)

Building maintenance costs and machinery operating costs increased by 6 and 5 percent on average, to €903 and €3,548 respectively, with land improvement maintenance up 26 percent to €1,335. Expenditure relating to car, electricity and phone decreased, by 5 percent to €3,659. Spending on fuel remained relatively stable at €1,592 on average, with conacre rental costs up 12 percent to €2,013. Other overhead costs accounted for €3,637 of the total, up 32 percent year-on-year.

On the average Sheep farm in 2023, investment expenditure totalled €5,164. In line with the overall reduction in investment on sheep farms, farm related debt also declined in 2023 compared to 2022, with a reduction of 5 percent on average. Average debt on sheep farms was down significantly in 2023 and when farms without debt are excluded, average debt levels on sheep farms with debt was €30,590. One quarter of sheep farms had outstanding farm debt in 2023.

The mixed nature of most Irish sheep farms means that developments affecting non-sheep enterprise profitability can significantly influence the income performance of sheep farms. It is important to note that farms classified as *Mainly Sheep* include both specialist sheep farms and also a sub category of farms on which sheep and cattle enterprises are combined. Of the total livestock gross output on mainly sheep farms in 2023, just under 40 percent pertains to gross output from the various cattle enterprises.

Direct payments (coupled and decoupled) made an important contribution to farm income in 2023, the value of direct payments is estimated to have increased in aggregate terms compared to 2022 due to changes to the introduction of the Sheep Welfare Scheme (SWS). As on the other drystock systems, payments made under the ANC and ACRES boosted FFI on Sheep farms in 2023, while sheep farm participation in the new Organic Farming Scheme grew in 2023. For those NFS Mainly Sheep farms participating in the SIS, the scheme remained important, with farms receiving an average payment of about €1,500. The Basic Payment accounted for almost 58 percent of all payments received on the average Sheep farm in 2023. Direct payments to the average *Mainly Sheep* farm was €20,283 in 2023.

Overall, reliance on direct payments was comparatively higher in 2023, with the ratio of direct payments to FFI increasing significantly on Sheep farms. Following the decline in FFI year on year, the average ratio was 161 percent, indicating that the average sheep farm used more than €7,600 of the direct payments received over the course of the year to cover farm operating losses. Sector specific payments have been important for Sheep

farms in recent years. About 80 percent of Sheep farms participated in the Sheep Welfare scheme in 2023.

In the remainder of this paper, we focus exclusively on the mid-season lamb enterprise as the unit of analysis. All enterprise margins are exclusive of direct payments that are decoupled from production. However, enterprise margins for mid-season lowland lamb do include coupled payments related to sheep production. In 2024 and 2025, payments to farmers participating in the Sheep Improvement Schemes (SIS) and the National Sheep Welfare Scheme (SWS) will boost the value of gross output and margins per hectare.

3. Sheep Margins in 2023

Changes in the value of output, costs and gross margin per hectare for the mid-season lowland lamb enterprise in 2023 are shown in Table A1 of the Appendix to this paper. For 2023, the value of gross output for mid-season lamb enterprises declined by 9 percent relative to 2022 year. The volume of carcass output per hectare declined by circa 8 percent in 2023. In 2023 the stocking rate of ewes per hectare also declined, by 4 percent. These developments combined to reduce the weaning rate per ewe by circa 5 percent.

In 2023, total direct costs per hectare on the average mid-season lamb enterprise increased by 8 percent. Other direct costs increased by 20 percent relative to 2022, while expenditure on pasture and forage increased by 7 percent. Expenditure on concentrate costs remained relatively stable, with a marginal increase of 1 percent per hectare in 2023.

Gross margins, gross output less direct costs, in 2023 declined by 22 percent relative to 2022. This decline was mainly due to growth in direct costs. Gross output value per hectare declined by 9 percent in 2023, with lower lamb prices and lower physical output per hectare somewhat offset by an 8 percent increase in coupled payments per hectare.

Historically, there has been a wide range in the profitability of sheep farms operating the mid-season lamb system. In part, this range in profitability is reflective of differing agronomic conditions such as soil quality which limit the capacity of some farms to increase their intensity of production.

For comparison purposes, in Table A2, the mid-season lowland lamb enterprises are ranked on the basis of gross margin per hectare, and assigned to three equally sized groups which we have termed least profitable, average and most profitable. The average levels of output, direct costs and gross and net margin per hectare, as well as indicators of technical performance across these three groups, can then be compared.

The most profitable one third of mid-season lamb enterprises earned an average gross margin per hectare of €1,374 per hectare in 2023, while farms in the bottom group earned an average gross margin of only €103 per hectare. The size of the differential in 2023 between the top and bottom group was much larger than recent years.

The large difference between the value of output per hectare, across the three groups of farms, is due to differences in weaning and stocking rates. Higher levels of technical performance are reflected in an average carcass output per hectare of circa 260 kg on the most profitable mid-season lamb enterprises, versus 120 kg on the least profitable enterprises.

These very large differences in gross margin earned per hectare reflect a large variation in the intensity of production across the farm population, but also differences in direct costs per hectare (see Table A2 in the Appendix). Total direct costs per hectare are highest for the group with the lowest level of profitability. The superior efficiency and productivity performance of the top group in comparison to the other two groups results in a gross margin per hectare of €1,374, over thirteen times higher on the top farms compared to the bottom group.

With a decline of 22 percent in gross margin earned in 2023, the average net margin for the mid-season lamb enterprise decreased to €103 per hectare. This represents a 29 percent decline on the net margin earned in 2022, declining from €144 to €103 per hectare. As the data in Table A2 indicate, the large variation in gross margin earned per hectare is also reflected in variation in net margins earned. The most profitable mid-season lowland lamb enterprises in 2023, on average, earned a net margin of €576 per hectare, while the least profitable lowland lamb enterprises had on average a negative net margin (i.e. a loss) of €260 per hectare in 2023.

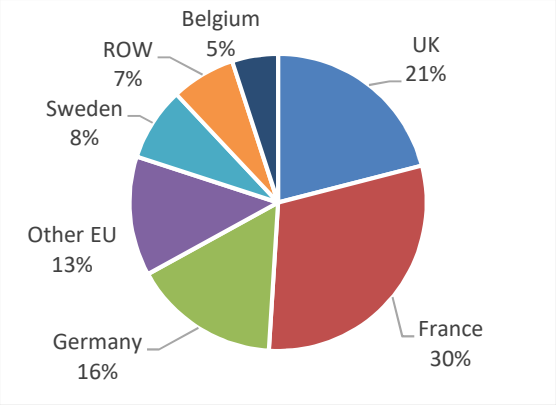
4. Sheep Meat Markets: Review of 2024 and Outlook for 2025

The vast majority of Irish sheep meat production is destined for export markets with 77,000 tonnes

(cwe) of sheep meat exported in 2023, an increase of almost 3 percent on the previous year (CSO, 2024c). This reliance on export markets continued in 2024 (see Figure 2) and means that understanding the outlook for lamb price developments on Ireland's export markets is critical in assessing the prices that Irish sheep farmers are likely to receive.

Solid fundamentals continue to support demand for Irish sheep and lamb meat exports. France remains the most important sheep meat export destination in 2024, with exports to that market continuing to account for the largest share (30 percent) of lamb exports.

Figure 2: Irish Sheep Meat Exports (CWE) by Destination – 2024



Source: Eurostat COMEXT database, year to September 2024

(ROW = Rest of World)

Ireland's rate of self-sufficiency in sheep meat increased to 405 per cent in 2023. In 2023, Ireland ranked 5th in the EU in terms of sheep production, comprising 9 percent of total heads slaughtered. Spain was the largest producer of sheep meat in Europe with a share of 25 percent.

EU sheep production continued to decline in 2024. In the first half of 2024, EU sheep production declined by over 7 percent year-on-year, driven by the continued lower breeding sheep numbers, as well as unfavourable weather conditions. The main producing Member States, Spain and France saw declines of 10 and 6 percent respectively over this period. Disease outbreaks in some EU Member States may have also affected the availability of animals for slaughter during 2024.

For the 2024 year to the end of August, EU sheep/goat slaughtering was down over 6 percent year-on-year. The historically low EU sheep numbers are estimated to have reduced slaughtering by 5% over the whole of 2024 and will also reduce slaughter in 2025, when a further drop of 1% is expected.

Although it has a favourable positioning within consumer baskets as a seasonal and traditional product (for example during religious and cultural festivities), the combination of lower availability and high prices are expected to result in a small decrease in sheep meat consumption in 2024. Per capita consumption is forecast by the European Commission to decline by 3.2 percent (to 1.2 kg per capita) in 2024 (DG Agri, 2024). For the 2025 year, per capita consumption is expected to remain at circa 1.2 kg, albeit a small decrease of 0.6 percent.

In 2024 EU heavy lamb prices have remained at high levels, following on from a high price year in 2023. The substantial reduction in the EU breeding flock over recent years effectively limits the possibility for production increases in the short run in response to these favourable prices.

At the beginning of 2024, EU prices began strongly and outpaced the high prices attained over the same period in 2023. By the first quarter, prices were 11 percent ahead of the same period in 2023. Prices continued to climb in the run up to and during the Easter period (which was a week earlier than in 2023 year). Prices reached their highest level of almost €909 (euro per 100 kg) on average during Q2. At the time of writing, 2024 average EU prices for heavy lamb are over 15 percent ahead of 2023 price levels. The continuing high level of lamb prices is driven mainly by the low rates of growth in domestic supply and the sustained demand level in the EU.

High EU prices have reduced the competitiveness of EU lamb exports on the international market and increased the attractiveness of the EU as destination for lamb exports from major global exporters. For the year as a whole, the expectation is that EU imports will grow by circa 2 percent, and maintain that level into the 2025 year, boosted by recovery of production in New Zealand and Australia, with more of their product expected to land in EU markets in 2025.

With relatively high prices, leading to less competitiveness on the international markets, EU sheep meat exports have declined. As this relatively high price situation is not expected to change in the short term, EU sheep meat exports may fall by up to 10 percent by the end of 2024. Based on a forecast reduction in EU prices in 2025, some very modest recovery in exports is forecast.

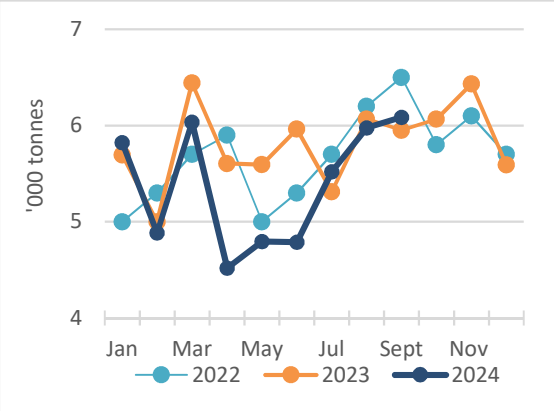
For 2024, total UK sheep meat production is forecast to decrease by approximately 8% year-on-year, driven by lower throughputs (AHDB, UK Sheep Outlook, June 2024). The lamb crop for the 2024/25 season is estimated to be down 4 percent on the previous season, driven by a smaller breeding flock. UK Consumption is expected to also weaken, linked to pressures on consumer budgets which are set to continue.

Australia and New Zealand continue to maintain their dominance in 2024 as the largest exporters of sheep and goat products globally. With the UK, Australia and New Zealand remain the principal suppliers of imports to the EU market. Strong global demand for exports from Australia and New Zealand is expected to continue in 2025 with global demand growth exceeding growth in supply. As a result world prices for sheep meat are expected to remain at their current high level (ABARES, 2024; MLA, 2024; Beef & Lamb NZ 2024).

Monthly CSO sheep and lamb slaughter data for 2022, 2023 and 2024 are shown in Figure 3. The number of sheep slaughtered in Ireland during the period January to end September decreased by 6.2 percent when compared with the corresponding period in 2023. The latest DAFM data available on slaughter at export plants (through week 46), shows an 11 percent decline in lamb slaughter.

Over the nine months, to September 2024, sheep carcass production declined to 48,000 tonnes as compared to 51,600 over the same period in 2023 (CSO 2024b).

Figure 3: Monthly sheep and lamb slaughterings 2021 - 2024 ('000 tonnes)



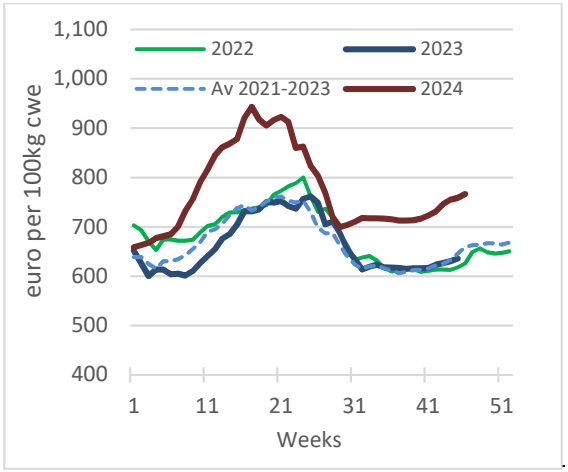
Source: CSO Statbank, October 2024

5. Estimated Sheep Gross Margins 2024

In our estimates for 2024 (and forecasts for 2025) we have assumed that the volume of spring lamb produced per hectare nationally has declined owing to a combination of lower scanning rates and higher lamb mortality. This is reflected in assumed reductions in the weaning rates in 2024. Stocking rates (ewes per hectare) in 2024 (and 2025) are assumed to remain unchanged relative to those observed in 2023, at 7 ewes per hectare. In our forecasts for 2025 we have assumed that the volume of spring lamb produced per hectare nationally will return to the 'normal' levels. In 2024 the Sheep Improvement Scheme and Sheep Welfare Scheme collectively add €100 per hectare Note that we have assumed that there are no additional costs to SIS participation over and above those associated with participation in the SWS.

Irish lamb prices for 2024 began very strongly, in a historical context outstripping the buoyant prices achieved in 2022 and 2023.

Figure 4: Weekly Irish Lamb Price, 2022 – 2024, Average 2021-2023

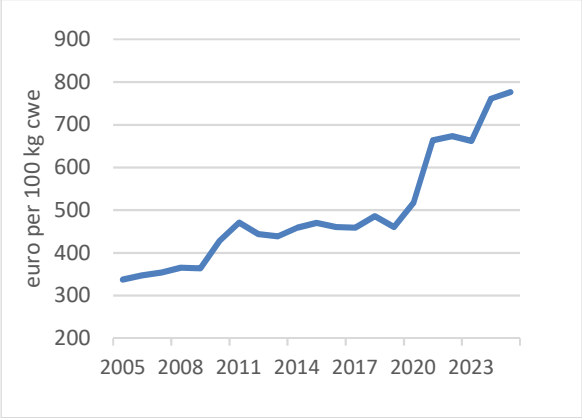


Source: European Commission DG Agri

As of mid-November 2024, prices continued to remain over 16 percent higher than in 2023. As is evident from Figure 4, the 2024 lamb prices when compared to the previous three year average prices, 2021-2023 (dotted blue line in graph) continue to remain high and well ahead of lamb prices received in recent years. These higher Irish prices reflect higher prices in the EU for heavy lamb, which are expected to persist over the remainder of 2024.

Our estimate is that Irish lamb prices in 2024 will be on average close to 15 percent higher than in 2023. With sheep throughput across all slaughter categories down for the year to date, our estimate is that sheep output volume per hectare in 2024 will be 10 percent lower than in 2023.

Figure 5: Irish Lamb Price, 2005 to 2024e, 2025f



Source: European Commission DG AGRI and author estimate 2024, forecast 2025

The main direct costs of production for Irish sheep farms are purchased feed, pasture and forage costs.

Purchased concentrate feed accounts for 40 percent of total direct input expenditure on the average mid-season lowland lamb system. Over the course of 2024, feed usage on sheep farms is up by circa 7 percent on average on the 2023 year and this is coupled with an estimated decrease in concentrate feed prices, of approximately 14 percent. With reductions in the price of sheep concentrate feed more than offsetting the increases in the volume used at the farm level, overall concentrate costs are estimated to decline by 8 percent in 2024 on the average mid-season lowland lamb enterprise.

Pasture and forage costs typically account for 30 percent of total direct costs on the mid-season lowland lamb system. Fertiliser prices are estimated to have decreased by 30 percent in 2024. Fertiliser costs on sheep farms in 2024 will be dramatically lower than 2023 levels. In our estimates for 2024, we have assumed that coupled with the large forecast decrease in fertiliser prices that the volumes used by mid-season lowland enterprises in 2024 will have increased slightly by circa 5 percent, so as to supplement increased concentrate feed usage. Overall expenditure on pasture and forage is estimated to have declined by circa 24 percent when compared to 2023.

In 2024, total direct costs of production on the mid-season lowland lamb enterprise are estimated to have decreased by almost 8 percent on 2023 levels. Fuel and electricity are the main items contributing to overhead cost changes in 2024. Prices of electricity in particular are estimated to have decreased by 18 percent, while fuel prices are estimated to have increased circa 2 percent, with a reduction of circa 4 percent on green diesel, so that price change applied is very much dependant on composition of fuel type used at an individual farm level. Usage of these inputs in 2024 on mid-season lowland sheep farms is estimated to have remained on par with 2023 levels. Overall, overhead costs on the mid-season lamb enterprise are estimated to have increased marginally, by circa less than 1 percent relative to 2023.

For 2024, the value of marketed gross output buoyed by high prices will be further boosted by the receipt of additional payments from the Sheep Improvement Scheme. This coupled with the reductions in the costs of sheep production, mean that we estimate that margins on the average mid-season lowland lamb enterprise will be higher in 2024 when compared to 2023.

The average gross margin earned in 2024 is estimated to have increased by just over 21 percent to €831 per hectare (see Table A3 in the Appendix). This increase in gross margin reflects the substantial increase in output prices resulting in much higher market based gross output per hectare in 2024. Increased payments from participation in the Sheep Improvement Scheme and Sheep Welfare Scheme and lower direct costs of production further buoyed margins in the sector. In the absence of the additional coupled payments from participation in the SIS in 2024, the average gross margin would still have increased by circa 14 percent.

With only modest increases in overhead costs in 2024, the mid-season lamb enterprise net margin is estimated to have increased strongly. The net margin level in 2024 is estimated to be 239 percent higher than that earned in 2023. This seemingly dramatic increase is in part due to very low base for net margins in 2023, where it averaged €103 per hectare. The estimated average net margin per hectare on the mid-season lowland sheep farms in 2024 is estimated to be €246 per hectare.

6. Outlook for the Sheep Enterprise Gross Margin in 2025

In 2025, Irish lamb prices are forecast to remain close to the high levels observed during 2024, with record high price levels set to continue to prevail. In the EU, high lamb prices also continue to prevail and supplies remain tight. It is forecast that average prices will continue to remain in excess of the five year average year price levels. Continental EU markets account for the majority of Irish lamb and although economic disruptions continue to impact consumer demand, tight global markets for sheep meat and export demand for Irish sheep are

forecast to support Irish lamb at, or close to current price levels.

The outlook for input expenditure in 2025, from the perspective of Irish sheep farmers is also positive. Prices for the majority of the key inputs to sheep production are forecast to either remain relatively constant or decline slightly. Electricity, fertiliser and concentrate feed prices are just some of the inputs forecast to decrease or remain constant in 2025. Input volumes used in 2025 are forecast to remain relatively unchanged (on a per hectare basis).

Concentrate feed prices are forecast to remain relatively stable in 2025. However, the volume of feed used is forecast to return to more normal use levels owing to less inclement weather conditions, with the volume of feed used forecast to decrease by circa 7 percent. Additional concentrate feed was required to meet the earlier additional Easter demand in 2024, a year in which Easter was celebrated early in the month of March. For 2025 Easter Sunday falls on 20th April. Overall expenditure on concentrates in 2025 is forecast to decrease by 7 percent.

The price of fertiliser is forecast to decline by circa 5 percent in 2025, this follows price declines observed in 2024. Fertiliser usage on sheep farms is forecast to return to more normal use levels. Overall, pasture and forage costs on Irish lowland mid-season lamb enterprises are forecast to decline in 2025, by circa 9 percent.

Table A3 (in the Appendix) summarises our forecasts of output, costs and margins for the mid-season lamb enterprise for 2025. Our outlook for lamb prices in 2025, is that prices will remain at close to the high levels observed in 2024. Our forecast is that sheep carcass output will increase by circa 5 percent in 2025, recovering some of the loss estimated to have arisen in 2024. With direct costs of production are forecast to decline by 5%, our forecast is that margins in 2025 will increase strongly. Additional payments from participation in the 'improved' SIS scheme in 2025 will also support sheep gross margins. Our forecast for the 2025 gross margin per hectare for the mid-season lamb system is €967 per hectare, a 16 percent increase on our 2024 estimate.

Total overhead costs are forecast to increase modestly in 2025. With higher gross margins per ha forecast for 2025, net margin per hectare for the average sheep enterprise are also forecast to increase, rising to €378 per hectare. This equates to a 54 percent increase on the 2024 net margin of €246 per hectare.

7. Concluding Comments

The average gross margin earned by mid-season lamb producers in 2024 is estimated to have increased compared to that earned in 2023.

Higher lamb prices combined with receipt of payments under the SWS and SIS resulted in higher gross output values in 2024. The positive impact of higher market prices on output value per hectare was partially offset by lower output volume, which is estimated to be down 10 percent on average. Overall, input prices declined by an average of 8 percent in 2024. These factors together were sufficient to leave the estimated gross margins on the mid-season lowland lamb enterprise 21 percent higher than the levels earned in 2023. Direct payment receipts associated with participation in the Sheep Improvement Scheme also added to margins earned on sheep farms.

Our forecast is that in 2025 average Irish lamb prices will remain at the high levels observed in 2024. Output volume per hectare is forecast to increase and move closer to output levels observed in 2023 year, with a 5% recovery in carcass output per hectare forecast. This output volume increase is based on an assumption of a return to more normal spring weather in 2025, a consequential improvement in mortality rates and overall flock health.

The gross margin earned by the average mid-season lamb enterprise forecast for 2025 is €967 per hectare, an increase of 16 percent, on the estimated gross margin for 2024. Average net margins are forecast to increase by over one half year on year, with the average mid-season lamb enterprise forecast to earn a net margin of €378 per hectare in 2025.

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Table A1: Average Mid-Season Lamb Output, Direct Costs, Gross Margin and Technical Performance

	2023	2024e
	€ per ha	
Gross output	1,360	1,455
Of which: Sheep Improvement Scheme & Sheep Welfare Scheme Payments	51	100
Direct Costs	675	624
Concentrates	268	247
Pasture and Forage costs	209	159
Other direct costs	198	218
Gross Margin	685	831
Overhead Costs	583	584
Net Margin	103	246

Source: Teagasc National Farm Survey and Authors' estimates for 2024
Note: In calculating the volume of lamb carcass output per hectare an average carcass weight of 20 kg has been used (Hanrahan, 2006)

Table A2: Mid-Season Lamb Output, Costs, Margins and Technical Performance in 2023 by gross margin grouping

	Most Profitable	Average Profitability	Least Profitable
		€ per ha	
Gross Output	2,029	1,300	792
Direct Costs			
Concentrates	231	280	291
Pasture and Forage	209	216	202
Other Direct Costs	215	184	196
Gross Margin	1,374	619	103
Net Margin	576	18	--260
Ewe per ha	8.75	6.85	5.25
Lambs per ewe	1.47	1.31	1.15
Lamb carcass (kg) per ha	257	180	121
Dir. costs € per kg carcass	2.55	3.79	5.71

Source: Teagasc National Farm Survey
Note: In calculating the volume of lamb carcass output per hectare an average carcass weight of 20 kg has been used (Hanrahan, 2006).

Table A3: Average Mid-Season Lamb Enterprise Costs, Output, Gross and Net Margin, 2023 – 2025f

	2023	2024e	2025f
		€ per ha	
Total Direct Costs	675	624	595
Concentrates	268	247	229
Pasture and Forage	209	159	145
Other Direct Costs	198	218	220
Gross Output	1,360	1,455	1,562
Of which: Sheep Improvement Scheme & Sheep Welfare Payment	51	100	125
Gross Margin	685	831	967
Overhead Costs	583	584	589
Net Margin	103	246	378

Source: Teagasc National Farm Survey. e Estimate, f Forecast

Table B1: Average Hill Sheep Output, Direct Costs, Gross Margin and Technical Performance, 2022 - 2023

	2022	2023
	€ per ewe	
Gross output	109	103
of which Sheep welfare per ewe	7	9
Total Direct Costs	63	69
Gross Margin	46	34
Overhead Costs	78	43
Net Margin	-32	-9
Ewes per ha	4.5	4.3
Lambs per ewe	1.1	1.0
Lamb Carcass (kg) per ha	92	88

Source: Teagasc National Farm Survey

Note: This analysis summarises results for farms with a hill sheep enterprise and only Hill sheep farms with more than 20 ewes are included in the analysis. For 2022 and 2023, the data relate to 26 and 19 farms respectively, and is nationally representative of just over 2,430 farms in 2023.

Irish Cereal Enterprise 2023
Average Performance

Irish Cereal Production
1.94 mill. tonnes (down 20%)

Irish Cereal Area
269,400 ha (down 6%)

Irish Barley Area
186,300 ha (down 2%)

Irish Wheat Area
55,800 ha (down 17%)

Spring Barley price
average €217per tonne (down 33%)

Winter Wheat price
average €224 per tonne (down 32%)

Spring Barley Yield per ha
average 5.9 tonnes (down 18%)

Winter Wheat Yield per ha
average 9.4 tonnes (down 4%)

Total Production Cost per ha
Spring Barley
average €1,708 (down 17%)

Total Production Cost per ha
Winter Wheat
average €2,353 (down 1%)

Net Margin for Spring Barley
average -€215 per ha (down €688)

Net Margin for Winter Wheat
average €60 per ha (down €1,082)

Target Yield for Spring Barley
7.2 tonnes per hectare
achieved on 15% of farm

Target Yields for Winter Wheat
10.3 tonnes per hectare
achieved on 22% of farms

Net Margin Target Spring Barley
€150 per hectare
achieved on 21% of farms

Net Margin Target Winter Wheat
€450 per hectare
achieved on 30% of farms

Source: Teagasc National Farm Survey and Central Statistics Office

Irish Cereal Farming in 2024

Decreased EU Cereal Production
International ending stocks/use ratio lower

Irish Cereal Yields
Down 7% for winter wheat
Up 14% for spring barley

Barley and Wheat prices
Up 3% on 2023 level

Weather Conditions
mixed

Fertiliser Prices
Down 40% on the 2023 level
Fertiliser Use
Down slightly on whole farm

Seed Prices
Down 5% on the 2023 level

Other Direct Costs
Up 1% on 2023

Fuel prices
Green diesel down 2% on 2023

Total Direct Costs
Down 15% on 2023

Gross Margin
Spring Barley
Up €400 per ha on 2023
Winter Wheat
Up €180 per ha on 2023

Net Margin
Average Cereal Enterprise
Minus €10 per ha (up €200 per ha)

Source: Teagasc Estimates for 2024 and Forecasts for 2025

Irish Cereal Farming in 2025

Increase EU Cereal Production
assuming trend yields

Irish Cereal Yields
Increase in individual yields assuming trend yields

Cereal prices
Up 5% on 2024 harvest price

Weather Conditions
Normal weather assumed

Fertiliser Prices
Down 5% on the 2024 level
Fertiliser Use
Up on a whole farm level

Seed Prices
No change on 2024

Other Direct Costs
Up 1% on 2024

Fuel prices
Little change on 2024

Total Direct Costs
Little change on 2024

Gross Margin
Spring Barley
Up €85 per ha on 2024
Winter Wheat
Up €320 per ha on 2024

Net Margin
Average Cereal Enterprise
€200 per ha (up €200)

Review of Tillage Farming in 2024 and Outlook for 2025

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1. Introduction

Harvest prices in the cereals sector in 2024, compared to 2023, were mixed, with some prices slightly lower and some slightly higher. Furthermore, yields for the major Irish cereal crops were mixed, with some crops tending to yield lower whilst other crops tended to yield higher than those achieved at harvest 2023. Taken together, these developments resulted in mixed gross output values on a per hectare basis in 2024 relative to 2023. However, there was some reprieve in direct costs of production in 2024, associated with a decrease in seed and fertiliser costs in particular.

The limited movement in cereal prices at harvest 2024 was influenced by a slight increase in global harvest of grains but on the other hand a decrease in the stocks to use ratio of the major grains on the international balance sheet.

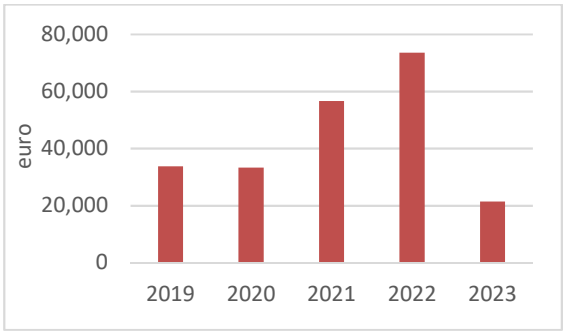
This paper will consider whether the price movements of the 2024 harvest can be considered atypical or whether prices will continue at these levels into the 2025 harvest. The paper uses Irish Teagasc National Farm Survey (NFS) data to conduct a review of the financial performance of tillage farms in 2023. Following this, prices and costs are estimated for 2024 and these are used to produce an estimate of net margin for the 2024 harvest year. In the concluding sections of the paper, forecasts for 2025 are presented.

2. Review of the Economic Performance of Tillage Farms in 2023

Approximately 6,200 specialist tillage farms were represented by the Teagasc NFS in 2023. Income on tillage farms decreased substantially by 70 percent year-on-year.

Gross output on a whole farm basis decreased by 20 percent. Direct costs and overhead costs increased on a whole farm basis, by 8 percent and 9 percent respectively. Overall, total costs on a whole farm basis increased by 9 percent on average. These changes resulted in an average Family Farm Income (FFI) in 2023 of €21,398, which is equivalent to a 55 percent decrease on the previous five year average FFI on tillage farms.

Figure 1: Average Income on Irish Specialist Tillage Farms 2019 to 2023



Source: Teagasc, National Farm Survey (various years).

To understand the economic performance of tillage farms in 2023, we begin with a review of the cost and return structure of the main cereal crops using NFS data. Figure 2 disaggregates the direct costs of production for the principal cereal crops grown on Irish farms in 2023.

Figure 2: Composition of Direct Costs for Cereal Crops, 2023

Source: Teagasc, National Farm Survey.

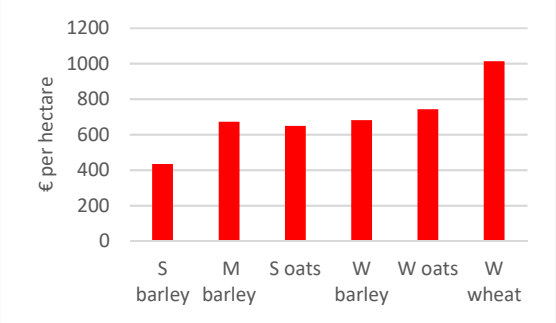
Figure 2 shows that in general, direct costs are higher for winter sown crops compared to spring sown crops, due to the higher fertiliser and crop protection costs incurred in growing winter crops. However, given that yields are generally higher in winter sown crops, the more appropriate comparative economic indicator is gross margin per hectare, as shown in Figure 3.

Figure 3 shows that the average gross margin per hectare for all winter crops is higher than the gross margin for equivalent spring sown crops. Winter wheat recorded the highest gross margin and spring

barley the lowest margin of all cereal crops examined in 2023 (see Table A1 in the appendix to this paper for further details). The gross margin per hectare for the two main cereal crops, spring barley and winter wheat decreased in 2023 relative to 2022, by approximately €950 and €1215 per hectare respectively.

While gross margin estimates are useful for comparative purposes, it is also worthwhile to examine the shift in net margin over time.

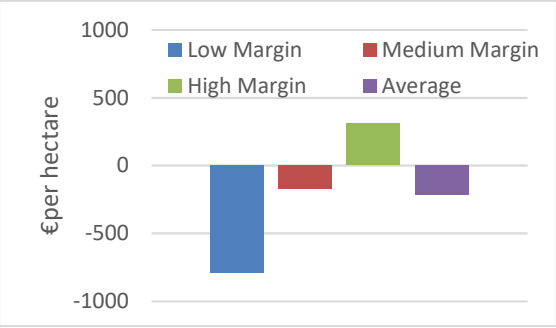
Figure 3: Gross Margins per hectare for Cereal Crops, 2023



Source: Teagasc, National Farm Survey Data.

For this reason, the analysis looks at the net margin of the cereal enterprise of the entire NFS specialist tillage farming population and this is shown in Figure 4. The net margin figures in Figure 4 below take account of allocated overhead costs; on the average specialist tillage farm in 2023, overhead costs were approximately on average €960 per hectare. In addition, coupled payments such as the Straw Incorporation Scheme and Tillage incentive Scheme payments are included in the net margin, whereas decoupled payments such as the BISS and Eco scheme payments are excluded from the net margins.

Figure 4: Cereal Enterprise on Specialist Tillage System Farms: Net Margin Distributions, 2023



Source: Teagasc, National Farm Survey Data.

To examine the variation in net margins earned by tillage farms, the sample was divided into three groups. Farms were classified on the basis of net margin per hectare; the best performing one-third of farms labelled high margin, the middle one-third labelled moderate margin and the poorest performing one-third labelled as low margin. The variation in margins across Irish tillage farms is readily apparent from Figure 4. The net margin per hectare for the cereal enterprise on high margin farms in 2023 was €310 compared to minus €175 on moderate margin farms and minus €790 on low margin farms. It is important to remember that these margins include production output only; hence by definition the payments such as Basic Income Support for Sustainability (BISS), Eco scheme payments, which are decoupled from production, are not included in these figures.

3. Estimate of 2024 Performance

This section of the paper presents a review of the cereal sector in 2024. To provide an estimate of enterprise margins for the current year, it is necessary to estimate the volume and price of inputs that are likely to have been used as well as the volume and value of outputs produced in 2024. The ensuing sections of the paper discuss first, the movements in input prices and usage and second, the cereal market conditions, harvest yields, and production in 2024.

3.1 Estimated Input Usage and Price 2024

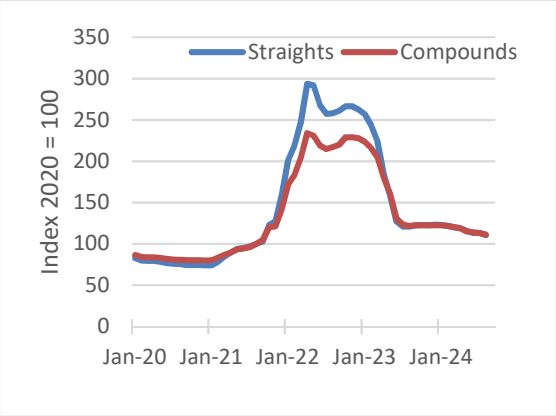
3.1.1 Fertiliser – Usage and Price 2024

In the early half of the noughties, fertiliser costs typically comprised about 25 percent of direct costs and just over 10 percent of total costs on tillage farms. However, fertiliser types commonly used on tillage farms have increased substantially in price since 2006. Expenditure on fertilisers now represents a larger proportion of costs on tillage farms than previously. In 2023, fertiliser costs represented 38 percent of direct costs on tillage farms and approximately 20 percent of total costs. In particular, the price of natural gas is a key determinant of fertiliser price. Short run changes in the demand for natural gas (and fertiliser), coupled with relatively fixed production capacity has the potential to impact fertiliser prices to a large extent.

Following the significant peak in fertiliser prices in 2008 and 2009, the pressure on fertiliser prices has been mixed in more recent years. However, the COVID-19 pandemic and the illegal invasion of Ukraine has significantly altered the balance in

demand and supply for natural gas which has had a very significant impact on fertiliser prices. Following a sharp decline in fertiliser prices in 2020, a step increase in fertiliser prices occurred during the course of 2021 and again in 2022. Whilst there was some welcome reprieve in fertiliser prices during the course of 2023, much of the price decreases happened in the second half of the year, but much of the demand for fertiliser on tillage farms occurs in Q1 and Q2. With further declines evident on a monthly basis throughout the first half of 2024, it is estimated that fertiliser cost on tillage farms will be reduced in 2024. On a calendar year basis, taking purchasing patterns into account it is estimated that fertiliser prices for NPK based products are down 40 percent in 2024 compared to 2023. It is noted that this decrease is of a higher magnitude than grassland farms, due to timing of purchases.

Figure 5: Irish Farm Gate Price Index of Fertilisers 2020 to 2024



Source: Central Statistics Office data for 2020 to 2024.

On the usage side, DAFM figures indicate that fertiliser purchases in the 2024 fertiliser year (latest figures from October 2023 to June 2024, last quarter not yet available at time of writing) shows a mixed picture for N,P and K products. Given that DAFM data on fertiliser purchases refers to all purchases for grassland and cropland it was necessary to consult with farm advisors and industry sources to evaluate the magnitude of change in fertiliser usage levels for Irish crop farms in 2024. Reports from a number of sources indicate that there is much more limited opportunity for nutrient reductions on crop farms compared to grassland farms, in response to fertiliser prices, with individual crops having specific nutrient requirements to achieve target yields. Notwithstanding nutrient requirements it is estimated that there was some further substitution away from chemical fertiliser in favour of animal manures to fulfil crop nutrient requirements in 2024, prompted by the constrained cash flow situation in 2024. In addition, the reduction in winter cereals area would also have a negative impact on fertiliser volume applied. Overall expenditure on chemical based fertiliser in 2024 is estimated to have decreased by about 45 percent on a whole farm basis, taking reduction in prices, cereal area and reduction in synthetic fertiliser usage into account.

3.1.2 Seed – Usage and Price 2024

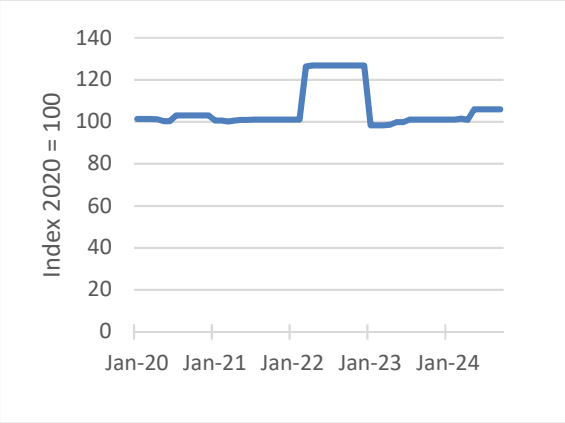
Expenditure on purchased seed on crop farms comprises between 9 and 28 percent of direct costs production, with seed representing a higher proportion of direct costs in protein crops, such as Spring beans, where fertiliser costs represent a lower proportion of direct costs. In terms of the composition of total costs, seed represented about 5 percent of total costs in 2023. In 2024, cereal farmers experienced a decrease in seed costs relative to the previous year given that cereal prices at harvest decreased in 2023 relative to 2022, this price decrease has transmitted to seed prices, with blue label seed costing around €735 per tonne, which was about 5 percent lower than 2023 seed prices.

3.1.3 Crop protection – Usage and Price 2024

The expenditure on crop protection by specialist tillage farms in 2023 accounted for 18 percent of direct costs and 9 percent of total costs. However, the contribution of crop protection to the composition of costs can vary significantly depending on the crop; the percentage spent on crop protection for winter crops is higher than that for spring crops. For example, for the winter wheat crop in 2023, crop protection costs accounted for 25 percent of direct costs, as compared to 20 percent for spring barley.

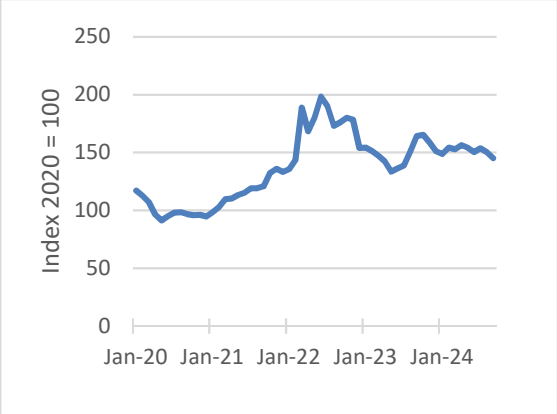
Compared to other significant costs on tillage farms, the increase in the prices of crop protection products listed by the CSO has been limited over the recent past, until the trend break which has appeared in the data in February 2022. Figure 6 shows the annual average increase in crop protection products in 2022 was 20 percent, with a further 9 percent increase in 2023, and an estimated further 4 percent increase in 2024. This increase in prices is attributed to inflation in the energy market, which is important for the manufacture of products and also supply and demand issues associated with post pandemic supply shortages globally.

Figure 6: Price Index of Plant Protection products in Ireland 2020- 2024



Source: Central Statistics Office and Author's own estimates.

Figure 7: Price Index of Fuel products in Ireland 2020 – 2024



Source: Central Statistics Office and Author's own estimates.

3.1.4 Electricity and Fuel – Usage and Price 2024

Energy and fuel are important inputs in crop production. Given that a number of direct and overhead costs are directly influenced by energy and fuel prices, the trend in energy prices is of significance for tillage farmers. In this analysis it is assumed that hired machinery/contracting and transport costs, which are components of direct costs, and fuel and lubricants which are components of overhead costs, are influenced by energy inflation. These cost items represented approximately 15 percent of total costs on tillage farms in 2023.

Based on the CSO estimates presented in Figure 7, the farm level price of fuel decreased by 13 percent between 2022 and 2023 (the last full year for which data is available). Subsequently, as a result of a decrease in Brent crude oil prices due to the demand returning to more normal levels following the COVID-19 induced demand shock, coupled with gas prices decreases associated with supply issues receding following the war in Ukraine, green diesel fuel prices on Irish tillage farms decreased by about 4 percent in 2024 relative to 2023.

Demand for these input items tends to be relatively inelastic with respect to price and therefore it is assumed that usage in 2024 will have been similar to the 2023 level. Overall expenditure on fuel related items is likely to be 2 percent lower in 2024 relative to 2023.

3.1.5 All other direct and overhead costs – Usage and Price 2024

Based on CSO estimates for the first nine months of 2024 compared to the same time period in 2023, it is estimated that 'other direct costs' have increased on an annual basis by about 1 percent.

The average cost of land rental in 2023 on specialist tillage farms represented 9 percent of total costs. Whilst farm gate cereal margins decreased significantly in 2023, there could be some basis for assuming a slight decrease in land rental prices in 2024, on the other hand industry reports of further land rental inflation were reported by SCSI/Teagasc in 2024 (SCSI/Teagasc, 2024). It is assumed that the average land rental price per hectare increased by the magnitude reported by SCSI/Teagasc report of March 2024, at 4 percent. The methods employed here, which reflect costs per crop hectare, do not capture changes in the volume of land rented. For 2024, on a total farm basis, the actual impact of any changes to total cereal area (rented or otherwise) will only be fully reflected in the final Teagasc NFS figures for 2024, which will be published in mid-2025.

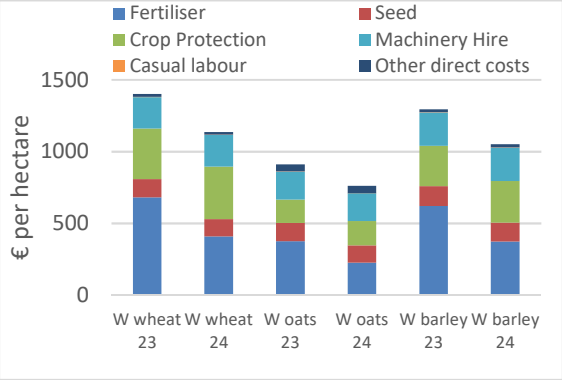
3.1.6 Estimate of Total Input expenditure for 2024

Total expenditure on all input items is estimated to have decreased in 2024 relative to 2023. The most significant decrease in expenditure on a per hectare basis occurred for fertiliser and seed, which are estimated to have decreased by 40 percent and 5 percent respectively. Feed prices are estimated to have decreased by about 14 percent (which is relevant for subsidiary enterprises on tillage farms). On average, the estimated decrease in total direct

costs was approximately 15 percent in 2024 relative to the 2023 level, on a per hectare, per crop basis.

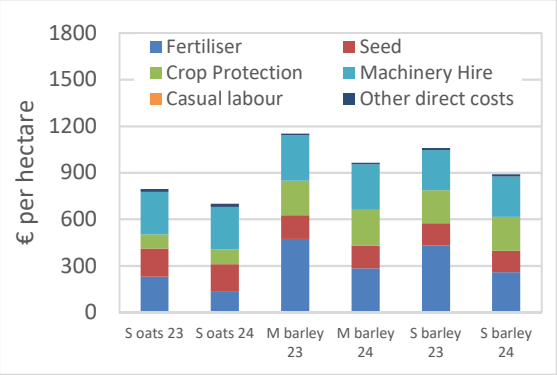
The estimates, provided on a per hectare basis for individual cereal crops, do not take into account changes in the area devoted to individual cereal crops. Overall, it is estimated that direct costs for the average specialist tillage farm decreased by 18 percent (taking cereal area into account) whilst overhead costs increased by 3 percent.

Figure 8A: Direct Costs in Winter Crops in Ireland 2023 and Estimates for 2024



Source: Teagasc, National Farm Survey Data and Author's estimates for 2024

Figure 8B: Direct Costs in Spring Crops Ireland 2023 and Estimates for 2024



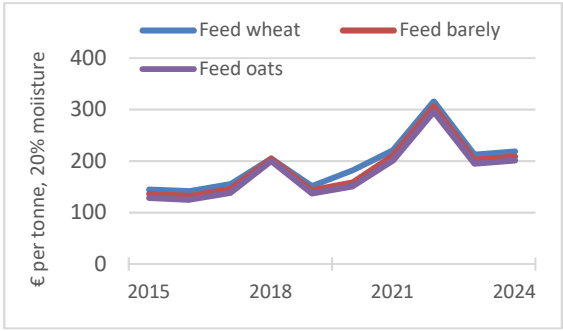
Source: Teagasc, National Farm Survey Data and Author's estimates for 2024.

3.2 Estimated Output Values 2024

3.2.1 Price, yield, moisture levels and coupled payments in 2024

In 2024, virtually no change in national cereal volumes, coupled with a slight decrease in aggregate production of wheat, barley and maize on the European balance sheet in 2024/25 compared to 2023/24, resulted in a very slight upward movement in Irish farm gate harvest prices for the main cereal crops compared to 2023 (Figure 9).

Figure 9: Farm Gate Cereal Prices (major crops), 2015-2024



Source: Teagasc, National Farm Survey Data and Author's estimate for 2024

While the majority of cereals in Ireland are still sold off farm at harvest time to a grain merchant on a green moisture basis, the ability of farmers to forward sell grain has introduced an additional element to the calculation of the average price received by farmers. For the past number of years the Teagasc NFS has collected data on the proportion of cereals forward sold before harvest. This research indicates that the majority of cereals are not forward sold before harvest, but are sold at harvest time, on a green moisture basis.

Table 1 shows the average green yields obtained in 2023 and estimated yields for 2024. In general, the yields achieved in 2024, compared to 2023 were mixed. However, readers should note that these yields are green yields and are thus not adjusted for moisture content.

The last variable which must be assessed in calculating cereal output value per hectare and per farm is the value of straw. Following the decrease in cereal yields, there was also a decrease in volume of straw produced in 2024, this decrease is driven by the decrease in cereal area and poor crop establishment in some instances. It is estimated whilst volume of straw was decreased in 2024, the price for straw was more favourable in 2024 compared to 2023. Uptake of the straw incorporation measure in 2024 and the newly introduced Baling Assistance programme (BAP) is difficult to gauge at this point in time and the balance between straw sales and the uptake of the straw incorporation measure will only be fully realised when 2024 NFS data becomes available.

Some coupled payments on tillage crops have also witnessed changes from 2023 to 2024. The protein aid payment budget remained at €10 million in 2024, with the per hectare payment rates

decreasing from approximately €583 in 2023 to €500 in 2024, due to the increase in area. The protein aid coupled payments are included in the calculations outlined in Figure 10 below.

Additional support payments paid out in 2024 also included the Straw Incorporation Measure (SIM) with a budget of €10 million, the additional Tillage Top Up and Unharvested Crop Loss expenditure of €14.3M paid in early 2024, and a residual maintenance payment in respect of the Tillage Incentive Scheme area with a budget of €1.4m, was also paid in 2024. There was also the announcement of an additional fund for tillage producers in 2024, with an average payment of €100 per hectare, which has been budgeted for from the 2025 budget. Payments which will be paid in 2024 are included in the 2024 cereal enterprise margins presented in Figure 13 below.

Table 1: Average Yield Levels, 2023 and 2024 Harvest

	Yield (tonne per ha)	
	2023	2024
Winter Wheat	9.50	8.86
Winter Barley	8.70	8.13
Winter Oats	8.30	8.66
Spring Wheat	7.50	7.54
Spring Barley	6.40	7.32
Spring Oats	7.10	7.68

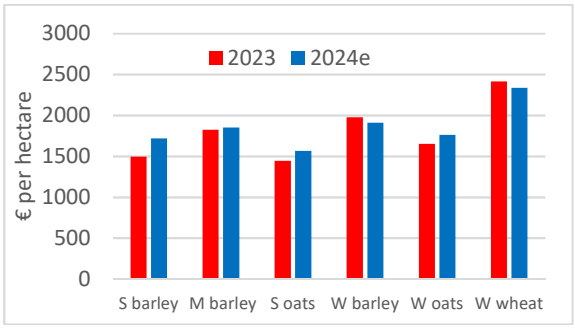
Source: Teagasc Harvest report figures for 2024

3.2.2 Estimate of Total Output Value for 2024

Given the large number of variables that need to be considered in estimating output value, as outlined above, the estimated changes in crop output value between 2023 and 2024 are very crop specific.

In overall terms, there is a mixed picture in terms of gross output value changes in 2024 relative to 2023, with some crops estimated to have recorded a slight increase and others a slight decrease in gross output in per hectare terms. Output value per hectare in 2024 is estimated to have increased by approximately 3 percent across all the tillage crops on the specialist tillage farms examined.

Figure 10: Actual Gross Output per Hectare 2023 & Estimated Gross Output per Hectare 2024

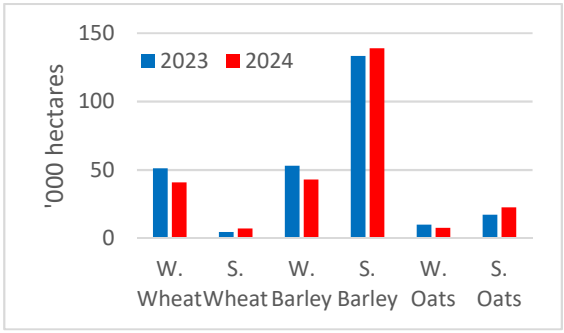


Source: Teagasc, National Farm Survey Data and Author's estimates for 2024.

3.2.3 Estimate of Total Production 2024

The figures presented in section 3.2.2 provide estimates of output value per hectare. However, these estimates do not take into consideration changes in area devoted to cereal crops in 2024. Figure 11 shows the area estimates for 2024, based on the 2024 Teagasc Harvest Report data.

Figure 11: Change in Irish Crop Area from 2022/2023 to 2023/24 crop year in Ireland



Source: CSO and Teagasc Final Harvest Report 2024

Figure 11 shows that the total area devoted to cereal production decreased by 3.5 percent in the 2023/24 crop year compared to the 2022/23 crop year. There was also some switching between winter and spring sown crops which was weather related. When non cereal crops are taken into consideration, specifically, winter oilseed rape and spring beans, the area devoted to crops reduced by 5%.

Table 2 combines actual total cereal production for 2023, with estimated total cereal production for 2024. The estimated 2024 production of wheat, barley and oats is based on 2024 yield estimates from the Teagasc harvest report. Overall cereal

production is estimated to remain virtually unchanged (minus 1 percent) on 2023 levels.

Table 2: Actual & Estimated Production 2023 & 2024 ('000 Tonnes)

	2023	*2024e*	*%Change*
Wheat	495	394	-20%
Barley	1248	1297	4%
Oats	196	227	15%
Total	1940	1918	-1%

Source: CSO and Teagasc Final Harvest Report 2024

3.2.4 International Production Estimates for 2024

While production estimates for Irish cereals are important from a national supply, demand and balance sheet perspective, it is primarily developments in the EU and international supply and use balance for cereals that affect price developments in Ireland. For this reason, a review of EU and international ending stocks for cereals are more informative when near term price developments are concerned.

Latest estimates for EU total grain production for the 2024/25 marketing year are down on the previous year's levels (Strategie Grains, November 2024). EU total production of wheat, barley and maize were down 6 percent on the previous marketing year, with total grain production slightly up on the international balance sheet on the previous marketing year. However, it is noteworthy that there is a decrease in the stocks to use ratio for wheat, barley and maize on the international balance sheet.

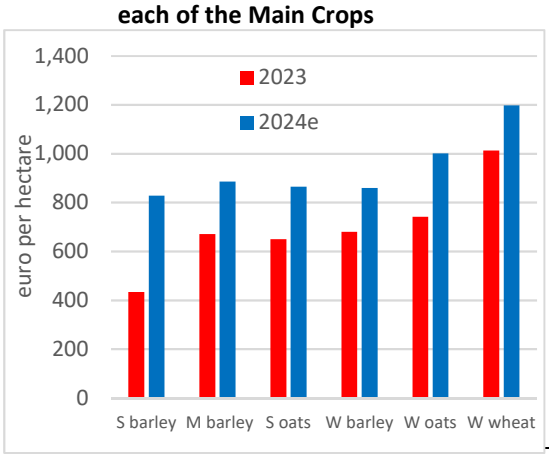
Whilst there was limited upward movement in farm gate cereal prices paid at harvest 2024, compared to 2023, it is expected that the forecast for wheat and barley prices over the coming months will increase in parallel with the dwindling of stocks in the Black Sea countries (Strategie Grains, October and November, 2024).

3.3 Review of Tillage Enterprise Margins in 2024

The review of cereal output value showed that the average value of output received by farmers was slightly higher in 2024 compared to 2023. The review of input costs concluded that total direct costs were lower in 2024 compared to 2023, due mainly to a decrease in fertiliser and seed expenditure. Figure 12 presents the effect of these estimates on the estimated gross margin for each of the main Irish cereal crops.

Figure 12 shows a positive story in terms of the relative change in gross margin in 2024 relative to 2023. The relative shift in yields, crop prices, straw returns and input expenditure has been positive for most crops between 2023 and 2024. In terms of the major crops, the gross margin for spring barley was up by approximately €400 per hectare and the winter barley gross margin is estimated to be up by nearly €180 per hectare, while the gross margin for winter wheat is also estimated to be up by nearly €180 per hectare. It should be noted that the average gross margin figures presented above are market based gross margins and therefore exclude all decoupled payments and overhead costs, except for the inclusion of the coupled protein aid payment, for spring beans.

Figure 12: Actual Gross Margin in 2023 & Estimated Gross Margin for 2024 for each of the Main Crops



Source: Teagasc, National Farm Survey Data and Author's estimates for 2024.

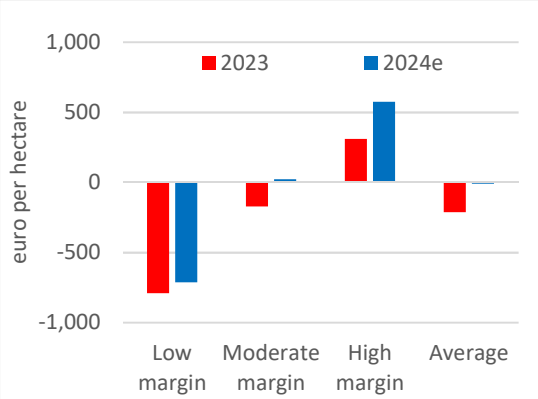
The estimated net margins for 2024 are presented for the average cereal enterprise on specialist tillage farms, with the NFS sample disaggregated into one-third groupings based on net margins per hectare obtained.

Figure 13 shows the cereal enterprise net margin estimates for 2024 relative to 2023, for the average specialist tillage farm, in addition to the net margins for the low, moderate and high margin groupings of tillage farms.

The estimate of net margins for the typical cereal enterprise in 2024 is significantly higher than in 2023 given upward movement in gross margins per hectare and less significant movement in overhead costs. For the best performing one-third of tillage farms, the estimated net margin for 2024 was approximately €575 per hectare compared to the average, where the net margin was approximately minus €10 per hectare. As already alluded to above,

it is important to note that these figures exclude decoupled direct payments.

Figure 13: Actual Net Margin 2023 and Estimated Net Margin for 2024 for the Cereal Enterprise on Specialist Tillage Farms



Source: Teagasc, National Farm Survey Data and Author's estimates for 2024.

4. Outlook for 2025

In this section forecasts are provided for expenditure on various input items in 2025, the likely farm gate cereal price that will prevail at harvest 2025 and the likely net margin of tillage farms in 2025.

4.1 The Outlook for Input Expenditure

4.1.1 Fertiliser – usage and price 2025

A number of factors need to be considered when forecasting price and volume changes for fertiliser on crop farms in 2025. Market report data, coming from the fertiliser industry at present, are suggestive of little movement of fertiliser prices over the last few months, with very limited purchases for the coming growing season happening. Market sources at the time of writing (November 2024) are indicating that the price of NPK compound products are approximately 9 percent lower than for the corresponding period last year, due in a large part to factors affecting supply of fertiliser products and movement on energy costs. With the majority of fertiliser purchases happening in the February/March time period in any given year, it is forecast that the decrease in fertiliser price for cereal crops in 2024/25 will be about 5 percent lower than for 2023/24.

Holding all other things constant, fertiliser usage on a whole farm basis in 2025 on crop farms could be expected to increase slightly due to higher levels of winter crop sowing due to autumn weather conditions. Overall, it can be expected that fertiliser expenditure will be about 5 percent lower per hectare for specific crops on cereal farms in 2025 relative to the 2024 level.

4.1.2 Seed – usage and price 2025

As mentioned previously, cereal farmers experienced a slight decrease in seed costs in 2024 relative to the previous year due to cereal price decreases at harvest 2023. Given that cereal prices at harvest 2024 remained relatively stable relative to 2023, this price stability has been transmitted to seed prices, with blue label seed costing around €735 per tonne, which is no change on the 2024 seed prices.

4.1.3 Crop protection – usage and price 2025

The increase in crop protection costs in 2025 relative to 2024 is forecast to be of a smaller magnitude to the changes seen in 2024. Assuming no further significant price changes on a monthly basis, from the current prices in November 2024, it is likely that price increases for plant protection products will be about 4 percent in 2025, on an annual average basis. This 4 percent increase on a per crop basis will be slightly higher on a whole farm basis, reflecting the increase in winter cereal planting, with a higher requirement for crop protection compared to spring sown cereal crops.

4.1.4 Electricity and Fuel – usage and price 2025

Fuel costs in 2025 will depend mainly on the evolution of crude oil prices. Current futures prices suggest that crude oil prices will decrease slightly in 2025 relative to 2024 prices, leading to very little change in farm level fuel prices on tillage farms, on an annual average year basis.

4.1.5 All other direct and overhead costs 2025

All other direct costs are forecast to increase by about 1 percent in 2025, in line with projections for general inflation in 2025 and basing the forecast on an annual average basis. At this early stage in the production season anecdotal evidence on land rental prices for 2025 is mixed. However, due to the continued cash flow pressure on tillage farms in 2024, it is assumed that there will be little inflationary pressure on land rent in 2025.

4.2 The Outlook for Markets 2025

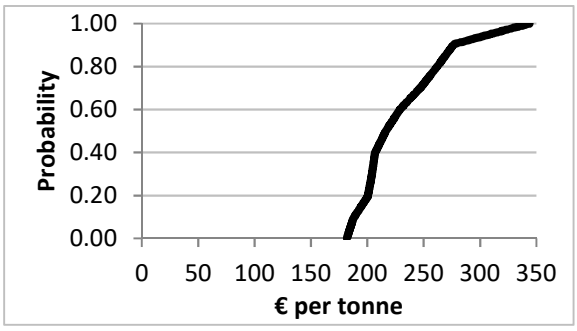
The cereals market has experienced significant volatility in recent years. Planting decisions by

farmers will be influenced by expected farm gate cereal prices (and margins) in 2025. A number of factors must be taken into consideration when making price forecasts for the coming harvest.

To formally evaluate the risk associated with predicting the 2025 harvest price, an econometric analysis was conducted to predict the probability that the 2025 farm gate price will be higher or lower than the 2024 price. This analysis was based on the November 2024 MATIFF futures prices for November 2025 contracts. The regression analysis examined the historic relationship between (i) predicted futures price for the following harvest, made from the previous November/December when planting decisions were being made, and (ii) the actual farm gate price paid at harvest one year hence. This regression analysis enables a forecast to be made of the 2025 Irish farm gate cereal price for wheat, taking into consideration the differences between the historic predicted values (MATIFF) and the actual outcomes.

Figure 14 outlines the probability of achieving various harvest prices in September 2025. Based on the econometric model developed, it shows that there is significant uncertainty concerning the predicted harvest price for September 2025. This predicted range is based on current (MATIFF) futures trading prices (November 2024), and the spread around the mean value is based on how right or wrong futures markets have been in recent times in predicting prices one season ahead.

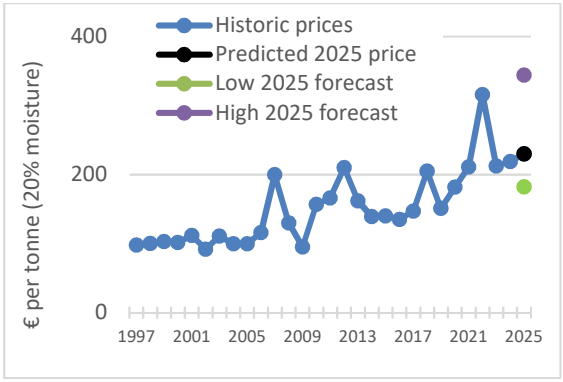
Figure 14: Probability Distribution of the predicted 2024 Wheat Harvest Price



Source: Author's own estimates.

Based on market reports on forward prices and the probabilities of achieving different harvest prices, the average predicted value for the farm gate wheat price is approximately €230 per tonne at 20 percent moisture, which is approximately a 5 percent increase over harvest prices paid in 2024. However, there is a significant variance surrounding this figure. Based on a 90 percent confidence interval, it is forecast that the figure could be as low as €182 per tonne or as high as €344 per tonne (Figure 15).

Figure 15: Historic, Estimated & Forecast Farm Gate Feed Wheat Price (1997– 2025)



Source: Author's own estimates, 2025 forecast, at 90 percent confidence interval.

The latest edition of *Strategie Grains* (November 2024) outlines an increase in the EU area planted to winter crops for the 2025/26 marketing year compared to 2024/25.

In total, soft wheat area in the EU27 is estimated to increase 21.41 Mha compared to 20.43Mha in 2024/25. Total EU27 barley area is expected to decrease (10.07 ha in 2025/26 Mha compared to 10.33 Mha in 2024/25). Total EU27 maize area is also forecast to decrease from 8.21ha (2025/26) to 8.69Mha (2024/25).

The change in cereal area (in the EU) is coupled with an assumption of achievement of trend yields in 2025 (see Appendix A3 for further details on forecast changes in arable crop areas in the EU27 for 2024/2025). An achievement of trend yields within the EU27, ceteris paribus, would yield better yields than the results of 2024 in the EU-27, however the ending stocks to use ratio for the current year will put pressure on the opening balance of stocks in the next marketing year.

The very slight increase in farm gate cereal prices at harvest 2025 which is borne out in futures trading prices at the moment, reflects the anticipated decrease in carry out stock levels from the current marketing year. Other supply side bullish factors include anticipated reductions in stock available for export from the Black Sea region, over the course of the 2025/26 marketing year.

Other price bullish factors include demand factors where there has been an increase in demand for cereals, in response to reduced feed prices.

Possible bullish and bearish factors which could impact on prices at harvest 2025 include:

- significant weather events; for example, the return of rains in Russia has improved conditions for winter wheat planting – but the outlook for the Russian winter wheat crop overall is not without significant risk as the plants are in poorer condition than at this time last year and are not sufficiently developed to cope with winter.
- exchange rate movements,
- changes in demand from feed and food sources,
- political factors, such as trade policies, for example trade policy changes linked to President Donald Trump in the US, who will take office in January.

Whilst all of the afore mentioned supply and demand factors are assumed to be considered in the futures trading environment at the moment, the overriding bullish factors are considered most important in determining the futures trading price for harvest 2025. But it is still very early to forecast what might happen to these additional variables, and futures markets tend to move closely in line with first production estimates and exchange rate forecasts, with improved reliability of estimates coming in late spring of the harvest year.

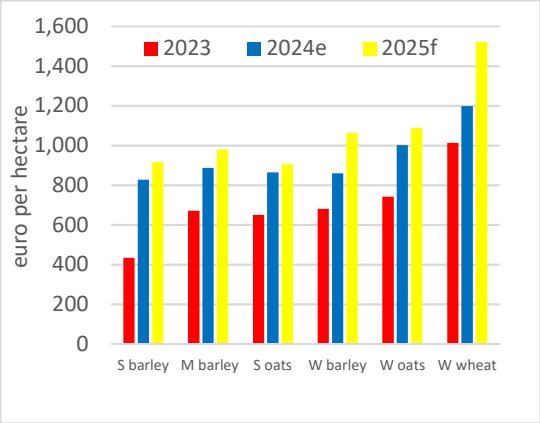
Based on the futures market forecast and average loyalty top ups in recent years from merchants, our forecast is that farm gate cereal prices will increase by, at best, 5 percent at harvest 2025.

4.3 The Outlook for Tillage Enterprise Margin in 2025

Direct costs are forecast to be similar in 2025 relative to 2024, due to the forecast for little movement in fertiliser costs, seed costs and fuel. Some direct costs of production are forecast to increase by small amounts in 2025, crop protection by 4 percent and all other direct inputs by 1 percent. Whilst some direct cost items may increase in 2025, the general trend is for little movement in costs compared to 2024, resulting in total direct costs in 2025 which should be similar to 2024 levels, on a per hectare basis. Furthermore, output value on average is forecast to be higher than 2024 levels, due to the forecast increase in cereal yields when trend yields are assumed, coupled with a slight increase in cereal prices. Figure 16 presents the actual gross margin for each of the main cereal crops in 2023, and the respective estimates and forecasts for 2024 and 2025.

The net effect of input price, output price and volume movements is on average, forecast to have a positive effect on gross margins for 2025. For example, gross margins for winter wheat and winter barley are forecast to increase by approximately €320 and €200 per hectare respectively, while gross margins for spring barley are forecast to increase by approximately €85 per hectare. The overall story for the 2025 forecast is for an increase in gross margins as a result of achievement of trend yields, an increase in cereal prices and little change in direct costs.

Figure 16: Actual 2023, Estimate 2024 and Forecast 2025, for Cereal Crop Gross Margins



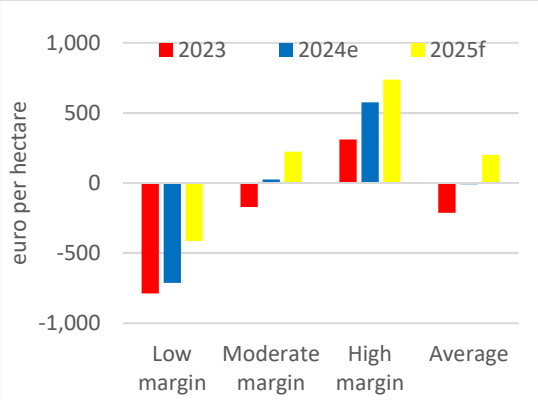
Source: Teagasc, National Farm Survey Data and Author's estimates for 2024 & forecast for 2025.

Similar to the format used to present margins in 2023 and 2024 earlier in the paper, the forecast net margins for 2025, are presented for the cereal enterprise on specialist tillage farms, as well as the population of such farms disaggregated into one-third groupings based on margins obtained. Figure 17 shows that the forecast net margins for the cereal enterprise in 2025 are higher than in 2024 and 2023.

The upward movement in margins (compared to 2024) is associated with the yield and price forecasts for 2025 and a decrease in some key direct cost items.

Overall, the net margin for the average cereal enterprise in 2025 is forecast to increase by about €200 per hectare relative to 2024.

Figure 17: Net Margin Actual 2022, Estimate 2023 and Forecast 2024 for the Cereal Enterprise on Specialist Tillage Farms



Source: Teagasc, National Farm Survey Data and Author's estimates for 2024 & forecast for 2025.

4.4 Concluding Comments

The 2023/2024 production year saw some upward movement in cereal gross margins and net margins for the main cereal crops. In 2024, there was a decrease in winter cereal area, with mixed yield performance at harvest 2024 and limited movement in harvest price. There was some reprieve from lower direct costs of production, from fertiliser and seed and higher payments from the tillage top up and unharvested crop loss schemes. Taken together these factors yielded an increase in net margins on the average cereal enterprise on specialist tillage farms.

The gross margin per hectare for spring barley, winter barley and winter wheat are estimated to be up by approximately €420, €180 and €180 per hectare respectively.

The forecast for net margins on tillage farms in 2025 is for an increase in margins, owing to a return to trend yields, a slight increase in harvest prices and limited movement in direct costs. The overall picture for cereal crops is that in general average net margins should be higher than those achieved in 2024 but remain significantly lower than the high margins received in 2022. The upward movement in margins forecast for 2025 will mean that cereal based net margins will be positive on approximately 70 percent of specialist tillage farms in 2025.

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Acknowledgements

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Table A1: Production Costs, Output and Gross Margin for Major Cereal Crops in 2023 (€ per ha)

	Gross Output	Fertiliser	Seed	Crop protection	Machinery Hire	Other direct costs	Total direct costs	Gross Margin
S barley	1494	430	144	211	260	15	1060	434
M barley	1823	472	153	223	293	11	1152	671
S oats	1445	228	182	92	273	20	795	650
W barley	1975	620	139	280	232	23	1295	681
W oats	1653	375	127	162	194	52	911	742
W wheat	2413	680	128	352	220	21	1400	1013
S Beans	1653	184	195	172	134	8	692	961
W Oilseed rape	2132	570	108	252	262	6	1198	934

Source: Teagasc National Farm Survey Data (2023)

Table A2: Variation in output and margin 2023: top and bottom performing spring barley producers

	Top	*Bottom*	*% Difference between Top and Bottom*
Average crop area (hectares)	24	12	96%
Yield (tonnes per hectare)	6.1	5.7	8%
Price per tonne	229	205	12%
Gross output (€ per hectare)	1622	1368	19%
Fert., seed, spray (€ per hectare)	690	878	-21%
Machinery hire (€ per hectare)	169	349	-51%
Gross Margin (€ per hectare)	751	123	511%
Fixed Costs (€ per hectare)	610	687	-11%
Total Costs (€ per hectare)	1481	1932	-23%
Net Margin (€ per hectare)	142	-564	-125%

Source: National Farm Survey Data (2023)

Table A3: Changes in arable crop areas in the EU27

	23/24 M Ha	*24/25M Ha*	% Change
Soft wheat	127.1	114.4	-10%
Maize	47.8	50.5	6%
Barley	62.9	58	-8%
Total wheat, barley, maize area	237.8	222.9	-6%

Source: Strategie Grains (November 2024)

Irish Pig Sector in 2023

Sow population
134,000 head
up 6% on 2022 level

Live Pig Exports
335,000 head
down 10% on the 2022 level

Pig Slaughter
3.48 million head
down 9% on the 2022 level

Feed Prices
€439 per tonne
down 3% on the 2022 level

Pig prices
€2.24 per kg
up 23% on the 2022 level

Margin over feed cost
69 cent per kg
up 165% on the 2022 level

Source: Teagasc Pig Development Unit, Central Statistics Office and Department of Agriculture, Environment and Rural Affairs Northern Ireland

Irish Pig Sector in 2024

Sow Population
138,000 head
up 3% on the 2023 level

Pig Slaughter
3.58 million head
up 3% on the 2023 level

Live Pig Exports
403,000 head
up 14% on the 2023 level

Pig prices
€2.20 per kg
down 2% on the 2023 level

Feed Prices
€378 per tonne
down 14% on the 2023 level

Margin over Feed Costs
86 cent per kg
up 25% on the 2023 level

Irish Pig Sector in 2025

Sow Population
140,000 head
up 1% on the 2024 level

Pig Slaughter
3.63 million head
up 1% on the 2024 level

Live Pig Exports
410,000 head
up 2% on the 2024 level

Pig Prices
€2.02 per kg
down 8% on the 2024 level

Feed Prices
€369 per tonne
down 2% on the 2024 level

Margin over Feed Costs
72 cent per kg
down 16% on the 2024 level

Source: Teagasc Pig Development Unit Estimates for 2024 and Forecasts for 2025

Review of Pig Sector in 2024 and Outlook for 2025

Michael McKeon

Pig Development Department, Teagasc

1. Introduction

In 2022 the Irish pig industry experienced its lowest profitability in 40 years, as the invasion of Ukraine led to escalating feed ingredient and energy costs. During 2023 the sector returned to much needed profitability, and this profitability has continued throughout 2024.

2. Review of Irish Pig Sector in 2024

The review of the sector can be broken into the input costs incurred and the income generated in 2024.

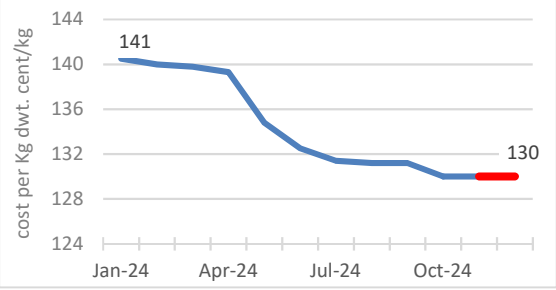
2.1 Pig Production Costs

The cost of producing pigs in Ireland can be divided into feed cost (75 percent) and non-feed costs (25 percent).

2.2 Irish Pig Feed Costs 2024

Monthly Irish composite pig feed prices are shown in Figure 1, expressed in terms of the cost per kg deadweight (dwt.). Feed prices started the year at a high level of 141c per kg, due to continued high compound feed costs stemming from the invasion of Ukraine. As 2024 progressed, falling ingredient prices led to an estimated feed cost of 130c/kg by year end, to give an annual average of 134c/kg. The equivalent composite feed price fell from €393 per tonne in January to €369 per tonne in December (-€24), giving an estimated annualised cost of €378 per tonne, a decrease of 14 percent when compared to 2023 (€439). However the composite feed price still remains 12% above the pre-Ukraine war average feed price in 2021 (€337)

Figure 1: Monthly Irish pig feed cost 2024

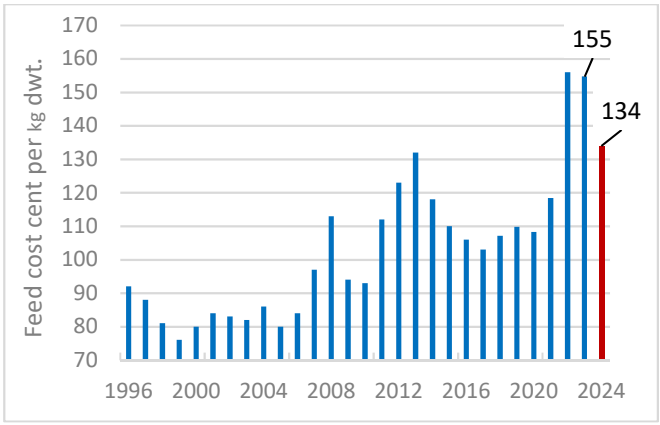


Source: Teagasc Pig Department
* Nov and Dec estimated / forecast

When the composite feed price is examined over a longer time period, the 2024 price of €378 per tonne is still one of the highest over the last forty years. It is significantly higher than the 5 year (2020-2024) and 10 year average (2015-2024) of €369 and €335 per tonne respectively.

Prior to 2022 the previous highest feed cost was in 2012 at 132 cent per kg and the lowest was in 1999 at 76 cent per kg.

Figure 2: Irish pig feed cost 1996-2024



Source: Teagasc Pig Development Department

2.3 Non-feed costs in Irish Pig Production

There are currently 72,000 sows on the Teagasc Profit Monitor (PM) database from a national herd of an estimated 138,000 (52 percent of total). The non-feed costs quoted are based on the national 2023 PM data, (2024 full-year data is not yet available).

Non-feed costs (excluding building depreciation and financial costs) are itemised in Table 1 and 2. Non-feed costs increased by 17% in 2023 compared to the five year average. The largest increases were in the healthcare, heat, power and light and labour and management categories.

The only cost reduction was a marginal decrease in administrations costs (0.9 c/kg vs 1.0 c/kg)

Table 1: Non-Feed Costs in PM Recorded Herds

Cost Item	2023	2019-2023
	cent per kg dwt.	
Healthcare	8.7	6.7
Heat, Power, Light	8	6.5
Transport	2.2	1.8
AI	2.1	1.9
Manure	2.1	1.7
Labour/Management	14.9	14.4
Repairs	3.1	3.1
Administration	0.9	1.0
Environment	0.4	0.4
Insurance	1.7	1.5
House rental	2.7	2.2
Contract Costs	2.2	2.5
Water	0.7	0.6
Dead Pigs Disposal	0.9	0.9
Stock Depreciation	3.3	2.5
Miscellaneous	1.6	1.3
Total	**55.5**	**45.9**

Source: Teagasc PM Report 2023

2.4 Financial Costs in Irish Pig Production in 2024

These costs include interest payments and building depreciation (Table 2) and vary greatly from pig unit to pig unit depending on the age of the buildings and the level of capital investment undertaken in the business in recent years.

It is estimated that the cost of building depreciation and interest is significantly lower than the true level required for a healthy pig industry. This reflects the sector's reduced capital investment due to periodic low levels of profitability.

The lack of capital investment will increase costs in the short term (e.g. heating) and reduce sectoral performance efficiencies in the medium term to long term.

Table 2: Financial Costs in PM recorded herds

Cost Item	2023	2019-2023
	cent per kg dwt.	
Interest	1.3	3.7
Building Depreciation	4.6	2.2
Total	5.9	5.9

Source: Teagasc Pig PM Report 2023

2.5 Total Cost of Irish Pig Production in 2024

The estimated annualised cost of production in 2024 (based on 2023 non-feed costs and 2024 feed costs) was 195.4 cent per kg dwt. for pigs delivered to the slaughter plant. This was marginally (-4.8%) lower then the total cost of production for 2023 (205.3 c/kg).

2.6 Irish Pig Prices in 2024

The estimated average pig price in 2024 was 220 cent per kg dwt., which was below the record high price achieved in 2023 (224 c/kg). It was 38 cent per kg dwt. higher than in 2022 (182 cent per kg dwt) and 61 cent higher than 2021 (159 cent per kg dwt) and significantly higher than the five year (2020-2024) and 10 year average (2015-2024) of 192 and 173 per kg dwt respectively. The high pig price was a market response to the record high feed price and reduced EU pig supply which occured in 2022-2024.

The pig price entered 2024 at a high level of 209 cent per kg dwt. As the year progressed, the pig price increased further to reach a peak of 240 c/kg by mid-August. During the latter half of the year the price declined due to increased international competition, through lower European pig prices, and a lack lustre EU pigmeat export market.

Table 3: Monthly Irish Pig Price in 2024

Month	Pig Price
	cent per kg dwt.
January	209
February	205
March	213
April	219
May	225
June	230
July	233
August	240
September	230
October	219
November*	208
December*	208
Average*	**220**

Source: Teagasc Pig Development Department
* Estimate / forecast

The peak Irish price in 2024 of 240c per kg in August was in-line with other European countries. Spain and France peaked at 240 c/kg and 248 c/kg respectively, and the UK price reached a high of 271c/kg, before gradually declining. The market

expectation is that the continued relatively tight European pig supply will support pigmeat prices during the first half of 2025.

2.7 Irish Pig Production Profitability 2024

The margin over feed cost (MOF) in 2022 was 26 cent per kg dwt. which was the lowest MOF in the last 40 years. The 2023 and 2024 MOF was higher, at 69 and 86 cent per kg respectively.

It is estimated that a MOF of 61.5 cent per kg is currently required to meet all current production costs, including financial repayments. The MOF on a cent per kg achieved in 2024 was above this requirement and therefore led to moderate profitability

Table 4: Margin over Feed Costs 2015-2024

Year	Pig Price (Net)	Feed Cost	Margin over Feed
	Cent per kg dwt.		
2015	148	111	37
2016	149	106	43
2017	162	104	58
2018	140	107	33
2019	168	110	58
2020	173	108	65
2021	159	118	41
2022	182	156	26
2023	224	155	69
2024*	220	134	86

Source: Teagasc Pig Development Department *Estimate

The 2024 MOF is significantly above the norm when compared to the longer term trend shown in Table 5.

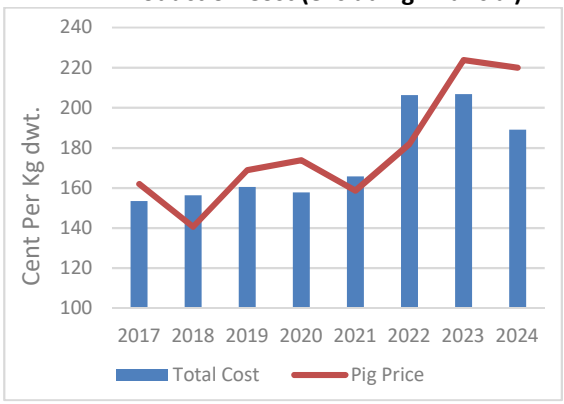
Table 5: Margin Over Feed in 2024 compared to the 5, 10, and 15 year average

	Margin Over Feed	% Diff.
	cent per kg per dwt.	
2024*	86	-
2023	69	24
5 Yr average	57	51
10 Yr average	52	65

Source: Teagasc Pig Development Department *Estimate

Figure 3 illustrates the pig price received and the total production cost (feed cost plus 55 cent) since 2017.

Figure 3: Pig Price compared to estimated Production Cost (excluding financial)



Source: Teagasc Pig Development Department
*Total cost 2024= Feed cost + 55c

The Irish pig sector returned to profitability in April 2023 following 21 months of continuous losses (€540,000 loss per average 600 sow unit). From May 2023 onwards the sector experienced better profitability levels. This profitability has continued into 2024 and has helped the sector to recoup previously incurred losses and regain a solid financial position.

2.8 Irish Sow and Pig Numbers in 2024

The Irish commercial sow herd census in 2021 was estimated at 145,000 (Table 6) and had remained very stable over the previous 10 years despite considerable financial fluctuations in the sector during this period. However, the poor sector profitability in 2022 resulted in approximately 11,500 sows being culled through herd destocks, resulting in an estimated national sow herd of 133,500 in 2023. During 2024 the herd has marginally increased by 3 percent to an estimated 138,000 sows

Table 6: ROI National Sow Herd Size: 2021-2024

Year	2021	2022	2023	2024*
	Thousand head			
Breeding sows	144.8	140.2	133.5	138.0

Source: Teagasc Pig Department

The estimated number of pig slaughterings in 2024 are illustrated in Table 7. The 2024 disposals are estimated to be 3.58 million pigs, which is 2.8 percent higher than in 2023, but 9.4 percent lower than the peak of 2021.

Table 7: ROI born pigs slaughtered: 2021-2024^

Year	2021	2022	2023	2024*
	million head			
Slaughter Pigs	3.95	3.84	3.48	3.58

Source: Teagasc Pig Department ^ Includes. N.Ire. plants *Est

The quarterly disposals (Table 8) illustrates an increase in the quarterly Year-on Year differential. This reflects the marginal increase in the national sow herd size over the past 12 months.

Table 8: ROI born^ pig disposals 2024

	Disposals (hd)	% Diff. YOY
Q1	882,390	-1%
Q2	863,184	1%
Q3	907,435	5%
Q4*	925,736	4%
Total*	3,578,745	2%

Source: Teagasc Pig Department ^ Includes. N.Ire. plants *Est.

The percentage of ROI born pigs being slaughtered in Northern Ireland processing plants has declined considerably since the peak in 2013 (Table 9). The number being exported, as a percentage of national production, has declined from 18 percent (514,000 pigs) in 2015 to an estimated 11 percent (403,000 pigs) in 2024. However the export volume in 2024 was the first increase in five years.

Table 9: Slaughter and Live Export to N. Ireland of ROI Born Pigs from 2015-2024

Year	Licensed Export Plants in Ireland	Exports to Northern Ireland	Exports as % of Total
	million head		%
2015	3.132	0.514	16
2016	3.221	0.414	13
2017	3.295	0.433	13
2018	3.337	0.463	14
2019	3.273	0.425	12
2020	3.343	0.456	13
2021	3.523	0.429	11
2022	3.499	0.394	10
2023	3.130	0.353	10
2024	3.176	0.403	11

Source: DAFM & DARDNI *estimate

The combination of high sow prolificacy and higher sale weight led to a significant increase in the annual volume of Irish pigmeat being produced year-on-year up to 2021, when it hit a peak (Table 10). However, in 2022-2023 the trend was reversed, reflecting the decline in the size of the Irish national sow herd. The output in 2024 was up moderately, due to the small increase in sow numbers and a forecast higher sale weight.

Table 10: Irish annual pigmeat output 2019-2024

Year	Total Pigs Slaughtered	Ave Dead weight #	Total Pigmeat Produced
	Million Head	Kg	Tonnes
2019	3.70	86.7	320,790
2020	3.83	87.7	335,891
2021	3.95	90.7	358,265
2022	3.84	90.6	348,238
2023	3.48	90.6	315,642
2024*	3.58	91*	325,780

Source: DAFM & DARDNI * Estimated ^ ROI born # Teagasc

The reduced volume of slaughter pig disposals since 2022 has increased the spare kill capacity in the principal pig processing plants in Ireland. While this gives greater flexibility to the sector in the event of a processing plant temporarily going off-line e.g. breakdowns etc., a recovery in pig supplies in the short-to-medium term is important to ensure the optimum efficiency of Irish pig processing plants.

2.9 EU Sow and Pig Numbers in 2024

The national sow herds in all major pig producing countries across the EU, decreased during 2023 with the exception of the Spain. The Spanish herd is the largest EU sow herd and has grown by 433,000 sows (+18 percent) over the last 10 years.

Since 2020 the other major European herds; Germany, Denmark, Poland and France, have declined by an aggregate 718,000 sows (2020 - 2023).

In 2023 Poland increased its herd size by 12% (+72,000 sows) but the Polish sow herd size is still significantly lower than its peak in 2020 (829,700 vs 674,390)

Table 11: Changes in selected European sow herds*

	Dec 22	Dec 23	Change
Country	Million head		%
Spain	2,690	2,827	5.1%
Germany	1,416	1,415	0.0%
Denmark	1,128	1,142	1.2%
Netherlands	892	921	3.3%
France	880	860	-2.3%
Poland	603	674	11.9%
Italy	717	673	-6.1%
Belgium	368	352	-4.4%
Romania	289	278	-3.7%
Austria	212	207	-2.4%
Sweden	120	106	-11.5%
All	9,672	9,815	1.5%

Source: Eurostat * 11 selected member states

The level of pig disposals in some of the principal pig exporting countries are shown in Table 12. The decline in the volume of pig slaughterings has largely stabilised after the significant decrease which occurred in 2022.

The Spanish pig slaughter numbers significantly decreased (-6.3%) in 2023), due to a pig disease outbreak (PRRS) which reduced the supply of pigs for slaughter. In the period to September 2024 the decline was marginal (-0.5%), and in recent months the Spanish weekly slaughter volumes have begun to increase again.

Table 12: Selected European & North American Pig Slaughtering's

	2023*	2024*	Change
Country	Million head		%
Germany	31.14	31.20	0.2
Spain	35.02	34.85	-0.5
France	15.29	15.12	-1.1
Denmark	11.98	11.63	-2.9
U.S.	107.16	108.33	1.1

Source: MPB 2024 *Jan-Sept

2.10 EU Pigmeat Exports in 2024

Ireland's pigmeat exports increased in 2024 (Jan-Aug) by an estimated 1.4 percent (165,000 vs 161,873 tonnes). This increase was in opposition the EU trend, where aggregate pigmeat exports declined by 2.8%.

Table 13: Pigmeat exports from selected countries

Country	2023*	2024*	change
	million tonnes		%
ROI^	0.161	0.165	2.3
EU	2.19	2.13	-2.8
USA	1.47	1.51	3.3
Canada	0.69	0.74	6.6
Total	4.35	4.38	0.8

Source: MDP * Jan-Jun ^ Jan-Aug

The Irish year-on-year pigmeat export volume to China increased by a modest 1.4 percent in 2024, but when compared to the peak of 2021, the volume and value have both declined by 56 percent and 44 percent respectively. However, China is still a very significant market for Irish pigmeat exports constituting 23% of our total pigmeat exports.

The decline in EU exports was largely down to the decline in Chinese pigmeat imports as a result of the recovery in China's sow herd. However, pigmeat exports to China are still very important for European pig production, as China consumes 25 percent of total EU pigmeat exports. This fact is important in light of the Chinese government's current consideration of potential trade tariffs on EU pigmeat as a response to the EU's imposition of tariffs on Chinese electric cars. Any imposition of tariffs on EU pigmeat export to China would reduce the EU's price competiveness, creating the potential for a loss in the EU's market share to Brazil, Canada and other major exporters.

Table 14: Pigmeat exports to China

Country	2023	2024	change
	Thousand tonnes		%
ROI^	37.8	38.4	1.4
EU*	615	542	-12
USA^	105.2	47.9	-55
Brazil^	324	188	-42
Canada^	111	53	-53
Total	1,267	785	-38

Source: MDP * Jan-Jun. ^ Jan-Sept.

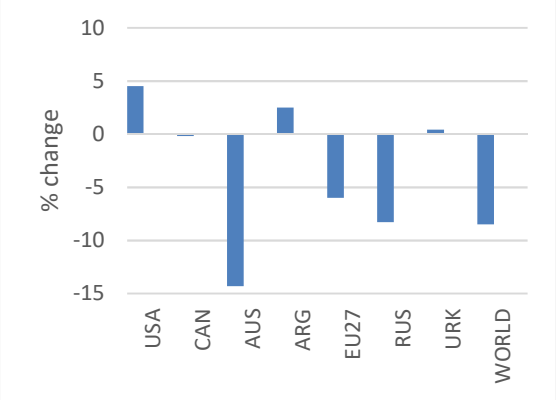
3. Outlook for Irish Pig Sector in 2025

The 2025 outlook for the pig sector is predicated on the expected global pig feed and pig price market developments.

3.1 Irish Pig Feed Price Outlook in 2025

The elevated pig feed ingredient costs which resulted from the invasion of Ukraine have now largely dissipated. The cost per tonne of maize, barley and wheat is now lower than before the invasion. However international cereal prices are still very dependent on export volumes from the Black Sea region. Russia and Ukraine (R&U) are forecast to produce a combined 102 million tonnes (MT) of wheat in 2025, 14 percent of the estimated 720MT total wheat output from major producers. However, the estimated 2025 combined wheat exports from R&U (59MT) contributes 45 percent of the 171MT from major exporter. Russian wheat continues to be the lowest cost per tonne on the international wheat export market. Therefore any sudden supply change from the Black Sea region could create significant price ripples or even a price shock in the cereal market. The wheat price outlook, based on crop conditions, area planted etc. is relatively stable for 2025.

Table 15: Changes in wheat production 2024/25 versus 2023/24

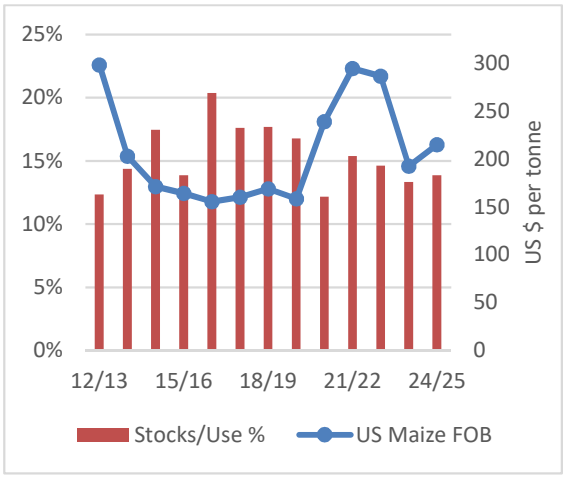


Source: Strategie Grains 2024

Flooding affected some of the US maize crop in June 2024, but despite this issue, the US crop for 2024-25 is forecast to be the third highest of all time. However, Ukraine, one of the largest global maize producers, did not fare as well. It is forecast that their 2024-25 harvest will return a reduction of 20 percent when compared to the previous year.

The overall global closing stock is estimated to increase by 2.7MT to 290MT. The closing stock of the 'major maize exporters' is estimated to improve marginally when compared to 2023/24.

Figure 4: Global maize stock-to–use ratio for main exporters



Source: Strategie Grains 2024

The soyabean planting season is now concluding in Brazil, the world's largest producer. The soil moisture level was initially very dry and delayed planting, however rain has arrived in the interim and the pace of planting is now ahead of last year. The Brazilian 2024-25 crop is forecast to be 165MT, which would be a record harvest. Sustainability licensing was due to be introduced in Jan 2025, but has been delayed for 12 months. However, this may increase soybean prices towards the end of 2025, as the revised sustainability implementation date nears (January 2026).

Overall, the outlook for the composite pig feed price in 2025 is relatively benign, with the price expected to change little during the first few months of 2025. The arrival of the northern hemisphere cereal and soybean harvests will result in the maintenance or a moderate decrease in some feed ingredient prices e.g. soyabean. The average feed price per tonne may also decline if there is a continuation in the trend towards pig producers utilising compound feed mills, to forward-buy/undergo contract milling agreements.

It is forecast that feed costs will be stable in the first half of 2025, followed by a moderate decrease in the second half of 2025, to generate an average 2025 pig feed cost of 130 cent per kg dwt. (composite feed price of €369/t). This is a decrease of 3 percent on the 2024 level.

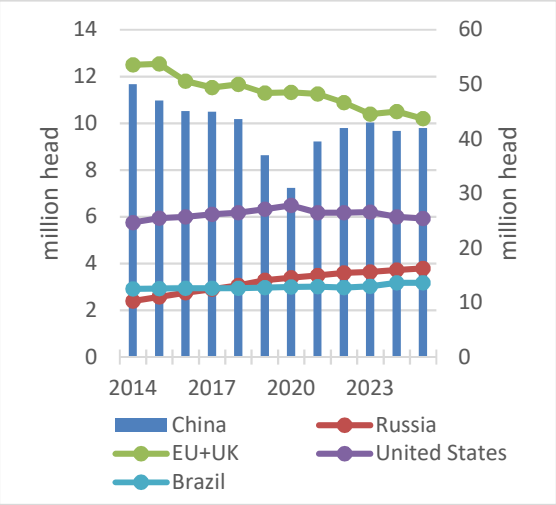
3.2 Pig Prices in 2025

The outlook for the Irish pig price in 2025 is going to be driven by EU pigmeat supply and EU pigmeat exports.

The reduction in the EU & UK sow herds of an estimated 1 million sows over the last four years,

has resulted in approximately 25 to 27 million less pigs entering the supply chain on an annualised basis, when compared to the peak output in 2021. This shortfall is not expected to be filled in the short-medium term as more demanding EU welfare, housing and environmental legislative standards, will make future expansion more expensive and difficult to achieve.

Figure 5: International sow herds 2014 – 2025f



Source: USDA 2024

However, the reduction in pig supply since 2020 has been substantially off-set by a decline in EU pigmeat exports over his period of 2 million tonnes. The reduction in EU export volume has resulted in the larger EU exporting countries e.g. Spain, Denmark, Netherlands, supplying a greater percentage of their pigmeat output into the EU internal market rather than for export.

The principal reason for the reduction in EU exports is the lower Chinese import requirement. In 2020 pigmeat exports to China comprised 52 percent of total EU exports, but in 2024 it is forecast that this volume will have fallen to 25 percent of the total. The reason for this is due to a recovery in the Chinese domestic pig supply and weaker Chinese domestic demand. The 'sluggish' Chinese economy has resulted in lower domestic demand for pigmeat, especially for more expensive imported pigmeat.

A decision by the Chinese government to implement trade tariffs on pigmeat would have a significant effect on the outlook for EU and Irish pig prices in 2025. An imposition of tariffs would reduce the EU's competiveness and give competitors a trade advantage e.g. Brazil. A further reduction in exports of pigmeat to China would, in the short term, increase the volume of pigmeat available on the internal EU market, with a resultant downward pressure on price. In the absence of firm knowledge of whether or not tariffs will be imposed, this paper considers the 2025 pig price on the basis of market supply and demand, with no new tariffs being implemented.

It is forecast that the continued reduction in the EU pig supply and weak EU exports / Chinese import demand will continue to be experienced in 2025. The lower EU pig supply will ensure a pig price floor for the EU and Irish market, but the increased supply of Spanish pigs and the absence of strong exports, would suggest that the 2025 pig price is unlikely to regain the peak experienced in 2024.

Therefore, the EU and Irish pig price may decrease at the start of 2025, but should recover in Q2 and rise steadily, reaching a plateau by mid-summer. A marginal weakening in pig prices is forecast in Q3 and Q4.

3.3 Pig Sector Profitability in 2025

A pig price reduction in early 2025 implies that the MOF for Q1 will tighten until the pig price begins to rise.

As the pig price increases in Q2 of 2025, the MOF will improve. In addition, a moderate easing of feed costs is expected to begin towards the end of Q2 of 2025, which will produce moderate profitability in Q1 and Q2. A marginal downward trend in feed cost, allied with a moderate reduction in pig prices in Q3 and Q4, will lead to continued profitability in the second half of 2025.

The forecast margin-over-feed of 72 cent/kg dwt. indicates that 2025 will be profitable, but at a lower level than in 2024.

Table 16: Pig & Feed Price Forecast 2025

Year	Pig Price (Net)	Feed Cost	Margin over Feed
	cent per kg dwt.		
2024*	220	134	86
2025^	202	130	72

Source: Teagasc Pig Development Department
*Estimate ^ Forecast

4. Conclusion

The Irish pig sector returned to profitability in 2023 and this profitability continued in 2024. The outlook for 2025 is for the sector to continue to be profitable, albeit at a more modest level than in 2024.

Review and Outlook for Forestry 2025

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1. Introduction

The Irish forest sector continues to evolve and represents an increasingly important resource to rural economies and at national level. Since 1980, 24,026 individual private forest owners have received grant aid to establish their forests (DAFM, 2024). Eighty two percent of the area afforested since 1980 has been established by farmers. In 2023, forest and wood products, to the value of €647 million were exported to over 50 countries (DAFM, 2024a). In terms of sectoral value, the Forestry and Logging and the Wood and Wood Products sectors together produced €686 million of Gross Value Added in 2022 (DAFM 2024). Ireland's forest sector supports 9,400 direct and indirect jobs, the majority in rural areas (Forestry Services and Phillips, 2022).

The overriding objective of Ireland's Forest Strategy (2023-2030) is to "urgently expand the national forest estate on both public and private land in a manner that will deliver lasting benefits for climate change, biodiversity, water quality, wood production, economic development and quality of life". This is acknowledged as a challenge of very significant proportions, which will require a comprehensive response from all stakeholders involved (DAFM, 2023a).

The main implementation mechanism for the Forest Strategy in the short to medium term is the current Forestry Programme. The associated Forest Strategy Implementation Plan sets out how Ireland's ambitions to expand its forests and to increase its role in helping address climate and biodiversity objectives at both National and EU level can be realised (DAFM, 2023a). A mid-term review of the Forestry Programme is scheduled for 2025.

In recent years the private sector has progressed in making a substantial contribution to the annual harvest. Drivers include the increased area of private forests reaching harvest stage, and the increased export market share gained by sawmills. Many private forests established during the 1980s and 1990s are approaching silvicultural maturity. With appropriate level of timber mobilisation support, this timber resource is projected to result in a significant increase in supply to the market in the coming years. This projected increase will be a driver for many associated benefits in terms of sectoral growth and wider employment potential (Teagasc 2020). The challenge is to ensure that measures contributing towards these targets equitably address the economic, environmental and social benefits that forestry can deliver.

Forests and forest products can play an important role in mitigating climate change by sequestering and storing atmospheric carbon dioxide (CO_2). Ireland's forest sink is, however, declining and is projected to become a net source of emissions for a period by 2025. This is due to a number of factors including recent low levels of afforestation, legacy emissions associated with forests planted on organics soils, a projected increase in timber harvesting levels in the private sector and a decline in growth rates associated with the age profile of the forest estate (Jarmain *et al*, 2024).

In line with Ireland's Climate Action Plan 2024, an expanded and sustained afforestation programme of 8,000 ha or more will improve the future sink capacity of the forest estate. While plantings now, at any scale, will not contribute significantly in the way of carbon sequestration out to 2030, they will be critical post 2030 (DECC, 2024). There is also a need for consideration of appropriate forest management measures to increase the carbon storage of existing forests. In addition, the increased use of wood products, including sawnwood and advanced engineered wood construction products also offer a sustainable alternative to high CO_2-producing construction materials and provides an opportunity to reduce the embodied emission of buildings (COFORD, 2021).

2. Forestry Financial Supports

In 2023, over €73.8 million in state expenditure was spent by the Department of Agriculture, Food and the Marine (DAFM) in forestry. Almost 83 percent of

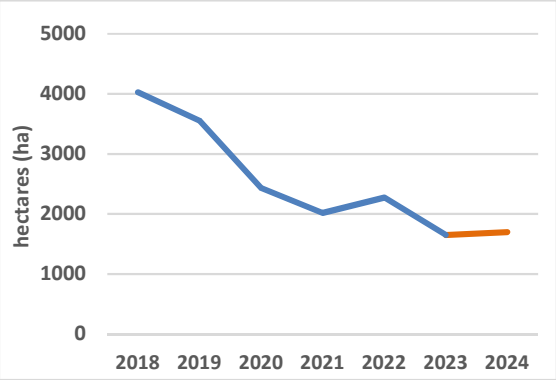
this went towards afforestation grants and premia (DAFM, 2024).

The Government, in its budget for 2025, announced an allocation of €91 million to support the National Forestry Programme 2023-2027. This compares to an allocation of €110 million in the previous budget. Investment in increased operational efficiencies helps provide the capacity to issue sufficient licences to meet the Climate Action Plan target of 8,000 ha of new forests and the funding in Budget 2025 was allocated to underpin the diverse range of planting options on offer through the Forestry Programme (DAFM, 2024b).

3. Planting in 2023/2024

In 2023, DAFM made payments relating to the planting of 1,651 hectares (ha) of land, down from 2,273 ha in 2022 (Figure 1), and substantially below national targets of 8,000 ha. Roscommon had the highest afforestation area by county at 189 ha, followed by Galway and Mayo at 139 ha and 131 ha respectively. The proportion of broadleaves in new forests created during 2023 was 54 percent, up from 42 percent in 2022 (DAFM, 2024).

Figure 1: Annual planting 2018 to 2023, with projection for 2024



Source: DAFM (2024, 2024c)

Based on planting levels to date, the projected total area that will be in 2024 is again below 2,000 ha. This figure reflects the magnitude of the challenge to substantially increase afforestation rates and progress towards national planting targets in 2025.

An overall area of 7,346 ha has been approved for forest creation since the new Forestry Programme commenced in 2023. This includes 5,355 ha licenced under the current Afforestation Scheme, 1,602 ha previously approved and now licenced under the current scheme and 389 ha licenced under the Native Tree Area Scheme (DAFM, 2024c). Magner (2024) welcomed recent increases in planting approvals if they can be maintained. He posited that the benefits of increased approvals may not be seen until the spring 2025 programme. A key sectoral challenge is to support decision making on the conversion of land licenced for planting into hectares of new forests while also helping ensure an increasing trend in the volume of new planting applications.

DAFM has significantly invested in ecology, forestry, IT and other resources to deal with licensing issues and improve turnaround times. Half of applications are processed within 6 months and 75% within 9 months. DAFM is committed to processing all files within 9 months (DAFM pers. comm.).

The Forestry Programme 2023-2027, launched in September 2023, provides 12 "Forest Type" planting options, with associated premiums increases of between 46 and 66 percent over previous levels and the extension of annual payments to 20 years for farmers. A separate Native Tree Area Scheme, which builds on a recent amendment to the Forestry Act 2014, removed the licensing requirement for the planting of native woodland in areas not greater than one hectare. The Scheme also supports planting for an additional hectare specifically to protect water courses.

Stakeholder feedback suggests constraints to planting uptake include environmental constraints (bird breeding habitats, peat depth and high nature value farmland), described as having capacity to slow down licence approval and restrict land availability for afforestation. The current significant agricultural demand for even marginal land was also identified as a challenge.

3.1 The Decision to Plant

The Teagasc National Farm Survey (NFS) collects information annually on a sample of farms with a forest enterprise. The sample is statistically weighted to represent the national farming population. Of the 84,929 farms represented by the 2023 survey (Dillon *et al.*, 2024), 8,097 farms (9.5 percent) contain forests, with an average ownership of 10.3 ha per farm. Those farmers participating in the Teagasc NFS have forests spread over a range of age classes. On average, 55 percent of farms with forests received payments in 2023 with an average payment of €4,071. A summary, indicating the extent to which farms and farming systems include forests, is presented in Table 1.

Teagasc NFS data for 2023 indicated that the Cattle systems represent the largest population of farms

with forest area. Over nine percent of Cattle Other farms (3,087), which make up almost 40 percent of the farming population in the NFS, have a forest enterprise while 12.3 percent of Cattle Rearing systems (1,796) also have a forest area. This is not surprising as beef farmers account for 70,000 of 135,000 farmers nationally. There is also a significant forestry presence on farms from other enterprises, with 9 percent of sheep farms (1,274), 7.4 percent of dairy farms (924) and 12 percent of tillage farms (748) having forest area included (Table 1).

Table 1: Teagasc National Farm Survey 2023 - Forestry Representation on Irish Farms

System	Farm Population	Farms with forest	% with forest
Dairy	15,319	924	7.4
Cattle Rearing	14,558	1,796	12.3
Cattle Other	33,669	3,087	9.1
Sheep	13,979	1,247	9.0
Tillage	6,246	748	12.0
Mixed Livestock	1,158	276	23.8
ALL	84,929	8,078	9.5

Source: Dillon *et al*. 2024

Ireland's Forest Strategy Implementation Plan (DAFM, 2023a) identified barriers to achieving the 8,000 ha annual forestry target. These include competing land uses that offer higher economic reward in the short term, the permanent land use change required, difficulties in the administration of forestry licences in recent years and negative farmer perceptions of forestry. The Plan also identified the need for awareness raising of forestry as a profitable and recognised land use and the need for incentives to plant appropriate species to ensure forest resilience.

Ryan and O'Donoghue (2016) outlined how the conversion of land from agriculture to forest involves a multifaceted and complex decision making process. Factors relevant to this land use change decision, and still very relevant currently, consist of physical, economic and behavioural drivers. The latter includes the permanence of the land use change when moving from agriculture to forestry and socio-cultural attitudes associated with the decision, soil quality and the opportunity cost of planting. The potential relative returns to both agriculture and forestry and the timescales involved also constitute significant factors reported as affecting the afforestation decision. This will be considered further in section 4.

Irwin *et al*. (2023) used the Theory of Planned Behaviour to investigate the main attitudes, influencers and intentions of Irish dairy and drystock farmers to planting trees. The results demonstrated that these farmers are mainly driven by their attitude and moral norms which in turn were shaped through the views of people they perceive as influential, such as family, advisors and other local farmers. Environmental benefit was cited as a key advantage to having trees on farms.

4. Financial Returns - Forestry Programme 2023 - 2027

The Teagasc Forest Investment Valuation Estimator (FIVE) supports decision making in relation to potential land use and forestry options. FIVE software applies Discounted Cash Flow (DCF) analysis to model indicative financial returns for forestry land use options (forest creation) and management options (e.g. forest thinning). It provides financial output facilitating decision support, particularly in relation to reviewing pre-planting options and comparing criteria such as tree species, yield classes and forest rotation lengths according to landowners' preferences and objectives.

Potential timber revenues are generated by FIVE through the selection of forest characteristics and management regimes. A range of variables are used as inputs in a typical financial analysis. These include tree species, site productivity, rotation length (forest cycle), relevant premium payments, establishment and on-going management costs, as well as potential thinning and clearfell timber volumes and revenues. Future cost and revenue streams from forestry scenarios are generated by FIVE and are discounted to present day values and presented as Net Present Values (NPVs).

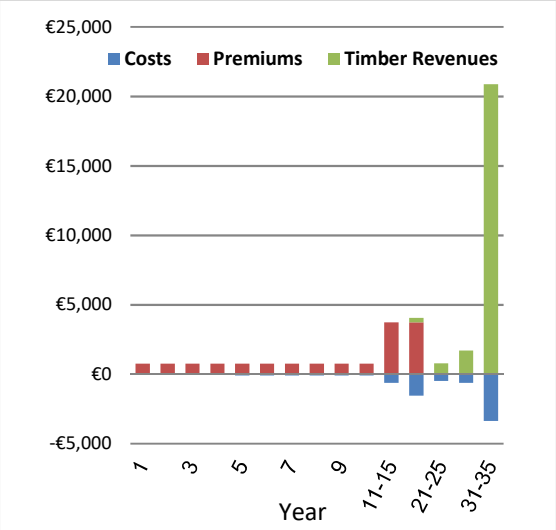
The NPV refers to the net returns to forestry over one (or more) forest rotation(s). In order to compare forestry with other farm enterprise options (at an indicative level), the FIVE tool expresses different forest crop rotations on an annual per hectare basis by generating the Annual Equivalent Value (AEV) for each forest scenario. The AEV expresses the NPV as a series of indicative equal cash flows over the forest rotation. Figures 2 and 3 present indicative financial returns for one hectare of the following Forest Types (FTs):

- **FT 12**: comprising mixed high forest (mainly spruce with 20 percent broadleaves)
- **FT 7**: other broadleaf forest , comprising fast growing broadleaf such as sycamore

"FT" refers to the relevant Forest Type under the DAFM Forestry Programme.

If all costs and revenues associated with forestry land use are compared with all costs and revenues associated with agricultural land use (after adjusting to present values and the one-year cycle per annum basis) then the Forestry AEV per hectare and family farm income can be considered conceptually equivalent. A summary of the comparative financial outputs from FIVE analysis for these two afforestation categories is presented in Table 2. The respective indicative AEVs are €740/ha/year for FT12 and €578/ha/year for FT7.

Figure 2: Indicative Forest Returns - one hectare of Forest Type 12 (FT12)



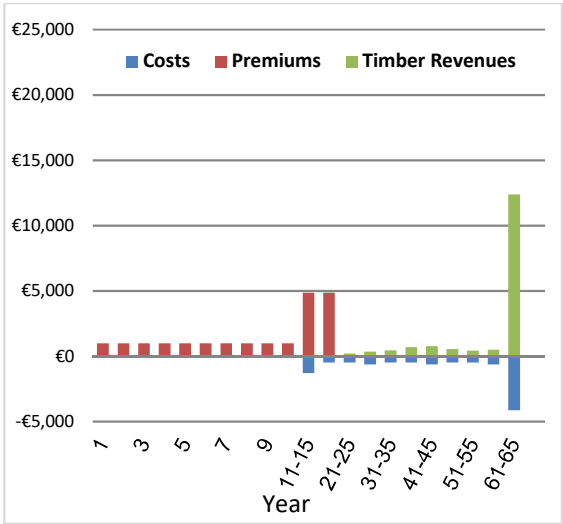
Source: Teagasc, FIVE (2024)

Assumptions: Forest Type 12, mixed high forest with mainly spruce (Yield Class 24), 20 percent broadleaf species, 15 percent of area retained for biodiversity enhancement, initial spacing of 2m, forest cycle of 35 years, reforestation costs of €3,500/ha, discount rate 4.5 percent, 10-year average timber prices used.

It should be borne in mind that this analysis can be used to compare agricultural incomes with projected future forestry income flows discounted to today's values and converted to annual equivalent. This allows an indicative rather than absolute comparison. With AEVs of up to €740/ha/year, it is evident that forestry returns based on proposed new premia levels in the Forestry Programme 2023-2027, can be very competitive when compared to many agricultural enterprises.

The current analysis involving the FIVE tool does not take into account the capacity for eligible forestry parcels to draw down Direct Payment supports in addition to the annual forestry premia. For qualifying applicants meeting scheme criteria, these can include supports available under the Basic Income Support for Sustainability (BISS) Scheme, the Complementary Redistributive Support for Sustainability Scheme (CRISS) and Eco-Scheme. The FIVE tool also does not factor in the relative efficiencies in terms of labour inputs when compared to other enterprises or the potential income-tax free returns from future timber sales. FIVE cannot account for uncertainties such as potential subsidies that agricultural and forestry land will attract in the future or what new values may emerge for the services produced by agricultural and forestry land uses.

Figure 3: Indicative Forest Returns - one hectare of Broadleaf Forest (FT7)



Source: Teagasc, FIVE (2024)

Assumptions: Forest Type 7 (85 percent sycamore (Yield Class 10), 15 percent retained area for biodiversity enhancement), initial spacing 1.5 m, forest cycle of 65 years, reforestation cost of €4,500/ha, discount rate 4.5 percent, 10-year average timber prices used.

Table 2: Comparative per Hectare Financial Outputs (€) - Forest Types 12 and 7

Proposed Forest Type / Financial output	Forest Type 12	Forest Type 7
Total revenues (€)	38,575	35730
Total costs (€)	7,391	10985
Net Present Value (€/ha)	12,917	12,114
Annual Equivalent Value (AEV) €/ha/year	740	578

Source: Teagasc 2024

5. Licensing of Afforestation and Felling

DAFM were legally required to make changes to the way licences were processed as a result of European and high court cases in 2018 and 2019 respectively. These changes to the Appropriate Assessment procedures required significantly more ecology-related effort for each file and the Department, with the resources they had at that time, could not process files at the rate they were being received. A resultant backlog of files developed, and many files were delayed for a significant time. This was referred to as the licensing crisis (DAFM 2024, pers. comm.).

Minister of State for Land Use and Biodiversity at the Department of Agriculture, Food and the Marine, Senator Pippa Hackett, published the Department's forestry licencing plan for 2024. The plan estimated that the Department would issue 4,200 new licences in 2024, and with capacity to issue sufficient licences to meet its annual target of 8,000 hectares of new forests.

The Plan built on recent improvements in the Department's licencing system. The objective was to issue afforestation licences within six months for straightforward projects - these are projects that are screened out from additional environmental assessment. For more complicated sites, where additional environmental assessment is needed, the department estimated that it would take up to nine months to issue an afforestation licence (DAFM, 2024d).

6. Timber Harvest and Supply

6.1 Felling Licence Approvals

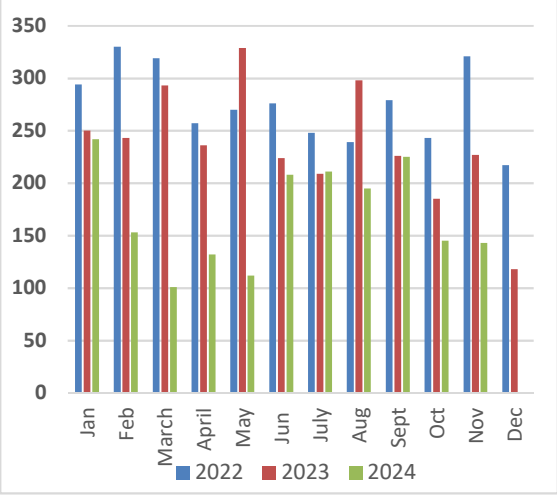
The DAFM have responsibility for regulation and licencing of tree felling in Ireland. The Forestry Act 2014 requires applicants to provide notice of intention to fell trees and provides for a single felling licencing process.

The number of felling licences issued annually is reported as a monthly sectoral figure, combining licence numbers issued for Coillte and private forest owners. The total number of felling licences issued up to Week 3 November, 2024 was 1,850 (Coillte 966, private 884). In comparison, the total number of felling licences issued for 2023 and 2022 was 2,838 and 3,293 respectively (Figure 4).

The 2024 felling licence approvals issued (to October, 2024 inclusive) represent thinning area of 3,215 ha and clearfell area of 16,023ha (DAFM, 2024e). This compares to an approved thinning area of 6.613ha and clearfell area of 20,418 ha for the full year of 2023.

When considering the above data, it should be borne in mind that applicants for felling licences may apply for multiple harvest events on the same forest plot in a felling licence application. All felling licences allow for a 10-year period to carry out thinning and/or clearfell, as stipulated under the Forestry Act 2014. Further information on the breakdown of private and Coillte licensing is contained within the DAFM weekly Forest Licensing Dashboard (DAFM, 2024c).

Figure 4: Monthly Felling Licences Issued 2022 to November (Week 3) 2024



Sources: DAFM, Forestry Section Monthly Reports (2022/23/24) and Forestry Dashboard 2024

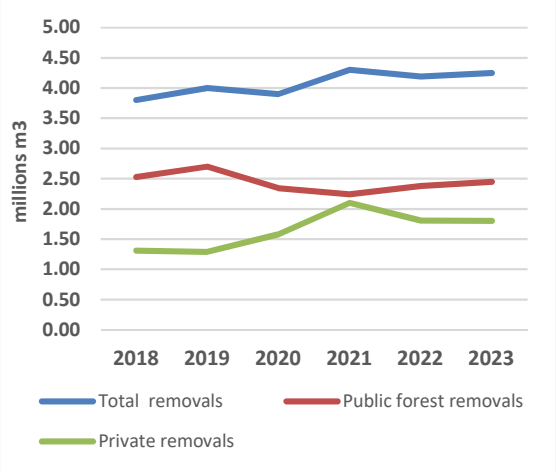
Magner (2024) outlined the challenges of analysing bulk volumes for total felling licences issued annually. Such data does not indicate when timber volumes would reach the market as they are spread over a period between one and ten years, with the potential of a further 5-year licence extension. He highlights the merits of a breakdown of log supply issued annually to reflect the harvesting schedule of licence applicants over the duration of their felling licence period. Analysis, based on felling licences approved in the 2020-2023 period and years of felling as indicated by licence applicants, suggests that forest owners with licences schedule an indicative 33 percent of their harvesting in the year of approval. This allowed for an estimate of year timber availability (Magner 2024).

Similar to the sectoral requirement regarding afforestation licences, feedback also highlights the need to sustain progress achieved in the flow of approvals for both forest road construction and harvesting operations in 2025. This will facilitate the essential elements required to maintain a well-functioning timber supply chain.

6.2 Wood Removals from Forests / Purchases by Industry

The Central Statistics Office (CSO) compiles annual returns for forestry data in Ireland since 2019. These includes statistics on forest wood removals and wood input purchases by industry.

Figure 5: Roundwood Removals 2018-2023 (millions m³)

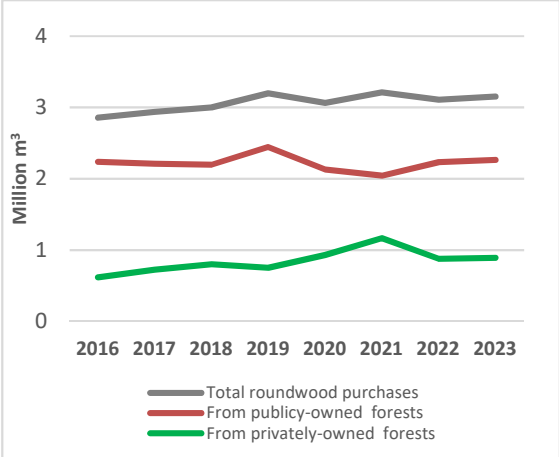


Source (CSO 2024)

Roundwood removals from Irish forests reached a reported 4.25 million cubic metres (m³) in 2023 (Figure 5), with an overall value of €214 million. This represented a 1.5 percent increase in volume (from 4.19 million m³) on 2022 levels but a reported 16 percent decrease in value. Wood removals from private forests in 2023 comprised over 43 percent of total removals, compared with 42 percent in 2022 (CSO, 2024).

The total volume of roundwood input purchases by industry was reported as 3.1 million m³ in 2022, a 3.0 percent decrease from 2021 levels. This figure incorporated additional Coillte supply of 9 percent in 2022 with a corresponding decline in private timber production. This reduction represented a departure from the three-year period 2019-2021 when production in private forestry increased from 1.29 m³ to 2.10 m³ (CSO, 2023 and Figure 6).

Figure 6: Roundwood Purchases by Industry 2017-2022 (millions m³) with 2023 forecast

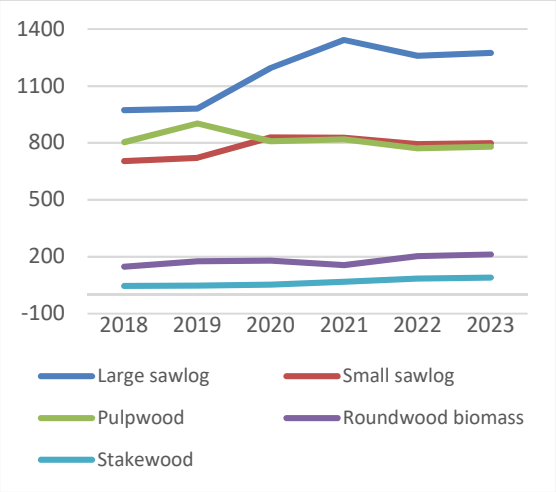


Source: CSO 2024

Overall in 2022, large sawlog had represented the highest proportion of roundwood purchase volume at approximately 40 percent. Both small sawlog and pulpwood each accounted for 25 percent of purchase volumes (Figure 7). Non-roundwood products such as brash, tree stumps, woodchip and sawdust totalled 424,000 tonnes in 2022, comprising approximately 10 percent of the total purchase.

At the time of writing, 2023 industry purchase figures were not available. Figures 6 and 7 include forecasted conifer roundwood purchases by industry and total roundwood purchases by product based on the CSO 2023 roundwood removal figures and industry feedback. These projected figures are forecast to be similar to 2022 industry equivalents.

Figure 7: Coniferous Roundwood Purchases by Product 2017-2022 (000s m³) with forecast for 2023



Source: CSO 2024

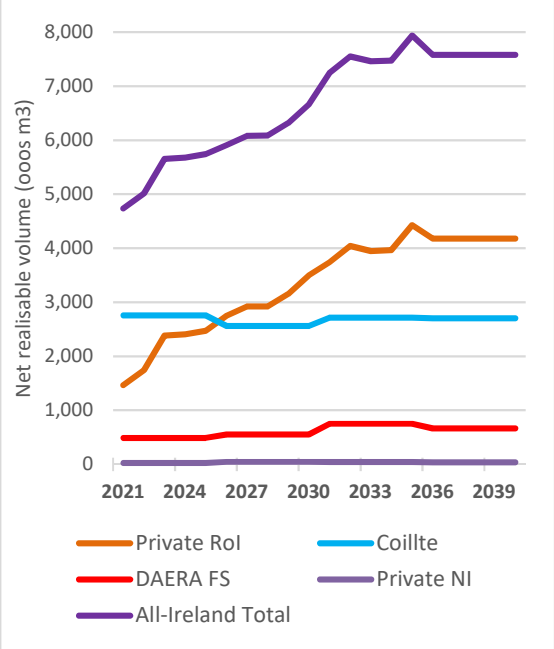
Feedback from the forestry sector indicates ongoing subdued levels of harvesting activity during 2024. Magner (2024a) suggests that it is understandable that forest owners with licences may hold out for stronger prices before clearfelling when the large sawlog market is static. He also recommends that forest owners should be undertaking timely forest thinning which is of strong benefit in suitable forests.

6.3 Realisable Future Timber Volumes

The COFORD All Ireland Roundwood Production Forecast 2021-2040 (Phillips *et al.,* 2021) includes both private and public forests. The forecast for net realisable volume (NRV) totals 133.45 million m³ over the forecast period. The NRV increases from 4.74 million m³ in 2021 to 7.94 million m³ in 2035, followed by a small decrease of 0.35 million m³ and then remains constant at circa 7.6 million m³ up to 2040. When compared with the previous forecast over the common reporting period 2021 - 2035, the volumes are broadly similar (Figure 8).

The forecasted increase in domestic demand for Irish construction timber will, if realised, provide an opportune outlet for increasing supply. Stakeholder feedback indicated that more activation of private sector licences may also support the sectors capacity to reduce and eventually remove our dependence on timber imports and the threat from pest damage to our forests health (see section 13).

Figure 8: Forecast of Total Net Realisable Volume Production by ownership category to 2040 (≥ 7cm top diameter)



Source: All-Ireland Roundwood Production Forecast 2021-2040 (COFORD, 2021)

7. Timber Demand

7.1 Global Demand/Supply Trends

Softwood lumber is a major industry in the European Union, valued at over €30 billion annually, with hardwoods comprising a significantly smaller sector. Sawmills typically operate by producing on order (70-90 percent of production, according to region) and producing to stock (10-30 percent). While most European sawmills conduct direct business within the European Union, many also rely on markets outside of the continent (Global Wood Market Info, 2024).

The softwood industry, like other industries, is influenced by broader economic and geopolitical factors. For example, the Chinese economy has reportedly been under pressure, with a decline in population and housing starts down 70 percent since 2019. Softwood lumber consumption has reduced by a third over the last three years, albeit with a reported slowdown in the decline in recent times (Global Wood Market Info, 2024). While there is a reported expectation of imports to rise, Russia is now expected to be China's dominant supplier.

North America's economy is reportedly performing well, on the back of strong immigration and a younger demographic. Lumber demand is expected

to increase as housing needs increase. However, Canadian softwood producers are reportedly expecting a doubling of US import duties in 2025 and are considering other markets. The Middle East and North Africa (MENA) region is a key market for European softwood exports and has performed relatively well compared to Europe. Demand from India, the only major global economy that is currently booming, is expected to grow significantly from its current small base (Global Wood Market Info, 2024).

As much of the global economy faces a slowdown, the European timber market is reportedly facing a mix of cautious optimism and challenges. Despite no significant growth drivers on the horizon, demand for softwood lumber in Europe was reported as showing tentative signs of improvement, though it remains far from robust. (Global Wood Markets Info, 2024a). Log production in Europe is reportedly declining and structural issues are reported as driving log prices upward, even as sawn timber prices are falling. According to the OECD, there are small signs of recovery in 2025, with a projected 4 percent increase in softwood production in Scandinavia and the DACH region (Germany, Austria and Switzerland). Europe's spruce forests have been severely impacted by bark beetle infestation and projections indicate a reduction of up to 50 percent in production by 2030 (Global Wood Market Info, 2024).

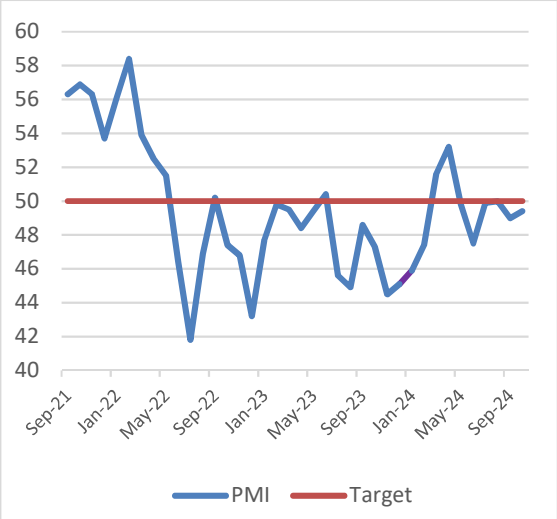
In a recent study, Bozzolan *et al*. (2024) reported significant supply imbalances within Europe's forest-based bioeconomy. Critical mismatches between wood resources and processing capacities across European countries were revealed. Study findings suggested that while Europe's forestry infrastructure is vast, it may not be fully aligned with current and future wood demands. Data from the European Forest Industry Facilities Database (EFIFD) points to substantial processing capacities across Europe, with pulp and paper facilities holding a capacity of 427 million m^3, bioenergy plants at 102 million m^3, and sawmills at 153 million m^3. However, regional assessments in Germany, Norway, and the Czech Republic indicate looming shortfalls in softwood availability which is crucial for sawmill and bioenergy industries. Specifically, the Czech Republic is experiencing a softwood shortage of 3.4 million m m^3, Norway 1.5 million m^3, and Germany 3.8 million m^3. Conversely, Germany shows an oversupply of hardwood, estimated at 3 million m^3, which researchers suggest could support an expansion in hardwood processing operations. The study found that that a fixed radius of 100 km from the facility limited the availability of raw material procurement, particularly for bioenergy and pulp and paper mills, suggesting that these two product chains use a broader procurement basis than sawlog.

7.2 Domestic Construction

The BNP Paribas Real Estate Ireland Construction Index (PMI) is a seasonally-adjusted index which tracks changes in construction activity over time. Index readings above 50 signal increased growth in Ireland (Figure 9, base line in red).

The BNP Paribas Real Estate Construction PMI showed a reading of 53.2 in April from 51.6 in March 2024, which was the highest reading since March 2022, reportedly boosted by new business. It marked the second straight month of expansion in construction output, driven by housing and commercial projects (Figure 9).

Figure 9: BNP Paribas Real Estate Construction PMI Sept 2021 to October 2024



Source: 2024 S&P Global 2024

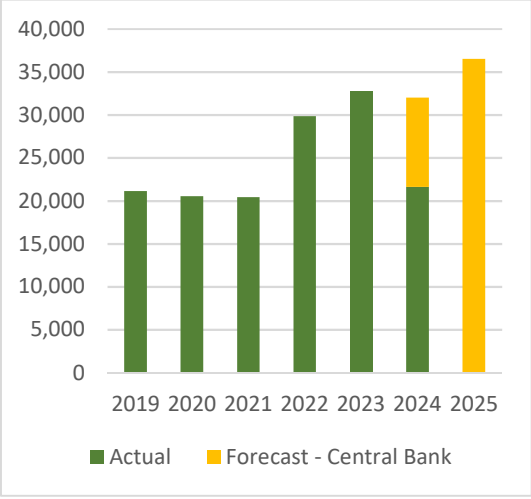
The index increased to 49.4 in October 2024, up from September's three-month low of 49.0. This signalled the fifth contraction in Irish construction activity in the previous six months. Mixed trends in the Irish construction sector were reported (S&P Global, 2024). For example, a sharp and accelerated increase in housing activity was countered by reported reductions elsewhere, resulting in an overall construction output reducing slightly again. The modest fall in total activity reportedly masked a marked divergence in trends across the different types of construction work included in the survey (S&P Global, 2024). Bucking the wider trend, housing activity reportedly increased strongly in

October, with the rate of expansion quickening to the fastest since May 2022. In contrast, commercial activity reportedly decreased solidly and work on civil engineering projects was also down.

BNP Paribas Real Estate Ireland Construction PMI Report (November, 2024) commentary suggested that despite slight reductions in both activity and new orders in October, construction firms were increasingly confident that output will rise over the coming year. Sentiment was reported as "slightly stronger than the series average". Some respondents predicted a renewed increase in new orders, while others highlighted confidence in demand for housing (S&P Global, 2024).

Figure 10 shows the number of dwelling completions in the State since 2018 with forecasts for 2024 and 2025. The CSO uses new connections to the electricity network as the basis for statistics on new dwelling completions, a data source that is collected nationally in a consistent manner for all dwellings. A total of 32,695 dwelling completions was reported in 2023, an increase of 10 percent over 2022 levels and up 54.6 percent from 2019, pre-pandemic levels (CSO, 2024).

Figure 10: Dwelling Completions RoI (actual and forecast) 2019-2024



Source: CSO 2024, Central Bank 2024

There were 8,939 new dwelling completions in quarter 3 (Q3), 2024, a rise of 6.3 percent over the same period last year. Overall, new dwelling completions up to Q3 stood at 21,634; this compares to a completion total of 22,325 for the first three quarters of 2023 (CSO, 2024).

While a surge in completions over the fourth quarter is anticipated, if Q4 completions in 2024 similar to 2023 levels are assumed, housing output is anticipated be similar to last year's figure of almost 32,700. Forecasts by economists from the Central Bank predict that housing output will be 32,000 in 2024 and rising to 36,500 in 2025.

September 2024 data published by the Department of Housing, Local Government and Heritage published on the number of Commencement Notices (residential construction starts) reported 49,007 homes commenced from January-September, 2024. These figures were up by 105 percent from 23,923 for the same period in 2023 (Government of Ireland, 2024a). This reported high level of housing commencements has supported forecasting of higher housing completion levels in 2025, with revised targets of 41,000 homes set by the outgoing government (Government of Ireland 2024b).

According to ERSI analysis, between 35,000 and 53,000 dwellings will be needed per year based on various projected population growth projections (ERSI, 2024). Analysis by economists from the Central Bank of Ireland suggests that around 52,000 new homes could be needed per year out to the middle of the century or a 20,000 unit increase relative to 2023 supply.

7.3 UK Timber Demand

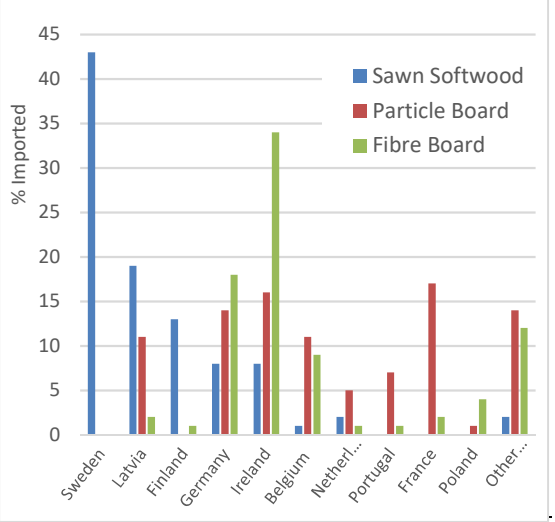
The United Kingdom (UK) is the largest single importer of timber in Europe and remains one of the top three importers globally. Wood imports to the UK in 2023 included an estimated 6.1 million m^3 of sawnwood (a 1 percent decrease from 2022) and 3.1 million m^3 of wood-based panels (a 3 percent decrease). Apparent consumption (timber used as wood and wood products by people and industries) was estimated at 42.4 million m^3 of Wood Raw Material Equivalent (underbark) in 2023, representing a 12 percent decrease from 2022 figures (Forestry Commission, 2024).

7.4 UK Imports

Timber imports to the UK reportedly continued to stabilise during 2024, following very similar patterns to those occurring for the first eight months of 2023. Timber Development UK (TDUK) figures for August 2024, indicated that imports of the main timber and panel products fell below levels reported for August 2023 by almost 4 percent. However, despite this August fall, reported overall import volumes remained just 2.8 percent lower in the first eight months of 2024 compared to the same period in 2023 – with overall deficits remaining similar for September 2024. This is indicative that timber and panel imports may have

largely stabilised over the past 18 months, following a period of high volatility post pandemic. Barring any unexpected changes before December 2024, the expectation is that 2024 import volumes will be broadly in line with those reported the previous year (Global Wood Market Info, 2024a).

Figure 11: 2023 UK Wood Imports Share by Country of Origin



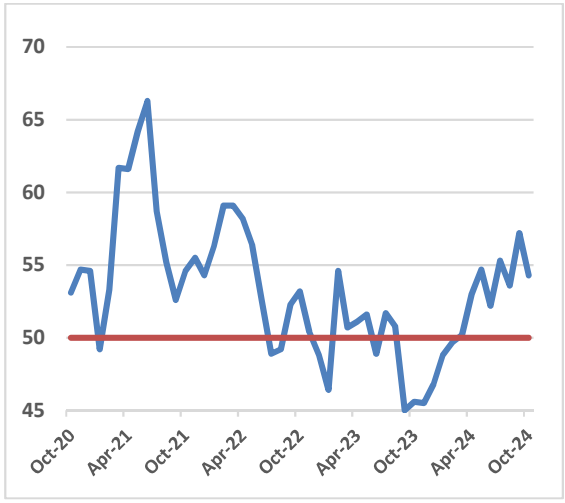
Source: Forestry Commission, 2024

The Forestry Commission trade statistics for 2023 reported that Ireland supplied 8 percent of the UK sawn softwood imports, the same level as in 2022. Sweden, with 43 percent, Latvia, with 19 percent, Finland with 13 percent and Germany with 8 percent provided the majority of sawn softwood imports (Figure 11). Ireland supplied a reported 34 percent of the fibreboard and 16 percent of the particle board imports to the UK in 2023 (Forestry Commission, 2024).

Reduced UK import figures for the past 18 months can be largely attributed to weak construction and manufacturing markets, in addition to low levels of consumer spending and high interest rates. This has reportedly suppressed demand for many wood products in the UK, including timber and panel products (Global Wood Market Info, 2024). The latest Construction Products Association's (CPA) estimates for 2024 indicate private new housing output will be 9 percent lower and repair and maintenance output 4 percent down – both significant sectors for the use of timber as a construction material.

Figure 12 presents the S&P Global/CIPS Construction PMI between October 2021 and October 2024. Readings over 50 indicate growth. The index registered 54.3 in October 2024, down from a reading of 57.2 in September. Significantly, it was above the crucial 50.0 no-change threshold for the eight month in succession. The October reading was also well above the average reported in the first half of 2024 and signalled a solid expansion of total industry activity (S&P Global, 2024).

Figure 12: S&P Global/CIPS UK Construction PMI Oct 2020 to Oct 2024



Source: S&P Global PMI

Timber Development UK, welcomed the UK Autumn Budget, including the reported critical investments made into affordable housing, energy efficiency and planning. These are deemed essential to achieve the UK Governments ambition to increase house building to a total of 370,000 homes per annum (TDUK, 2024).

Commenting on the UK Autumn Budget 2024, the Construction Products Association indicated that there was cause for cautious optimism. This was based on the inclusion of a number of measures related to support for the construction and manufacturing sectors (Noble, 2024). Chief amongst these measures are the promised near-term spending increases including in affordable house-building; continued spending on repair, maintenance and improvement for a select group of hospitals; a wider commitment to increased capital investment including maintenance programmes for the NHS, and schools including an almost 50 percent increase in funding for local roads maintenance; fuel duty relief; an initial £3.4 billion towards heat decarbonisation and household energy efficiency through the Warm Homes Plan over the next three years; incentives for corporate R&D investment and provision for a new Industrial Strategy (Noble, 2024).

The cautious optimise of the UK CPA is, however, also tempered by concerns over the UK

Governments 10-year infrastructure and new housing strategies, details of which will be confirmed in Spring 2025.

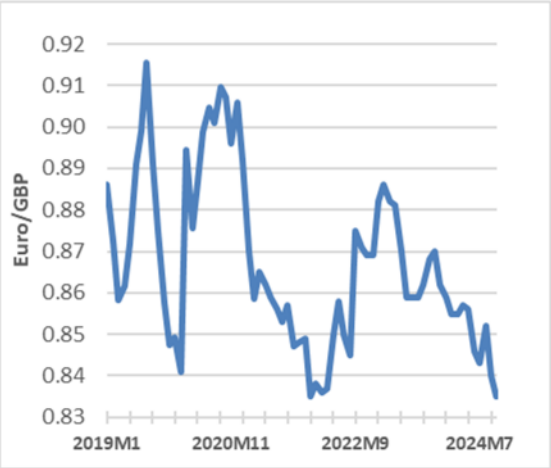
In its 2024 autumn forecasts, the CPA expect construction output to fall by 2.9 percent in 2024. However construction output is forecast to rise by 2.5 percent in 2025 and 3.8 percent in 2026. As of October 2024, the wider UK economy was deemed to be in a stronger position than it was 3-6 months previously and early indicators for the two largest construction sectors, private housing new builds and private housing repair, maintenance and improvement (rm&i) point towards growth in 2025 (CPA, 2024).

Growth has emerged as a key objective of the new Labour government with a manifesto commitment and ambitious target to increase housing output to 1.5 million new homes over the next five years.

8. Exchange Rates

The timber products market in the UK is subject to cyclical price fluctuations, reflecting trends in the UK economy. Issues such as timber supply uncertainly and exchange rate fluctuations also affect margins in a market which is extremely competitive at the best of times. Figure 13 presents the Euro-Sterling (€/UK£) relationship between January 2019 and October 2024.

Figure 13: Euro - Sterling Exchange Rate - Jan 2019 to October 2024



Source: European Central Bank, 2024

The Euro has shown a general trend of downward momentum against Sterling, from 0.858 in February to 0.835 in October 2024. A stronger Sterling can positively impact the competitiveness of Irish timber exports to the UK. The AIB summary of exchange rate forecasts places the Euro-Sterling stabilising at around 0.85 by Q2, 2025.

9. Timber Prices

Private timber prices presented are indicative and can fluctuate according to factors such as region, forest type, harvest type, timber quality, woodlot size and access. The breakout of product assortments at clearfell will also vary significantly based on factors such as forest age, timber quality, the extent and quality of previous management interventions, including forest thinning, and decisions on timber assortments made at time of harvesting. Forest owners can greatly benefit from becoming familiar with the range of markets available and accessing a range of quotations when marketing and selling timber.

Table 3: Indicative Timber Assortment Prices July-September 2024 (delivered to mill gate)

Product	Length (m)	Diameter (cm)	Mill Gate prices Q 3, 2024 (€/tonne) (ex VAT)
Pulp	3		48 - 62
Stake	1.6- 1.9		60 - 65
Pallet	3.1	14+	68 - 77
Pallet	3.7	14+	70 -75
Sawlog	4.9	18 - 20+	89 - 110

Source: Industry sources during 2024

Note: Prices are indicative mill gate (delivered in), expressed as € per tonne, and can vary according to a range of factors

Table 3 presents indicative timber assortment (mill gate) prices for the period July to September 2024. These figures were compiled by Teagasc, based on feedback from industry sources. Mill gate prices are those paid by the buyer for timber delivered to the yard/sawmill. In this scenario, the forest owner pays for the costs of harvesting and haulage to the sawmill or processing point.

Indicative costs for such harvesting and extraction range from €20 to €25 per tonne for thinning and €14 to €16 per tonne for clearfell. Haulage costs (to mill gate) would be in the order of €10 to €16 per tonne, but may vary according to outlined factors.

The Irish Farmers' Association (IFA) Farm Forestry Timber Price survey, comparing timber prices for Q2 for 2023 and 2024, is shown in Table 4. These prices, quoted as roadside (ex. VAT), were sourced from forest owners, forestry companies and sawmills. From April to June 2024 the timber market was reported as remaining stable with no significant

changes across timber products (www.ifa.ie). It should also be noted that the price ranges provided are indicative rather than absolute. Prices are expressed as roadside sales (where the timber is sold to the buyer on the forest road and the harvesting contractor is paid by the forest owner) and in Euro per tonne.

Table 4: IFA Farm Forestry Timber Price Survey - 2023 and 2024

Product	Length (m)	Diameter (cm)	Roadside Price Q2, 2023 (€/tonne) (ex VAT)	Roadside Price Q2, 2024 (€/tonne) (ex VAT)
Pulp	3	< 7	35-45	36-40
Stake	1.6	>8 <15	42-52	42-52
Pallet	2.5	14+	50-57	48-52
	3.1	14+	58-62	65-70
	3.4	14+	63-75	63-75
	3.7	14+	65-80	60-66
Sawlog	4.9	20+	83-96	88-94
	5.5		81-110	94-100
	6.1			100-105
Woodchip				45-48

Source: IFA Farm Forest Timber Price Surveys 2024, Note: Prices are roadside and expressed as € per tonne

Magner (2024b), when comparing standing log prices from the Wood Price Quarterly, reported little movement between the first halves of both 2023 and 2024. He noted how small to medium prices were strong in Q2, 2024 while large sawlog standing prices (€55 - €60 per cubic metre) were expected to increase due to the suspension of Scottish log imports. This was following the discovery of the *Ips cembrae* in traps near the port of Passage West in Co. Cork. This would reportedly result in an estimated additional requirement of between 150,000 and 200,000 m^3 of quality sawlog annually from Irish forest owners which is no longer available from Scotland (Magner 2024b).

Timber prices fluctuate based on the annual supply demand situation. The export-oriented sawmilling sector will continue to compete in a challenging market environment. The forecasted rise in UK construction output, can, if achieved, present opportunities for Irish timber exports. A continuation of the current suspension of timber imports from the Scottish Pest Free Area may also present opportunities for large sawlog through timber mobilisation from Irish forests. These factors, combined with a forecasted increase in domestic construction output, can have a positive effect on timber prices, with modest increases predicted in 2025.

10. Forest Certification

Forest Certification is a mechanism by which the quality of forest management is judged against a set of agreed standards and how forest monitoring, tracing and labelling of timber, wood products and non-timber forest products is carried out (Teagasc, 2021). Forest Certification incorporates two processes:

- Assessment of forests to determine if they are being managed according to agreed standards, known as Forest Management Certification
- Labelling of wood that has been harvested from a well-managed forest, known as Chain of Custody Certification

Meeting certification standards involves a chain of custody traceability and evidence of compliance with environmental and social principles. There are financial costs associated with certification, both in terms of administration and changes in management practices. Without certification forest growers' timber sales options may be limited (Teagasc, 2021).

Voluntary forest certification schemes are run by international non-governmental organisations to promote good forest practice. There are currently two certification schemes available in Ireland - the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC) (DAFM, 2023). Voluntary forest certification links the demand for forest products to environmental and social standards to producers to show that wood or wood products come from certified forests. All major Irish sawmills are certified.

With the timber supply forecast from Irish forests set to increase significantly in future years (see Section 7), the urgent requirement for certification must now be in sharp focus. As the relative overall proportions of available certified timber volume falls, the demand for further certification across private timber supply will continue to increase sharply. Currently 33,064 ha of private forest is certified; all of which is certified by PEFC and 16,345 ha by FSC. There are 16,345 ha certified by both schemes (DAFM, 2024).

A study commissioned by COFORD on private forest certification in Ireland established that the lack of forest management certification was identified by 40 percent of survey respondents (from the processing and wood panel sectors) as an issue for their purchasing of timber from the private sector now and into the future (Forestry Services *et al*, 2022a).

The study described how over 55 percent of total roundwood could potentially be sourced from the private sector over the next 20 years. A 70 percent rule for certification claims applies, which involves a concession to certificate holders, allowing limited mixing of certified and uncertified material). Assuming this 70 percent threshold remains in place, then approximately 24.6 million m^3 will require certification in the long term (Forestry Services *et al*, 2022a).

An estimated 2.9 million m^3 of timber from private forests will need to be certified by 2027. This was estimated in the study to represent approximately 2,000 forest owners. In the absence of increased certification, timber processors would either have to import additional certified timber to meet this 70 percent threshold and/or develop markets for non-certified material. The study suggested that this could result in a decrease in timber price for uncertified timber and a scenario involving the withholding of timber by the private sector in anticipation of developing markets (Forestry Services *et al.,* 2022).

The COFORD-commissioned study concluded that a national group certification scheme is the only sustainable approach that can adequately address identified barriers. (Forestry Services *et al.*, 2022). In this regard, work has been underway since 2023, through a stakeholder working group, to develop membership criteria and rules for an Irish National Group Forest Certification Scheme. The objective is to guarantee enough certified wood to meet the 70 percent threshold required by wood processors and to offer an overall solution to the issue of private wood mobilisation.

A draft Group Management Manual has been prepared by the stakeholder working group to provide information regarding the operating structure, policies and procedures for the group certification scheme. It was developed in compliance with Sustainable Forest Management Standards of both the Forestry Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). A group business plan has also been prepared which seeks to address the need to increase certification by the implementation of The Irish National Group Forest Certification Scheme. Ongoing engagement with DAFM and industry stakeholders is also taking place.

11. Future Opportunities for Timber in Construction

The publication of two reports in 2024 by the Timber in Construction Steering Group provided important recommendations on best practice in raising awareness of the excellent benefits of using timber and the importance of long-term carbon storage in the context of climate change. They also highlight the academic supports needed for timber in construction and the growing need to enhance timber-related content in the core syllabus of relevant third level courses (DAFM, 2024f).

The reports, the first two in a series of reports to be published in the coming months, emphasised the excellent opportunities to increase the use of timber in the built environment. They draw on experiences and potential learnings from other countries that have successfully implemented policies such as “Wood First” strategies and a regulatory environment which supports the wide use of timber. The significant timber resource in Ireland can provide the raw materials to build with lower embodies carbon and such reports can inform a roadmap “to embrace the use of timber at scale” (DAFM, 2024f).

12. Renewable Energy

The Renewable Energy Directive is the legal framework for the development of renewable energy across all sectors of the EU economy. Since the introduction of the Renewable Energy Directive (2009/28/EC), the share of renewable energy sources in EU energy consumption has increased from 12.5% in 2010 to 23% in 2022.

The amending Directive EU/2023/2413 entered into force on 20 November 2023. There will be an 18-month period to transpose most of the directive's provisions into national law, with a shorter deadline specified for some provisions related to permitting forest renewables. It sets an overall renewable energy target of at least 42.5 percent binding at EU level by 2030 - but aiming for 45 percent (European Commission, 2024).

As Ireland reduces its dependence on fossil fuels, bioenergy will also have a significant role to play. Therefore, the sustainability criteria are reinforced by the revised directive. Bioenergy

represents the largest source of renewable energy globally but only a small percentage of Ireland's total energy use. Biomass is an important, sustainable source of renewable energy in the EU, derived from organic material. It has the potential to help to lower the EU's external energy dependence and contribute to reducing greenhouse emissions (European Commission, 2024).

The increased ambition under the Renewable Energy Directive to set a target of over 40 percent of gross final consumption of energy being met from renewable sources by 2030 is of particular interest to Ireland (DAFM, 2022c). DAFM continues to support farmers, foresters and landowners participation in this energy transition through achieving energy use efficiencies, the deployment of renewable energy technology sources for self-consumption and in the provision of biomass feedstocks (DAFM, 2022c).

The Climate Action Plan 2024 identified the utilisation of biomass as a key fuel for decarbonisation. It includes a measure to "expand and enhance supports from the SEAI, IDA and Enterprise Ireland with a focus on achieving energy demand reduction, electrification and biomass adoption in industry.

The Support Scheme for Renewable Heat (SSRH) is a government funded initiative designed to increase the energy generated from renewable sources in the heat sector. The second phase of the SSRH was launched in June 2019. It provides ongoing operational support/tariffs for businesses, farms and other non-domestic heat users for the ongoing use of biomass as well as anaerobic digestion systems. The scheme is designed to support up to 1,300GWh of renewable heat per year (DCCAE, 2019).

Increasing uptake levels of the SSRH can stimulate demand for small logs and wood chip. While there is a growing supply of forest-based biomass forecast to become available over the period to 2040, a key challenge in future years will be to develop and ensure a balanced approach that optimises development of Ireland's wood resource. Hendrick (2024) described how modern bioenergy includes well-specified solid, liquid and gaseous fuels, sustainably sourced from forests and other lands and combusted in efficient and low emission appliances. He contended that the use of solid biomass fits well to the need for well thought-out, effective measures and sustained effort in terms of the climate emergency.

A Renewable Heat Obligation (RHO), designed to support the increased use of renewable energy in the heat sector and contribute to a reduction in emissions in line with Ireland's climate ambitions, is currently being finalised. Addressing the Irish Bioenergy Association 2024 Conference, Ossian Smith TD, Minister of State at the Department of Public Expenditure, National Development Plan Delivery and Reform and at the Department of Environment, Climate and Communications, indicated that the RHO would have a phased introduction over three years and would have an annual rate increase, leading to 10 percent of heat supplied by renewable energy.

As Ireland imports most of its fossil fuels, the heating sector is a significant contributor to Ireland's high energy import dependency. The RHO will also help reduce Ireland's reliance on imported fossil fuels and its energy security due to greater diversification of its energy streams (DECC, 2023a).

13. Forests and Climate Change

Forests provide a range of valuable products and services to society; they contribute to climate change mitigation by sequestering carbon from the atmosphere, locking up in the form of wood while products derived from forests displace fossil fuels as well as building materials such as steel and concrete COFORD (2021). However, forests themselves are also vulnerable to the impacts of climate change and require taking immediate action to prepare for and adjust to both the current effects of climate change and the predicted impacts in the future.

COFORD (2021) recommended a range of measured and evidence-based initiatives, supported by ongoing research, as well as frequent and careful monitoring and review. Its statement on the *Impacts and Adaptation to Climate Change* outlines key recommendations in areas such as, tree species/breeding/genetics, forest design, forest management, forest protection and a focus on leveraging cross-sectoral interdependencies.

13.1 Climate Action Plan 2024

The Climate Action Plan (Government of Ireland 2024) outlines how the reported emissions in the Land Use, Land Use Change and Forestry (LULUCF) sector remain in flux as understanding of activity and emissions from this sector advances. Recent refinements were reported as driven by changes in the emission factors for forestry on peat soils. Further inventory refinements for LULUCF are

scheduled for the coming decade, resulting in further refinements to the 2018 baseline figures.

The Environmental Protection Agency's (EPA) "With Existing Measures (WEM)" scenario projects the LULUCF emissions will rise by 54 percent over the period to 2030. The cyclical nature of forest harvests and legacy issues on Forest Land are reported as a significant contributors. Forest management options on peat soils will need to be carefully considered. Management options will include redesign, rewetting, rewilding and replanting (Government of Ireland 2024). Many of the emissions and mitigation levers for this sector are predominately biological and, therefore, have bio-physical and temporal limits. For example the mitigation potential of afforestation and reforestation is limited in the first 10 years after establishment but increases thereafter and is considered critical post 2030.

To take into account the biophysical limitation of many of the levers, the Climate Action Plan 2024 describes an approach more aligned with how the EU LULUCF Regulation deals with the fluctuations and limits within the LULUCF sector. This new approach is to set the sector on a pathway to achieve its goals allowing for: the setting of activity targets and annual key performance indicators (KPIs), sectoral accountability, and a 2030 emissions reduction target. The pathway will be subject to future reviews considering the ongoing Land Use Review, ongoing inventory refinements, and any future developments in terms of international and national commitments (Government of Ireland, 2024).

The Climate Action Plan 2024 reported the commitment to peatland rehabilitation, enhanced delivery of afforestation, increased use of harvested wood products and the reduction of emissions and increased in sequestration in mineral and organic soils. The forestry related factors targeted at realising this include:

- Delivery of the Ireland's Forest Strategy (2023-2030) and Forestry Programme 2023-2027, which includes a range of forest creation measures, including native woodland expansion and planting of small native trees areas;
- Supporting Coillte's Strategic Vision which aims to capture additional CO_2 in its forests, soils and wood products by 2050. A Strategic Environmental Assessment in relation to Coillte's Strategic Vision is ongoing and this will provide further information in relation to mitigation options;
- Continuing to manage the Coillte estate to increase carbon storage by managing the age profile of our forests to improve carbon efficiency;
- Expanding proactive silvicultural management of our broadleaf estate, and redesigning peatland forests to improve the carbon balance;
- Continuing to support sustainable forest management (SFM) interventions across the entire forestry sector, through the Forestry Programme 2023-2027 and the Coillte Strategic Vision;
- Continued increased use of harvested wood products in the built environment by working to address barriers in construction;
- Continuing to support sustainable production of wood biomass for energy contributing to the reduction of fossil fuels;
- Developing carbon farming as a key enabler to seek opportunities for private finance to deliver key sequestration, emissions reductions in drained organic soils, and other land use measures.

13.2 Carbon Farming

In November 2024, the Council of the European Union gave the final green light to a regulation establishing the first EU-level certification framework for permanent carbon removals, carbon farming and carbon storage in products. This voluntary framework is geared to facilitate and encourage high-quality carbon removal and soil emission reduction activities in the EU, as a complement to sustained emission reductions. By establishing EU quality criteria and laying down monitoring and reporting processes, the Regulation will facilitate investment in innovative carbon removal technologies, as well as sustainable carbon farming solutions. It will help the EU to achieve its goal of climate neutrality by 2050. The regulation covers the following activities across the EU:

- Permanent carbon removals that capture and store atmospheric or biogenic carbon for several centuries (e.g. bioenergy with carbon capture and storage, direct air capture with storage);
- Carbon storage activities that capture and store carbon in long-lasting products for at least 35 years (such as wood-based construction products);
- Carbon farming activities that enhance carbon sequestration and storage in forests and soils, or that reduce greenhouse gas emissions from soils, carried out over a period of at least

five years (e.g. reforestation, restoring peatlands or wetlands, improved fertiliser use)

Based on this regulation, the European Commission (EC) is developing tailored certification methodologies to support activities for permanent storage, carbon farming, and storage in long lasting products. Certification schemes will then certify carbon removal activities through third-party verification (certification bodies). The Certification Bodies will be accredited and controlled by Member States or national accreditation bodies.

An Expert Group on carbon removals has been established to advise the EC on the development of tailored EU certification methodologies. This group facilitates an exchange of experiences and good practices and is comprised of approximately 70 members with diverse expertise, ensuring broad representation from national authorities, public entities, businesses, industry, non-governmental organizations, certification bodies, and research institutions (DAFM. pers. comm.)

With the assistance of the Expert Group, some draft methodologies and technical assessment papers have been proposed by the EC in 2024. This includes a forest related methodology for the *planting of trees on unused or severely degraded land* and a technical assessment of certification methodologies for *long-term temporary biogenic carbon storage in buildings*. The Department of Agriculture, Food and the Marine (DAFM) provide input into this process via communication with the Department of Environment, Climate and Communications (who have representation on the Expert Group).

At national level, DAFM is leading the development of a Carbon Farming Framework to support farmers, landowners, and foresters at the centre of meeting our National Climate objectives. A Flagship Delivery Team was formed to co-ordinate actions going forward in order to establish and implement a national carbon farming framework for Ireland. Work is ongoing in this area with a view to deliver a carbon farming framework for Ireland that aligns with the developments at EU level (DAFM pers. comm.)

14. Forestry within the Bioeconomy

The bioeconomy creates value by utilising the products, services, wastes and side-streams from sectors such as forestry more sustainably. The European bioeconomy is currently worth €2.3 trillion and employs nearly 19 million people (Science Foundation Ireland, 2024). The bioeconomy offers significant opportunities to reduce greenhouse gas emissions by replacing fossil-based resources with biological ones. The substitution of fossil resources with sustainably-produced biomass, including wood, to facilitate decarbonisation and continued economic growth is central to the concept of the bioeconomy.

The Bioeconomy Action Plan 2023-2025 (DECC, 2023b) identifies agriculture, food, forestry and the marine (comprising Pillar 4 of the bioeconomy) as key sectors for biomass and biomaterial generation. It specified actions which will continue to develop bioeconomy demonstration initiatives, expand advisory support services and support the re-circulation and upcycling of biobased materials. The initiatives aim to ensure low impact, diverse and sustainable production, supply, consumption and utilisation of biomass and ecosystem services. These will focus on biobased feedstock and processing, biobased products and their market development, and cross-cutting issues including communication, environmental sustainability, and financial supports.

The Bioeconomy Action Plan described how knowledge and innovation play a crucial role in helping farmers, foresters, fishers, and rural communities meet current and future challenges. Effective Knowledge and Innovation Systems are needed to ensure that bioeconomy knowledge is shared between everyone who uses and produces it, and that people are connected. These actions seek to develop innovation support services focused on the deployment of biobased business models across all sectors.

15. Forest Health

One of the key objectives of the Forestry Inspectorate of the DAFM is to implement the forestry aspects of the EU Plant Health Regulation 2016/2031 which includes monitoring and control programmes for harmful forestry pests. In this regard, with increased levels and new, emerging patterns in trade and greater mobility of larger numbers of people, the risk from the introduction of exotic pests is growing. The Official Controls Regulation 2017/625 also came into effect on that date and impacts, inter alia, on how official import controls, plant passport & ISPM 15 controls and diagnostics are carried out.

The Plant Health and Biosecurity Strategy 2020-2025 was launched in 2019. This Strategy sets out the importance of plant health and biosecurity for

Ireland and the need to minimise the threat posed to plants by the potential introduction and establishment of plant pests and diseases. The strategy sets out key recommendations under 3 broad categories, namely:

- Risk Anticipation / Preparedness
- Risk Surveillance and Management
- Risk Awareness and Communication

The EU Plant Health Regulation 2016/2031 sets out a list of priority pests which require mandatory annual surveys and reporting. EU priority pests are those pests whose potential economic, environmental or social impact is the most severe for the Union territory. The Regulation also sets out an extensive list of Union quarantine pests which must be included in a multiannual survey plan of five to seven years. Ireland also participates in EU co-funded surveys for regulated pests. There were no findings of any EU priority pests in Irish forests in 2023 (DAFM 2024, pers. comm.).

Ireland has Protected Zone status for 14 harmful forestry organisms present in other EU Member States but not present here. To justify Ireland's Protected Zone status, the Forestry Inspectorate conducts national forest surveys and submits reports annually to European Commission. There were no detections of any of these organisms in 2023 (DAFM 2024, pers. comm.).

Increased stakeholder engagement is an important element of the EU Plant Health regime and of the Department's Plant Health and Biosecurity Strategy 2020-2025. In 2024, the Department established a Forest Health Stakeholder group through which forest stakeholders are kept informed on forest health developments. The focus of the group, which has met three times in 2024, has been on bark-beetles.

The purpose of a Plant Health Contingency Plan is to set out the procedures to be followed and the measures to be taken in the event of an outbreak of a regulated pest, which could have the potential to cause significant economic, environmental and social impact. The Department published a generic Plant Health Contingency Plan which sets out the generic approach and action required in the event of pest outbreak.

Additionally, 15 pest specific contingency plans have been produced for the priority pests of relevance and significance for Ireland, together with a priority pest fact sheet which provides information on the pest concerned. Further pest specific contingency plans are being developed for a number of protected zone species (bark beetles).

15.1 Ash Dieback

Ash dieback disease was first found in Ireland in October 2012 although it is now believed to have been present for a number of years prior to that. The disease can now be found on ash trees in every county suggesting rapid spread by way of aerial dispersal of spores. In late 2022, in response to the Report of the Joint Oireachtas Committee on Agriculture and the Marine, on 'Issues Impacting the Forestry Sector in Ireland' (2021), the Department published a report entitled 'Origins of Ash Dieback Disease in Ireland, Lessons Learned and Research Update'. This report detailed the response of the Department to the disease since it was initially detected in 2012, including eradication efforts and the evolving scientific knowledge of the causal organism, the fungus *Hymenoscyphus fraxineus (*formerly known as *Chalara fraxinea)*.

In October 2023, the Department published an independent review of its response to ash dieback disease. The aim of the 'Review of Support for Farmers Impacted by Ash Dieback' was to review the existing and previous supports available to landowners with ash plantations funded under the National Forestry Programme which are now infected with the disease.

In October 2024, in addition to the existing Reconstitution Ash Dieback Scheme, the new Climate Action Performance Payment (CAPP) of €5,000/ha was made available for ash forest owners affected by ash dieback. Current owners of an ash forest established with grant support are eligible to receive the CAPP when their sites have been cleared and they have carried out replanting, in accordance with the terms and conditions of the Reconstitution Ash Dieback Scheme.

15.2 Bark Beetle Threats

The first finding of *Ips typographus*, the eight-tooted spruce bark beetle, in a forest in England was made in late 2018. Since then, the Department of Agriculture, Food and the Marine has maintained close oversight on this developing situation. There have been on-going further findings of the bark beetle in south-eastern England and in 2022 the original demarcated area was extended by the British authorities.

There have been a number of further significant developments in 2024 on *Ips typographus* in England including a significant extension of the Demarcated Area, the first findings of *Ips typographus* on Sitka spruce and planting restrictions for spruce in the Demarcated Area and a developing understanding of the long distance dispersal of the beetle from continental Europe into south east England.

Considering these developments and the potential threat to Sitka spruce in Ireland should a population of *Ips typographus* become established in Great Britain, the Department has maintained close contact with authorities in England, Scotland and Wales (DAFM, pers. comm.).

Log imports from the Pest Free Area (PFA) of western Scotland are a longstanding feature of the Irish wood processing sector. In recent years three of the large sawmills in Ireland have been importing coniferous roundwood from the PFA in Scotland for processing in Ireland. Trade in roundwood from the Scottish Pest Free Area into Ireland has continued at a level of 100,000-200,000 tonnes/year approximately.

The Scottish authorities carry out annual surveys to maintain the pest free status of the current Western Scotland PFA for six harmful bark beetles which are absent in Ireland in order that trade can safely continue. Results from annual surveys year on year have indicated the continuing movement of the bark beetle *Dendroctonous micans* closer to the PFA of Western Scotland to the concern of the Department. The Department engaged intensively in 2023 and early 2024 with authorities and agencies in Scotland on this issue following evidence from surveys in Scotland of the movement of *Dendroctonous micans* towards the border of the PFA with one finding as close as 6km from this border. This engagement has resulted in a reduction in the area from which phytosanitary certificates may be issued by UK Authorities for the export of logs to Ireland in 2024 (DAFM, pers. comm.)

In August 2022, the Scottish forestry authorities informed the Department that the large larch bark beetle *Ips cembrae* had been detected in traps at three locations within the Pest Free Area (PFA) of Scotland. As a result of the findings of *Ips cembrae*, the Scottish Authorities ceased issuing phytosanitary certificates for larch logs for export to Ireland from the PFA.

There were further trap findings of *Ips cembrae* in the PFA in 2023 but no breeding population has been detected. In July 2024 three individuals of *Ips cembrae* were found in an insect trap in Passage West in Cork. Notification of the findings was made immediately to the Scottish Authorities (and the EU) and the trade was paused immediately pending investigations and follow-up actions in Scotland (DAFM 2024, pers. comm.).

In December 2023, the Department announced the first findings in Ireland (and Europe) of *Pseudips mexicanus,* a non-European bark beetle known as the Monterey Pine Engraver. Initially, a total of 93 individuals of *Pseudips mexicanus*, which proved very difficult to identify, were found in traps in a small number of forest locations in a confined area in Co. Clare (DAFM, 2023b).

The Department carried out further surveillance during 2024 both inside and outside the original Demarcated Area. Further findings were made including one finding in a dead tree close to one of the insect traps. The Demarcated Area was extended in August 2024 as a result of further beetle findings outside the original Demarcated Area. Phytosanitary measures to allow for the felling and processing of host material are being developed.

A national survey was also conducted in 2024 with no findings outside the area of first finding. Further surveillance will be carried out in 2025. The Department continues to investigate how these bark beetles entered the country. There is no trade in wood commodities which might act as a pathway from the suspected country of origin (Mexico). At this stage Wood Packaging material (WPM) is the suspected pathway. The Department found no evidence of any breeding insects in trees or of any damage caused to trees (DAFM 2024, pers. comm.).

15.3 ISPM 15

The Forestry Inspectorate is responsible for the implementation of the FAO, IPPC, and International Standard for Phytosanitary Measures, (ISPM) No. 15, Regulation of Wood Packaging Material in International Trade. ISPM No. 15 describes phytosanitary measures to reduce the risk of introduction and/or spread of quarantine pests associated with wood packaging material made of raw wood, in use in international trade.

To November 2024, there were 52 companies registered to operate within the ISPM No. 15

programme in Ireland. Companies in the ISPM No. 15 Programme are subject to Official Controls to ensure compliance with agreed Standard Operating Procedures and that the wood packaging material is fully compliant with the standard.

16. Knowledge Transfer Group Scheme

The Forestry Knowledge Transfer Group (KTG) scheme aims to increase the level of sustainable forest management activity amongst participating forest owners and to raise awareness of the importance of forests for climate change mitigation. The scheme supports those forest owners that require additional knowledge to help them undertake one or more management activities in their forests. KTGs provide the mechanism for gaining this expertise and empower them to manage their own forest over its rotation or through a continuous cover approach. By filling this knowledge gap, a potential barrier to the mobilisation of timber and biomass is also addressed.

In autumn, 2023, a total of 37 groups, including over 700 forest owners, were approved for the latest KTG scheme participation. Since the schemes inception in 2017, DAFM has funded the involvement of over 3,000 forest owner participants. A new round of KTGs is scheduled for late 2024/early 2025.

17. Outlook for 2025 and Beyond

17.1 EU Outlook

The EU Forest Strategy for 2030 is one of the flagship initiatives of the European Green Deal. It also builds on the EU Biodiversity Strategy for 2030. The EU Forest Strategy seeks to contribute to achieving the EU's biodiversity objectives, as well as greenhouse gas emission reduction target of at least 55 percent by 2050. It recognises the central and multifunctional role of forests, and the contribution of foresters and the entire forest-based value chain in achieving a sustainable and climate neutral economy by 2050 and preserving lively and prosperous rural areas (European Commission, 2021).

The EU Forest Strategy seeks to develop the socio-economic functions of forests that can contribute to thriving rural areas and to boost the forest-based bio-economy within sustainability boundaries. It also seeks to protect, restore and enlarge the EU's forests to combat climate change, reverse biodiversity loss and ensure resilient and multifunctional forest ecosystems.

17.2 Food Vision 2030

The Food Vision 2030 Report (Government of Ireland, 2021) sets out a strategy for the Irish agri-food sector to ensure its economic, environmental and social sustainability to 2030. Mission 1 sets out goals to achieve a climate smart, environmentally sustainable agri-food sector. In meeting these needs, the Food Vision Report highlights that the direction should be towards diverse multifunctional forests that strengthen the economic viability of rural communities, the protection of our environment and building resilient forests in the face of climate change.

17.3 Afforestation

The measures included in Ireland's Forest Strategy Implementation Plan (DAFM 2023c) aim to re-engage landowners, including the farming community, in afforestation, through a range of approaches:

- Introduce new sources of income for qualifying applicants to bridge the gap between the last premium payment and the availability of revenue from timber;
- Make the planting of small forests more attractive to farmers;
- Offer higher payments for forests that deliver more environmental benefits;
- Improve awareness amongst the general public regarding the benefits of forestry and make forests more accessible for recreation and amenity uses;
- Achieve enhanced biodiversity;
- Adopt measures to address species diversity;
- Increase the resilience of the national forest estate to the effects of climate change (climate adaptation).

Achieving a sustainable increase in afforestation rates and progress towards planting targets remains the key and overriding challenge within Irish forestry. This is critical not only to Ireland's future wood supply capacity, but also in terms of forests' vital role in climate change mitigation, biodiversity enhancement, rural development and renewable energy provision.

The Afforestation Scheme provides a range of options for landowners that can meet multiple objectives. Feedback from the sector highlights the clear need for a balanced planting programme that

will cater for Ireland's future timber needs as well as delivering environmental and social benefits.

The Native Tree Area (NTA) Scheme facilitates the creation of new small-scale native forests which can deliver meaningful ecosystem services that can include the protection and enhancement of water quality and aquatic ecosystems in suitable locations. These forests can also provide wider biodiversity functions by protecting and expanding existing native forests. Approvals are issuing for the NTA in a matter of weeks in most cases. Since January 2024, DAFM has issued 327 licences under the Native Tree Area Scheme, covering an area of 356 ha (DAFM 2024c).

An area of over 7,300 ha has been licenced for forest creation since the new Forestry Programme commenced in 2023 (DAFM 2024c). A key sectoral challenge is to support decision making on the conversion of land licenced for planting into hectares of new forests while also enhancing the volume of new planting applications. This can be supported through awareness raising of the attractive forestry options, through support in whole farm planning and land use decision making.

The attractive options within the Forestry Programme 2023-2027 will need to be combined with provision of strong support to farmers and landowners in re-engaging with forestry and reinvigorating confidence regarding its many benefits. In this regard, given the potential challenges outlined in section 3, the extent and type of planting take-up in 2025 will be paramount for the forestry sector. A range of supportive actions and a fully co-ordinated approach by all stakeholders is also required to help progress an upward trend in approvals and planting levels.

17.4 Sustainable Forest Management

The Forest Strategy 2023-2030 (DAFM, 2023a) outlines how all forest types can deliver benefits to the economy, environment and society. The choice of management approach will result in trade-offs between the forest types and the range of benefits they can provide. Each will have its advantages and disadvantages depending on the objectives and purpose of the forest. It will mean applying the most appropriate forest management approaches for the objectives set of a forest, whether it be even-aged forests with a commercial focus, closer-to-nature forests, semi-natural forests or agroforestry but within the overall framework of Sustainable Forest Management (DAFM, 2023).

Ireland's Forest Strategy Implementation Plan (DAFM 2023c) aims to support sustainable management through a range of approaches. Intervention 4 will support the development of privately and publicly owned forests. The primary objective is to offer forest owners a range of schemes to manage their forests sustainably and increase the delivery of ecosystem services, biodiversity, regeneration capacity and vitality.

The DAFM Forest Strategy Implementation Plan also contains a proposed Payment for Ecosystem Services (PES) Pilot Premium Structure. This proposed pilot initiative aims to promote the longer-term sustainable management of forests. It proposes that applicants, out of premium, or who never received a grant payment, would be considered for approval to select PES option(s) in accordance with the management practice selected for practices such as native woodland conservation, CCF, seed stand management, environmental enhancement, creation of public access or planting for water protection.

17.5 Mobilising our Timber Resource

There is increasing demand for sustainable wood products to meet the needs of a future circular economy. Ireland's forest sector has significant potential for sustainably increasing supply. Estimates indicate that the annual potential roundwood supply will increase from 4.7 million m^3 in 2021 to 7.1 million m^3 by 2035, with the increase largely driven by the private sector, with softwood timber from conifer species being the main component (DAFM, 2023).

Ongoing sustainable management of forests, including timely thinning operations, where appropriate, will help optimise forest productivity, whilst also facilitating ongoing mobilisation of the timber resource. Intervention 3 of the Forest Strategy Implementation Plan, incorporates 9 measures supporting infrastructure and technology investments. These include a Forest Road Scheme and additional support elements, investment aid for the development of the forest tree nursery sector and support for innovation and development of technology tools via a Forest Technology Challenge Grant.

As more of Ireland's private forest estate approaches maturity, it is also essential that markets are developed for the increased use in hardwood as well as conifer species. This will require increased support for research and

innovation towards developing and/or stimulating new and emerging markets.

Net realisable timber production from private Irish forests is forecast to increase from 2.4 million m^3 in 2024 to over 3.49 million m^3 by the end of the decade (COFORD, 2021). The prediction that, by and large, growth in the sawmill and wood based panel demand can be met on the island of Ireland by 2025 is based on increased State investment in forestry and county roads, as well as continued and sharp focus on the reduction or elimination of other barriers to identified wood mobilisation (CWMFG, 2018). An urgent focus on the rapid expansion of forest certification in the private forest sector has been identified as essential to ensure the sector is well positioned to meet future timber market requirements (Forestry Services *et. al.*, 2022).

Timber harvest and mobilisation from first and subsequent thinnings is likely to continue to be the major component of the wood-based panel (WBP) sector and the growing wood biomass sector. It is essential that appropriate and timely thinning continues to be promoted and facilitated in private forests that are suitable for this important silvicultural practice.

The export-oriented sawmilling sector will continue to compete in a challenging market environment, with EU/UK-related developments likely to have significant impacts post 2024. Engagement with the timber processing sector indicates strong confidence in their ability to process the available timber forecast to come on the market in future years. Sustained progress in the licencing of forest roading and felling activities is also deemed essential to enable sustainable wood mobilisation and supply to domestic and export timber markets.

Engagement with timber buyers also provides insights into the continued demand for timber to meet the ongoing requirements of the processing sector. Competitive timber prices can be paid for well managed forests with good quality timber, adequate road access and felling licences in place, proximity to markets, and economically advantageous plantation size. The ongoing development of forest owner organisations will continue to help facilitate and support additional thinning and harvesting capacity and timber supply.

The cascading principle for the priority uses of wood is a key driver for how we will use wood in the future. This approach is described in the EU Forest Strategy, where it proposes the use of wood according to several ordered priorities as follows:

1. Wood-based products;
2. Extending their service life;
3. Re-use;
4. Recycling;
5. Bioenergy
6. Disposal.

This approach will help to ensure that wood is used to substitute more carbon-intensive products as much as possible and deliver the highest value for carbon storage (DAFM, 2023a).

17.6 Forest Health

With increasing levels of new and emerging trade and greater mobility of larger numbers of people, the risk from the introduction of exotic pests and diseases is ever present. Changes in climatic conditions can exacerbate the risks from pests and diseases as fluctuations in temperature, rainfall and extreme weather events can potentially affect the patterns of migration and impacts of pests. Forests can also be vulnerable to damage from abiotic factors such as fire and wind.

There is an ongoing need for vigilance and appropriate forest health monitoring in light of such significant risks. This should be combined with appropriate and flexible responses and awareness of contingency planning as circumstances invariably change. This will be critical in terms of helping maintain the integrity of our forest health status.

17.7 Promoting Timber in Construction

Ireland's Forest Strategy 2023 -2030 placed a strong emphasis on the use of timber and its important role in reducing the amounts of carbon-intensive materials used in construction. Not only is wood a sustainable, home-grown product, but it can also replace steel and concrete, reducing the carbon footprint of our buildings. Timber used in construction is an excellent way of storing and locking up carbon, and has a positive impact on our climate (DAFM, 2023).

The publication of the two reports by the Timber in Construction Working Group is an important milestone in raising awareness of the benefits of using timber and the importance of long-term carbon storage in the context of climate change. The reports build an understanding of how other countries have incorporated policies that support timber construction while ensuring the highest standards of building safety in the Irish context (DAFM, 2024g).

17.8 UK Markets

With our contiguity to the UK, Ireland's forest sector continues to be well positioned to capitalise on existing and future timber market opportunities. In 2023, overall wood imports into the UK included 6.2 million m^3 of sawnwood and 3.1 million m^3 of wood based panels (Forestry Commission, 2024). Maintaining a flexible, responsive and market-focused approach is central to guiding the industry through market challenges that can arise. There is also a positivity from timber processors that such challenges can be met if appropriate levels of timber mobilisation are achieved.

17.9 Forest Investment Scenarios

There is continued evolution within the environment for trading of semi-mature forest properties and their related investment packages. Such packages may include proposals on the forward selling of timber harvest rights. This relatively new development in the private forest sector may involve a range of investment scenarios and options for private forest owners.

A robust analysis of such investment scenarios from economic, legal and taxation perspectives is a recommended and prudent approach in developing insights into the merits of this expanding forest investment sector. It is also critical in terms of helping ensure that the considerable value underpinning productive forests can be fully realised by owners. Semi-mature plantations, in appropriate cases, may provide options to address landowners concerns over the perceived long production cycles and reduced asset liquidity associated with forestry.

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Farm level Sustainability
Environmental Dimension 2024 Review

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1. Introduction

As shown in Figure 1 the sustainability of a farm is based on the intersection between the economic, environmental, social and innovation dimensions of that farm. The sustainability of a farm is dependent on the strength of these dimensions. Failure on a single dimension can threaten the long term sustainability of a farm.

Figure 1: Dimensions of Sustainability

Other chapters have focused on the economic outlook for different farm types. This chapter looks at the sustainability of farms on the environmental dimension with specific focus on gaseous emissions. This covers the greenhouse gas (GHG) and ammonia (NH_3) emissions emitted at farm level.

Farm level emissions are estimated based on activity data multiplied by an emission factor. The 2023 Teagasc Sustainability report (Buckley & Donnellan, 2024) sets this out in greater detail and reports results for 2023, as well as a number of preceding years. This sustainability analysis uses activity data from the Teagasc National Farm Survey (NFS) and emission factors from national inventory accounting methods for GHG (Duffy et al., 2024) and ammonia (Hyde et al., 2024). With the exception of some emission factors that relate to the dry matter intake of animals, generally speaking, emission factors tend to remain relatively static in the short to medium run until new scientific evidence emerges. Hence, GHG and NH_3 emission projections for 2024 in this chapter are based mainly on changes in farm activity levels. Farm based activity levels in 2024 are estimated with reference to the Teagasc NFS using 2023 as the base year.

The Teagasc NFS which is part of the EU Farm Accountancy Data Network (FADN) contains a sample of 808 farms from across Ireland in 2023. The survey collects data on an annual basis on livestock numbers, cropping area, inputs and outputs, assets and liabilities, direct payments under the CAP and family farm income. This dataset is primarily collected to report on farm incomes to the EU Commission (as per EU Member State requirements) but has been expanded in Ireland in recent times to report on the environmental sustainability of Irish farms.

The Teagasc NFS is based on a nationally representative random sample which is selected in conjunction with the Central Statistics Office (CSO). Each farm is assigned a weighting factor so that the results of the survey are representative of the national population of farms with a standard output above €8,000 (a total of 84,723 farms are represented in this study for 2023). Within the Teagasc NFS, farms are classified into major farming systems according to the standardised EU typology as set down by the EU Commission. Projections for GHG and ammonia emissions for the four main land based farm systems in Ireland, namely, dairy, cattle, tillage and sheep are reported here.

2. Methodological approach to estimating 2024 farm level gaseous emissions

From an activity level perspective, items that can significantly influence emissions and where data is available for 2024 are animal numbers, and type and quantity of chemical N fertiliser & lime applied to land.

Animal Number Projections for 2024: The CSO (CSO, 2024) publish bovine animal numbers held on

farms each June. Results from the CSO June 2024 survey were compared with those from 2023 and this showed a decrease in overall cattle numbers of -2.2% as seen by Table 1. However, this decrease was not uniform across the different categories of bovines. The number of Bulls (+5.6%) and Cattle 2 years and over (+2.6%) increased, while the number of Dairy Cows (-1.4%), Other Cows (-5.4%), Cattle 1-2 years (-3.4%) and Cattle under 1 year (-2.3%) all declined.

Table 1: Changes in cattle numbers 2024 vs 2023

Animal inventories	2024 vs 2023
Total cattle	-2.2%
Dairy cows	-1.4%
Other cows	-5.4%
Bulls	+5.6%
Cattle: 2 years and over	+2.6%
Cattle: 1-2 years	-3.4%
Cattle: under 1 year	-2.3%

Source: CSO (2024)

For the ovine numbers, overall numbers are shown to have decreased significantly (-8.8%) between 2023 and 2024. All categories of sheep numbers declined with ewe numbers declining the most in percentage terms (-12%) as seen in Table 2.

Table 2: Changes in sheep numbers 2024 vs 2023

Animal inventories	2024 vs 2023
Total sheep	-8.8%
Ewes	-12.0%
Rams	-10.9%
Other sheep	-5.1%

Source: CSO (2024)

These national level changes in livestock inventories (by category) are applied proportionately across farms with dairy, cattle and sheep animals within the 2023 base year to yield a 2024 estimate of farm level livestock numbers. Land area farmed is assumed to remain static.

Chemical N Projections for 2024: The second major element that could likely impact farm level emissions is the volume and type of chemical fertiliser applied on farms. Different emission factors are associated with different fertiliser types (e.g. CAN versus Urea) and a higher level of application of a given fertiliser will lead to higher levels of overall emissions. Table 3 is constructed from fertiliser sales data (DAFM, 2024a). Sales data for fertiliser follows a September to October sales year. However, data for the full sales year is not yet available so estimates are based on sales data between September 2023 and June 2024. This indicates that total (elemental) N increased slightly (3.9%) compared to the previous year for this time period. NPK compounds were the most common fertilisers purchased in volume terms and this was seen to decline by 5.1% year on year. Notably, sales of protected urea increased by 58.3%. Conversely sales of straight urea went in the opposite direction (-17.3%). Protected urea is associated with lower GHG emissions (vs. CAN) and lower ammonia emissions (vs. straight urea). Changes in chemical N fertiliser at farm level are assumed to be reflective of the national level trends as outlined in Table 3.

Table 3: Total tonnes of Chemical N sold 2023-2024 up to Quarter 3 2024

	2023*	2024*	% change
Straight CAN	58,128	59,572	2.5%
Straight Urea	33,332	27,582	-17.3%
Protected Urea	25,766	40,798	58.3%
NK Compounds	1,412	3,820	170.5%
NP Compounds	983	1,089	10.8%
NPK Compounds	103,299	98,002	-5.1%
Other N Fertilisers	4,478	5,456	21.8%
Total	227,398	236,319	3.9%

*September to October sales year, data is from October 2023 to June 2024 (Source: DAFM 2024a)

Lime Projections for 2024: Data from lime sales is only available for the first 5 months of 2024 (January to May). Based on this available data lime sales declined significantly (56%) between 2023 and 2024 (DAFM, 2024b)

3. Results

It is important to appreciate that some factors influencing the various indicators presented here are partially within the control of an individual farmer (e.g. input use efficiency, technology adoption), while others factors are outside of an individual farmer's control (e.g. farm input & output prices, weather conditions, soil quality). Farming is influenced by weather conditions, which vary from year to year, and which therefore may affect the level of production or the level of input utilisation in a given year. Hence, drawing inference based on one year movements must be taken with caution.

3.1 GHG Emissions

Agriculture is the largest contributor to Irish greenhouse gas emissions by sector, with 37.8% of the national emissions total in 2023 (Environmental Protection Agency, 2024). The agricultural sector is required to reduce its emissions in the context of Ireland's commitment to reduce national GHG emissions. The Climate Action and Low Carbon

Development (Amendment) Act 2021 (Government of Ireland, 2021) sets down a greenhouse gas emissions reduction target of 51% by 2030 for the State and towards climate neutrality by 2050. Under the Climate Action Plan 2021, agriculture has a sectoral target to reduce emissions by 25% by 2030 (Government of Ireland, 2022) from a 2018 base.

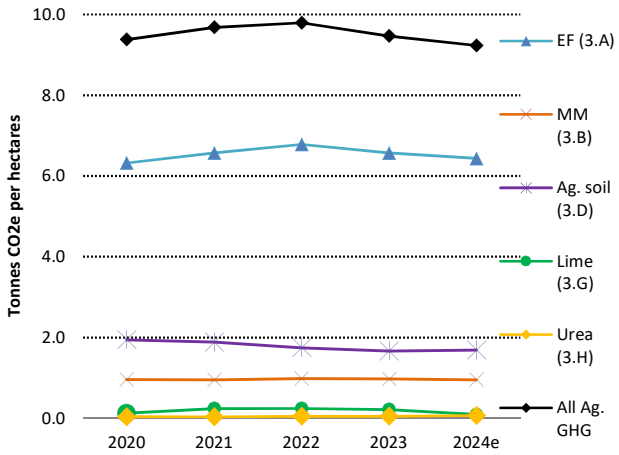
The GHG emissions projections in this analysis are estimated following the IPCC methodology accounting conventions and Irish emission factors as employed in the 2023 National Inventory Report for Ireland (Duffy et al., 2024). The main sources of agricultural GHG emissions are methane (CH_4) emissions from enteric fermentation (EF) by ruminant livestock, CH_4 and nitrous oxide (N_2O) emissions from manure management (MM) (production and storage of livestock manures) and N_2O emissions resulting from the application of manures and chemical fertilisers to agricultural soils. Additionally, direct CO_2 emissions associated with lime and urea application are also included in this analysis but each represent more minor elements. For reporting purposes, all non-carbon dioxide (CO_2) emissions are converted to CO_2 equivalents (CO_2e) using appropriate IPCC based global warming potentials (GWP100). The relevant coefficients for CH_4 and N_2O are 28 and 265 respectively.

3.1.1 GHG on Dairy Farms

Figure 2 presents per hectare results for dairy farms by emission category between 2020 and 2024e. The 2024e result is an estimate for emissions in 2024 based on the projected changes in activity levels as set out in section 2.

Projections for 2024 indicate a slight decline in GHG emissions on dairy farms compared to 2023 (-2.5%). Although emissions under the Agricultural Soils (3.D) and Urea (3.H) increased slightly due to higher level of fertiliser applied this was more than offset by the reduction in animal numbers (Category 3.A & 3.B) and liming (Category 3.G).

Figure 2: Dairy Farm Agricultural based GHG Emissions per hectare by emission category - 2020-2024e

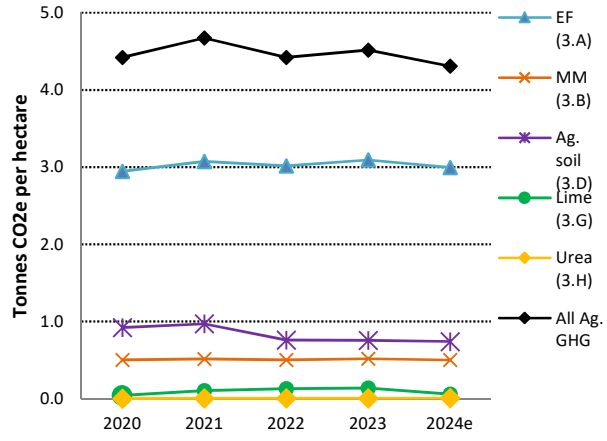


Source: Teagasc Sustainability Report and Author's estimate

3.1.2 GHG on Cattle Farms

Figure 3 presents per hectare GHG emissions results by category on cattle farms. Projections indicate a decline in GHG emissions per hectare in 2024 compared to 2023 (-4.5%) The trend was similar to dairying, with increases associated with increased chemical fertilisers (3.D & 3.H) being offset by a reduction in livestock numbers and liming (Category 3.A, 3.B & 3.H).

Figure 3: Cattle Farm Agricultural based GHG Emissions by emission category - 2020-2024e



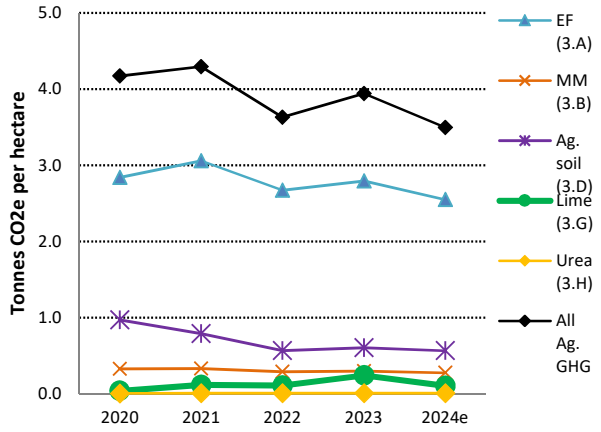
Source: Teagasc Sustainability Report and Author's estimate

3.1.3 GHG on Sheep Farms

Figure 4 reports GHG per hectare results by emissions category on sheep farms. GHG emissions on sheep farms are projected to decline in 2024 compared to 2023 (-11.3%). This decrease is principally driven by the significant reduction in

overall sheep numbers from the provisional June livestock survey (CSO, 2024).

Figure 4: Sheep Farm GHG Emissions by emission category - 2020-2024e

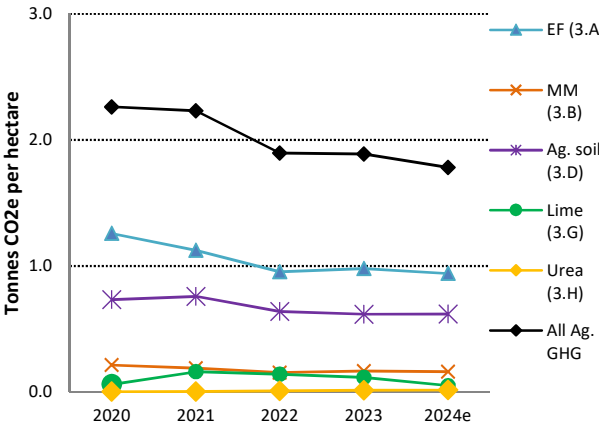


Source: Teagasc Sustainability Report and Author's estimate

3.1.4 GHG on Tillage Farms

GHG per hectare results by emission category on tillage farms are presented in Figure 5. Similar to livestock farms, emissions on tillage farms are expected to decline in 2024 versus 2023 (-5.7%). The drivers are similar to what is projected for other systems, namely a reduction in livestock numbers and liming on tillage farms.

Figure 5: Tillage Farm GHG Emissions by emission category - 2020-2024e

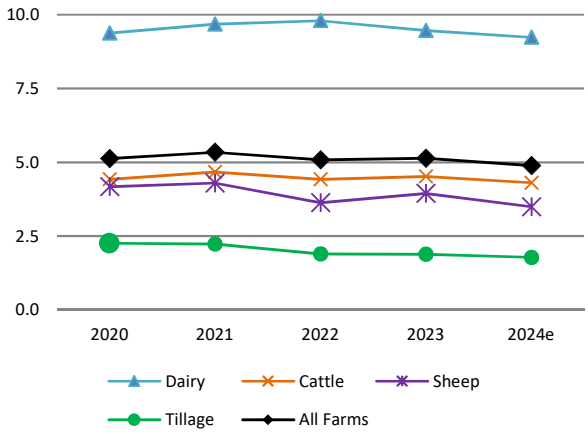


Source: Teagasc Sustainability Report and Author's estimate

3.1.5 GHG on All Farms

Figure 6 illustrates trends in average GHG emission per hectare across the different farm types. Declining GHG emissions are projected for 2024 across all farm systems (-4.8%) mainly driven by the reduction in livestock numbers and liming, which more than offset some increases associated with higher chemical N applications across most farm systems.

Figure 6: Total GHG Emissions (CO2e) per hectare by farm type - 2020-2024e



Source: Teagasc Sustainability Report and Author's estimate

3.2 Ammonia Emissions

Ammonia (NH_3) is an air pollutant contributing to eutrophication and acidification of terrestrial and aquatic ecosystems. It is also an indirect source of the potent greenhouse gas nitrous oxide (Sutton et al., 1992). The EU and its Member States are parties to the Convention on Long-Range Transboundary Air Pollution, which regulates trans-boundary air pollutants, including ammonia (NH_3). Within the EU, NH_3 emissions are regulated through the National Emissions Ceiling (NEC) Directive (EU, Commission 2016). Over 99.4% of Ireland's NH_3 emissions originate within agriculture, principally from animal waste and the application of synthetic fertilisers (Hyde et al., 2024). The fact that ammonia emissions in Ireland come almost exclusively from agriculture means that any future national ammonia reduction target for Ireland *de facto* represent a reduction target to be achieved by the agricultural sector.

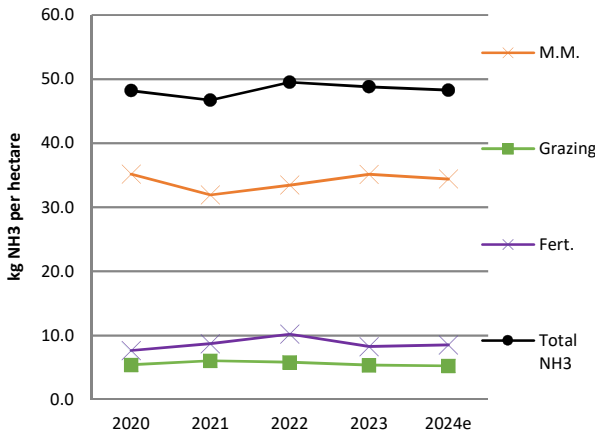
The national inventory accounting methodology as applied by the Environmental Protection Agency (Hyde et al., 2024) in conjunction with the projected activity data for NFS farms in 2024 (as set out in section 2) is used for estimating NH_3 emission indicators across different farm types for 2024.

3.1.6 NH_3 on Dairy Farms

Figure 7 outlines kg of NH_3 emission per hectare on dairy farms. The manure management (MM) category linked to manure generated from animals during the winter housing period is the largest category of NH_3 emissions. This covers the housing,

storage and land spreading phases of manure management and is the major NH_3 emissions category on livestock orientated farms (accounting for over 70% of NH_3 emissions on dairy farms), with emissions associated with grazing livestock (circa 11%) and with chemical fertiliser application (18% on dairy farms) making up the remaining emission categories. Per hectare NH_3 emissions on dairy farms are projected to decline slightly (-1.1%) in 2024 compared to 2023. This is mainly driven by a reduction in animal numbers on dairy farms in 2024.

Figure 7: Dairy Farm NH_3 emissions by category - 2020-2024e

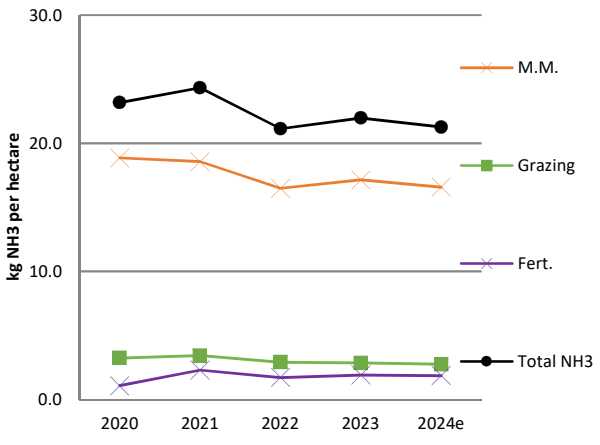


Source: Teagasc Sustainability Report and Author's estimate

3.1.7 NH_3 on Cattle Farms

NH_3 emissions per hectare on cattle farms are outlined in Figure 8. The NH_3 emissions on cattle farms are projected to decline slightly (-3.2%) in 2024 compared to 2023. This projected decline was again mainly driven by lower animal numbers on cattle farms.

Figure 8: Cattle Farm NH_3 emissions (kg NH3 ha^{-1}) by category – 2020-2024e

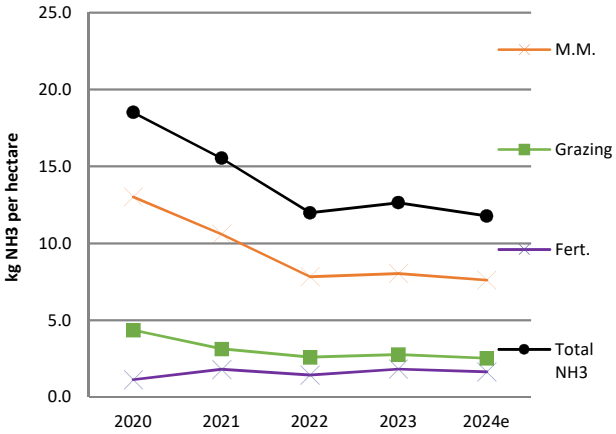


Source: Teagasc Sustainability Report and Author's estimate

3.1.8 NH_3 on Sheep Farms

Figure 9 reports kg of NH_3 emission per hectare on sheep farms. Ammonia emissions per hectare on sheep farms are projected to decline (-6.8%) in 2024 compared to 2023. Similar to the results for the cattle farms this projected decline was driven by lower animal numbers on sheep farms.

Figure 9: Sheep Farm NH_3 emissions by category - 2020-2024e

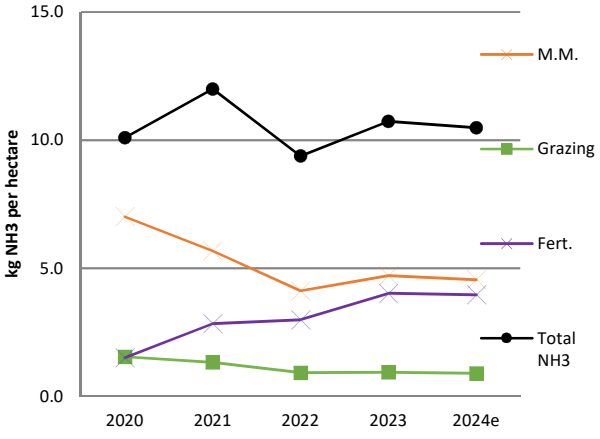


Source: Teagasc Sustainability Report and Author's estimate

3.1.9 NH_3 on Tillage Farms

NH_3 emissions on tillage farms are reported in Figure 10. Although these farms are classified as specialist tillage farms, on average, they have a significant cattle or sheep enterprises (or both) and this is reflected in their emission profile in Figure 10. Ammonia emissions per hectare on tillage farms are also projected to decline slightly (-2.3%) on foot of lower animal numbers in 2024 vs 2023.

Figure 10: Tillage Farm NH_3 emissions by category average - 2020-2024e

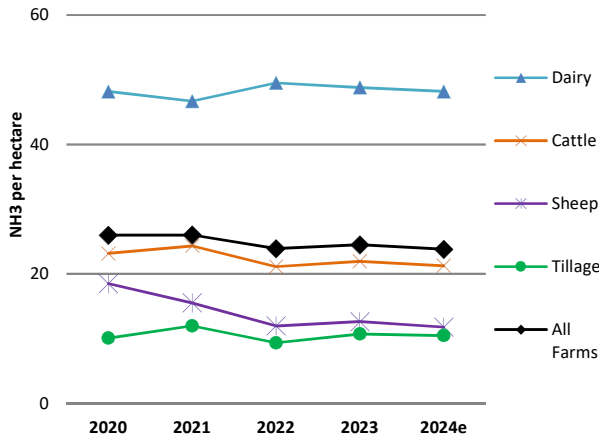


Source: Teagasc Sustainability Report and Author's estimate

3.1.10 NH_3 on All Farms

Figure 11 illustrates trends in total NH_3 per hectare across the different farm types. All farm systems are projected to show a decline in ammonia emissions in 2024 compared to 2023 (-2.8% on average). This reduction is estimated to be mainly driven by lower animal numbers across these farm systems on average.

Figure 11: Total NH_3 Emissions (kg per hectare) by farm type - 2020-2024e



Source: Teagasc Sustainability Report and Author's estimate

4. Summary Conclusions

- GHG and NH_3 emission projections for 2024 are based on changes in farm activity levels around livestock numbers, chemical fertilisers and lime use.
- Based on the CSO June livestock survey, overall cattle numbers are projected to decline by 2.2%. However, there were differences across animal categories with Bulls (+5.6%) and Cattle 2 years and over (+2.6%) numbers increasing while Dairy Cows (-1.4%), Other Cows (-5.4%), Cattle 1-2 years (-3.4%) and Cattle under 1 year (-2.3%) numbers all declining.
- Overall, sheep numbers are shown to have decreased significantly (-8.8%) between 2023 and 2024. Numbers across all categories of sheep declined, with ewe number declining the most in percentage terms (-12%).
- Chemical fertiliser is projected to increase slightly by 3.9% between 2023 and 2024. Sales of NPK and straight urea fell by 5.1% and 17.3% respectively. While all other categories indicated increased sales, most notably protected urea by 58.3%.
- Based on the first 5 months of 2024, lime sales are projected to decrease by circa 56% versus 2023.
- Projections for per hectare GHG emissions for 2024 indicate a decline across Dairy (-2.5%), Cattle (-4.5%), Sheep (-11.3%) and Tillage Farms (-5.7%). Primarily driven by a reduction in animal inventories and liming rates. This more than offset a slight increase in chemical fertiliser based emissions.
- This trend was repeated for ammonia based emissions with year-on-year per hectare declines projected across Dairy (-1.1%), Cattle (-3.2%), Sheep (-6.8%) and Tillage Farms (-2.3%).

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NOTES

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