REVIEW OF THE AGRI-FOOD INDUSTRY IN 2020

THE dePAOR CONSULTANCY

Introduction

The land area of the Republic of Ireland (ROI) is 6.9 million hectares (ha), of which 4.4 million ha is used for agriculture and a further 0.73 million ha for forestry. Of the agricultural area, 80% is devoted to pasture, hay and grass silage (3.6 million ha), 12% to rough grazing and 8% to crops (including cereals, fruit and horticulture production). The Irish agri-food sector supports in excess of 250,000 jobs or one job out of every eight in the Irish economy (source: CSO), accounting for over €14.5 billion of exports and, perhaps more importantly, €16 billion in Irish economy expenditure (Department Enterprise, Trade, Employment, annual survey of Irish economy expenditure).

The agri-food sector is Ireland's most important indigenous industry, playing a vital role in Ireland's economy. The sector directly employed over 164,400 people or 7.1% of total employment in 2019. Some 137,500 farms producing over €8 billion in output, over 770,000 ha of forest, and over 2,000 fishing vessels and aquaculture sites producing fish with a value of €770 million underpin the sector. Total expenditure by Department of Agriculture, Food and the Marine (DAFM) was €2.89 billion in 2019. Payments to farmers totaled over €2 billion including the Single Farm Payment, Rural Development and Forestry Payments.

The number of farms and the average size remained relatively stable between 2013 and 2016. According to the September 2020 DAFM fact sheet, 1,331 farms were offered for sale in 2019, covering over 61,206 acres of land, with the average land price in 2019 estimated to be €8,971/acre. Not surprisingly, most of this land was purchased by dairy farmers.

New lending to the primary agriculture industries in the year to March 2020 was €749 million, down about 10% from a year earlier. This may be due to some uncertainty regarding investments in the context of Brexit and the impact of COVID-19 restrictions imposed in mid-March.

Almost two-thirds of farms have no business-related debt, although this varies considerably by enterprise type. Six out of 10 dairy farms had borrowings in 2019 compared to three out of 10 on sheep, cattle and tillage farms. The average debt on dairy farms was over €110,000 compared to close to €30,000 for cattle and sheep farms.

The age profile of farmers continues to rise and only 7,400 farmers are under 35 years of age while 41,200 are over 65. This obviously impacts on farm health and safety as older farmers are in a higher risk category. On a more positive note, there are now more than 3,000 registered farm partnerships with the DAFM and 343 new partnerships were registered as of May 2020 in advance of the Basic Payment Scheme deadline.

2020 has been a very stressful year for agribusiness and food producers due to COVID-19 and ongoing concerns re: a no-deal Brexit. Thankfully, 2020 was another good year for agri-food exports with overall sales value only 2% down on the previous year. Ireland now exports agri-food and horticultural food produce to 180 countries.

Increases were recorded in the value of Irish dairy, pigmeat and sheep meat exports, along with very significant increases in the value of exports to Africa and the Middle East. Bord Bia says that some sectors were severely affected by COVID-19. Food and drink exports overall declined by just 2%, but exports of alcohol, seafood and prepared consumer food products all had significant falls in value.

Hardest hit was the alcohol trade, with exports down 19%, but the sector is still valued at €1.3bn.Whiskey, cream liqueurs, such as Baileys, and beer accounted for most of the decline. This is not surprising given the closure of vast parts of the hospitality and food service trade in Britain and across the world.

Seafood exports were worth €443m in 2020, a 10% decline. Exports of prepared consumer foods were down 4%, but the sector is still worth €2.5bn. It includes meats and other ingredients for convenience foods, confectionery, non-alcoholic beverages and prepared foods and meals. COVID-19 restrictions, necessitating the closure of workplaces and catering outlets, were responsible for the decline.

Another Great Year for Dairy Exports

The dairy product category continues to be the star export performer, with export values actually up 3% last year and the sector is now worth €5.2 billion to the economy. Butter exports were worth €961.4 million while cheese exports were worth €961.3 million. This growth was achieved despite a decline in commodity prices, including in butter.

Skimmed milk powder prices and demand were strong globally throughout 2020, delivering value growth on the same export volume as 2019, while specialised nutritional powders also had a positive year. Almost half of our dairy exports are now outside of Britain and the EU.

The meat and livestock sector had another good performance in 2020, with a 2% increase in total value to €3.4 billion. Sheep meat export value increased by 12% to €356 million in 2020, due to tighter supplies globally and less sheep meat moving from Britain to the EU 27.

Primary pigmeat exports increased by 14% to €586 million in 2020. Of all Irish primary pigmeat exports, 41% are now destined for Asia, with China accounting for the majority. Increases in the value of pigmeat exports to Japan and Vietnam occurred also.

Horticulture and cereals exports increased by 8% to €221 million in 2020, with Britain being the core market. The value of mushroom exports rose by 14% to €115 million. However, poultry exports declined by 2% in value in 2020 to €152 million, having been notably affected by the pandemic.

Prospects for the New Year are much better now that Covid vaccines are available and a reasonable Brexit deal has been agreed. Hopefully, by mid-year a successful EU and worldwide vaccination programme will prevent any further spread of COVID-19 and any temporary bureaucracy and logistics issues with Brexit will be a distant memory.

While COVID-19 did initially impact on livestock sales in Ireland fortunately the increasing availability of broadband meant that sales were able to continue online in most cases. Online livestock sales have taken off and many farmers can now deliver their livestock to a local mart and watch the sale at home on their laptop. Other farmers and buyers from near and far can bid online without having to attend the sale in person. However, live cattle exports were impacted by COVID-19 restrictions and fell by 10% or 30,043.

The food processing industry coped well with COVID-19 by improving health and safety procedures although the meat industry did struggle for a period. According to Enterprise Ireland, only 1,000 jobs were lost due to COVID-19 and the uncertainty arising from Brexit. Courier services became quicker and more competitive so online sales continued to increase during lockdown and afterwards.

Use of New Technology Soars During Covid

Two out of five people say they began shopping online for the first time at the start of the pandemic. Over half of consumers are increasingly shopping online due to COVID-19, according to a survey of over 1,000 people, carried out by Virgin Media. According to Google research during the early stages of the pandemic, search interest in online shopping and how to buy online doubled worldwide.

In a trading update for the quarter ended May 30, 2020, Tesco said online sales in the Republic were up 50.9 per cent, while growth in Irish convenience stores amounted to 11.8%.

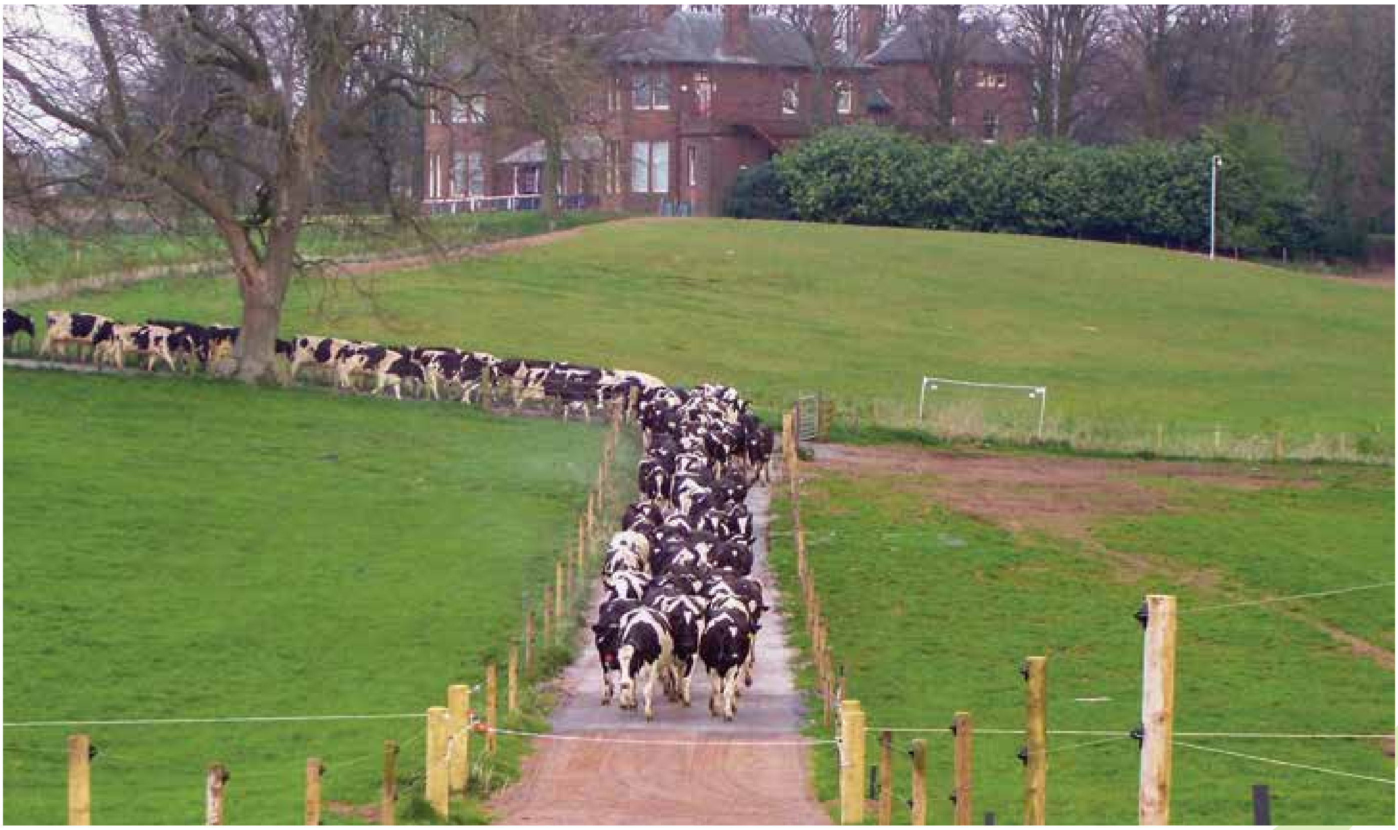
While agri shows, farm seminars, open days and sales calls all had to be cancelled for most of the year, new technology came to the rescue and was widely embraced. Farm discussion groups made good use of Whats App. Indeed, Teagasc have over 40 Grass 10 discussion groups and 99% of participants would recommend it to other farmers.

Attendance at webinars soared, as these are a particularly cost-and time-effective way to communicate with farmers. The Teagasc Beef Edge podcast attracted an audience of over 25,000 farmers, while over 3,500 Teagasc clients are now using the Pasture Base Ireland grassland and management tool. For example, Full House Events, part of the IFP Media Group, organised 23 successful webinars during 2020. A series of 33 webinars, incorporating a series of short videos and Q & A sessions with Teagasc and CellCheck TWG experts, were delivered by Animal Health Ireland and Teagasc to dairy discussion groups focused on getting the best results from drying off.

Sales executives discovered that farmers were quite happy to discuss business on Zoom and most agribusiness meetings moved online. Open days also became virtual farm tours and a small number of agri shows also successfully moved online. Many farmers and SMEs also moved their sales of food and agri inputs online with great success. As we predicted last May, farm machinery sales impacted by COVID-19 closures of retail outlets also recovered later in the year. Indeed, the year-end sales as measured by total tractor horsepower (hp) sold was almost identical to 2019. The trend to high hp continues.

Year	New tractors	Used tractors
2019	2,157	3,083
2020	2,168	3,060

According to the Farm Tractor and Machinery Trade Association (FTMTA), the top three brands for 2019 were John Deere (21%), Massey Ferguson (20%), and New Holland (17%), accounting for 58% of total sales.



Meanwhile, 88% of all tractors registered during 2020 had over 100hp, 56% had over 120hp and 29% had over 150hp. The four counties with the highest levels of registrations for new tractors are Cork, Tipperary, Wexford and Meath.

The number of wheel loaders registered during 2020 increased by 20 units to 135. However, the number of telehandlers registered during 2020 fell from 476 in 2019 to 389, a drop of 18%. The impact of COVID-19 earlier in 2020 also hit machinery sales to the construction sector.

Obviously, all these tractors are imported. However, it's not all one-way traffic as we export around €450m pa of agri tech equipment, according to Enterprise Ireland (EU). In addition, our agri machinery exports reach over €100m pa.

IFAC *Food and Agribusiness Report*

The third annual *Food and Agribusiness Report* published by IFAC last September indicated that optimism in the sector had fallen to 55%, compared to 74% last year. One third of owners of Irish food and agribusiness small- and medium-sized enterprises would consider selling their business, compared to only 20% in 2019. The information from IFAC, Ireland's eighth largest accountancy firm, came from a telephone survey of 190 businesses in June and July, a challenging time for many businesses due to the global pandemic and after a country-wide lockdown. Retirement planning (for 45%) and business challenges, particularly the effects of COVID-19, were the key drivers of thoughts of selling the business.

Micro and food businesses are more likely to consider selling than others. The number who would definitely not sell has dropped below half, to 49%, compared to 55% in 2019. The companies surveyed consisted of 58% in food manufacturing or production and 42% in agribusiness. Like other sectors of the economy in 2020, the Irish agri-food sector had to cope with the impact of COVID-19. The food industry is Ireland's largest indigenous industry, forming the backbone of many communities across Ireland, and employing 7.1% of the total workforce. The industry has grown steadily over the last decade, culminating in €13 billion of revenue from exports last year. The produce from the Irish food industry is enjoyed in over 180 countries worldwide.

According to Bord BIA estimates, the COVID-19 pandemic caused the Irish food service market to contract in size by nearly half during 2020. The food service market includes food and drink consumed and prepared outside the home in restaurants, pubs, hotels, coffee shops, workplace canteens, hospitals and educational facilities, as well as from vending. According to the Bord Bia 2020 *Irish Foodservice Market Insights Report*, this so-called out-of-home sector was valued at €4.5 billion for 2020. This represents a drop of €4 billion compared to the previous year. However, the report predicts that the sector will experience a recovery next year, even in the worst case scenario. The contraction, caused by COVID-19 restrictions, follows eight years of consecutive growth in the market. The performance of the foodservice industry is intrinsically linked to economic conditions, tourism and employment, all of which will continue to be challenged in 2021.

Most Farm Incomes Improved for 2020

It looks like Irish farmers increased their production by 5% (in value) in 2020, despite COVID-19. The earliest Eurostat estimates also indicate they increased their income by 16.1%.This compared with the EU-27 where farmers are estimated to have incurred an average decline of 7.9% in farm income.

After the initial severe impact on the foodservice sector, dairy and beef prices recovered more quickly than had been anticipated. However, restrictions on economic activity in Europe due to COVID-19 could have some impact on commodity prices early in 2021.

For our pasture-based systems, a protracted period of dry weather through May and into June, had an adverse impact on grass growth and first-cut silage yields in many areas in Ireland. Soil moisture deficits were widespread, but recovered through higher rainfall levels over the summer.

According to Teagasc on a positive note, 2020 farm input price movements have been favourable as feed, fertiliser and energy were all cheaper than in the previous year. For dairy, cattle and sheep farms, input costs fell slightly during 2020.

2020 was a challenging but defining year for beef producers. There was a 1% increase in steer prices, a 5% increase in weanling prices and a 2.5% increase in store prices plus an 11% increase in gross margin on cattle rearing and a 2% reduction in total input costs. In total for 2020, according to DAFM, the beef kills were 1,798,682 head, an increase of 61,397 head or 3.5% on 2019. However, these figures are for a 53-week kill period in 2020 and a 52-week kill for 2019.

For the last few months of 2020, these cattle had a price increase of 20c/kg for both steers and heifers compared to 2019. However, overall, there was a 3% fall in cattle finishing gross margins and the average cattle enterprise had a negative net margin. For 2021, based on current cattle numbers, the factory throughput is expected to fall by 60,000 to 80,000 head for the coming year, according to Bord Bia. So this should help to underpin the current improved prices for beef cattle.

On a positive note, 2020 was a good year for lamb producers with prices up by around 10%. According to Teagasc, average gross margins on lowland flocks increased by 43% to €898/ha. The numbers of sheep processed for 2020 was 4% up on 2019 at 2,535,794 head. Lower New Zealand imports to the EU, due to increased NZ exports to China, and a lower dependence on the food service sector during COVID-19 restrictions all contributed to improved EU lamb prices.

Supplies of lambs are tight, based on higher throughput earlier in 2020 so prospects for 2021 are excellent as our major competitors in the valuable French market are British exports. Speaking at the Teagasc Outlook for 2021, Anne Kinsella said that net margins on sheep farms are forecasted to increase by 23% in 2021, an increase of €76/ha to €404/ha.

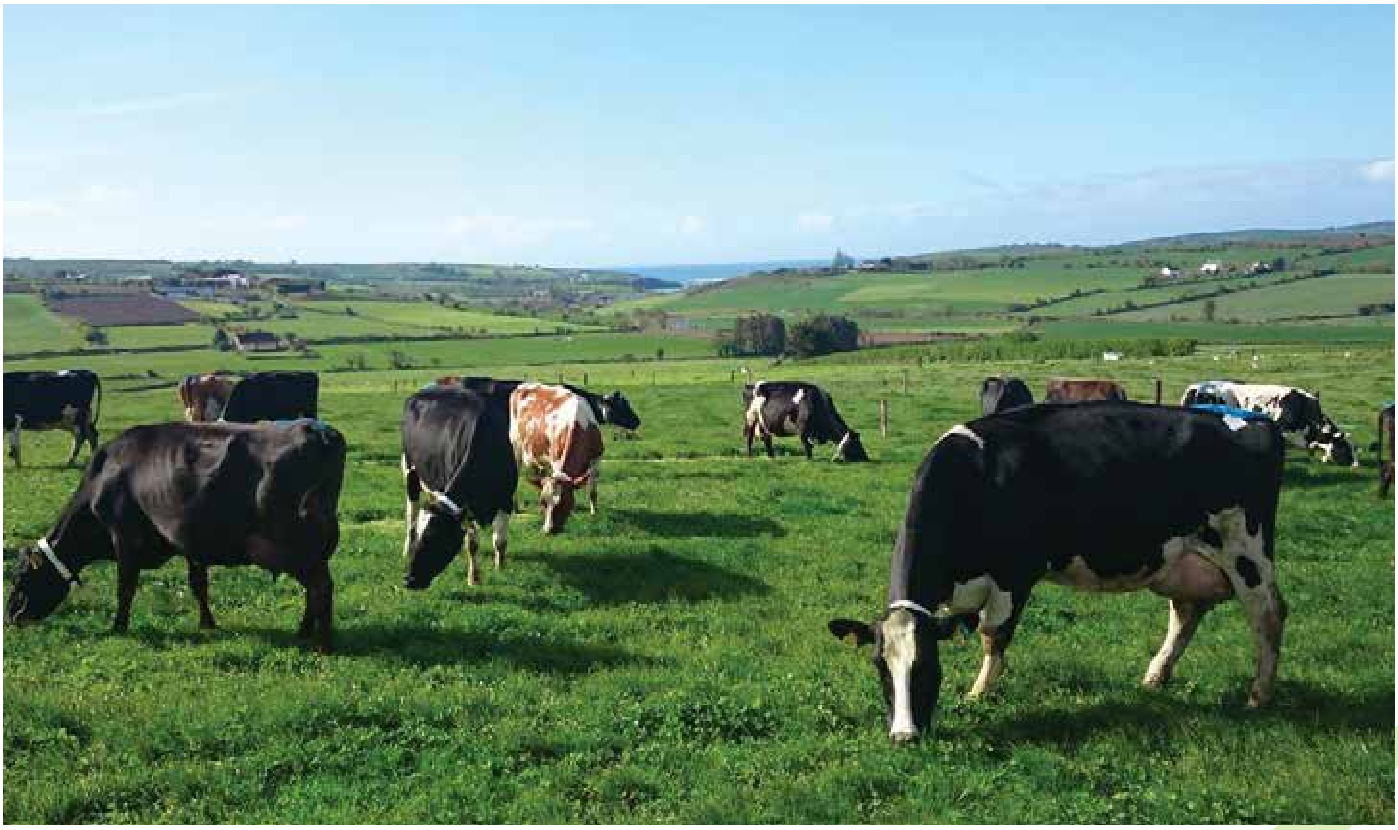
However, 2021 is looking good as factories are paying more for cattle due to reduced supplies. DAFM data from the AIMS figures shows that cattle supplies will be tight for the first six months of the New Year. In addition, retail demand for beef has soared across the EU due to the widespread COVID-19 lockdowns. British retailers saw beef sales increased by 10% last December over 2019. So shelves and chill stores were emptied as demand outstripped supplies. The multiples expect demand to increase further during the spring.

2019 also saw a drop of 42,056 in the number of suckler cows recorded. This was the fourth consecutive year that numbers had dropped, with 859,638 suckler-bred calves registered in 2019 compared to 940,845 calves registered in 2016, a drop of 81,207. Another significant drop was expected in 2020 due to the poor margins in this sector. However, as of last May 15, there was a 14,357 head increase on the total number of suckler calves registered during the same period of 2019.

Cattle farmers invariably blame the meat factories for low beef prices and compare these with retail prices in the Irish retail multiples. However, most of our beef is exported and a lot of it ends up as low value burger beef. Irish cattle prices are, in effect, determined by what we can achieve from export markets.

Rather than picketing factories and complaining about low beef prices, the farm organisations would be better off negotiating forward price contracts with the major meat factories. After all, the meat processing business operates on low margins and even if the farmers got all the margin it would make little difference to overall cattle prices.

With a forward contract, beef finishers would know what they could afford to pay for weanlings and forward stores. They could focus their efforts on improved breeding, carcase quality and better grassland management, while improving animal health and nutrition. The achievement of a PGI status from the EU would also be of some assistance in improving prices for suckler beef. On a positive note, the Twenty20 Beef Club organised by Glanbia and Kepak, improved farmer returns by €100/head which shows what is possible. The average age of slaughter was 20 months compared to the national average of 29 months – good for both the environment and return on the



capital invested.

The price of animals sold, and income from sources such as the Basic Payment Scheme and agri-environmental schemes, have a huge influence on the income of beef farmers. However, management of production is still the decisive factor in profitability. Many farms have the scope to dramatically improve profitability.

The gross margins generated on the top 33% of beef finishing farms and the bottom 33% differed by €956/ha in 2016, according to Teagasc's National Farm Survey. Data taken from 101 farms – a representative sample of 12,500 beef finishers nationally – showed that the best performing finishers had a gross margin of €1,089/ha in 2016; this compares to just €133/ha on the bottom 33% of operations.

In addition, the value of gross output per hectare varied significantly across the top 33%, the average and the bottom 33% of beef finishers. Teagasc puts this mainly down to differing stocking rates on these units. Farms in the top 33% carried 1.99LU/ha and those in the bottom third carried 1.11LU/ha.

Survey data shows that the gross output produced by the top finishers stood at €1,875/ha. Meanwhile, those in the average and bottom 33% groups produced gross outputs of €1,017/ha and €536/ha respectively.

Obviously, there is some potential to improve beef sales to the huge and growing Chinese market. However, we will be competing with Brazil, Uruguay, Argentina and Australia, along with New Zealand and Canada. The Chinese will undoubtedly source most of their supplies from these low cost suppliers. On a positive note, if these countries sell more beef to China, then the British and EU Markets will be of less interest to them.

Another Good Year for Pig Producers

There are 8,300 people employed in the pig sector and it ranks third in economic importance after beef and milk production. Between 2010 and 2019 the number of sows on farm has increased from 400 to 831 while the number of pigs weaned/sow pa has increased from 21.6 to 26.8 so productivity has improved significantly. Despite recent price reductions, the 2020 Irish pig price is on track for the highest yearly average in over 10 years.

Pig farmers have also welcomed the Northern Ireland protocol which will protect the continued trading of 12% of pigs produced south of the border (about 500,000 pigs annually) to the Karro plant in Cookstown, Co. Tyrone. Throughput for 2020 stands at 3,439,788 head in the Republic (+83,162), according to DAFM figures. In the June CSO survey, total pig numbers were up by 1%.

The new Pig and Poultry Investment Scheme provides financial aid to farmers to help them upgrade equipment in order to comply with animal welfare standards. It also helps to fund energy efficient measures to improve competitiveness and raise farm incomes.

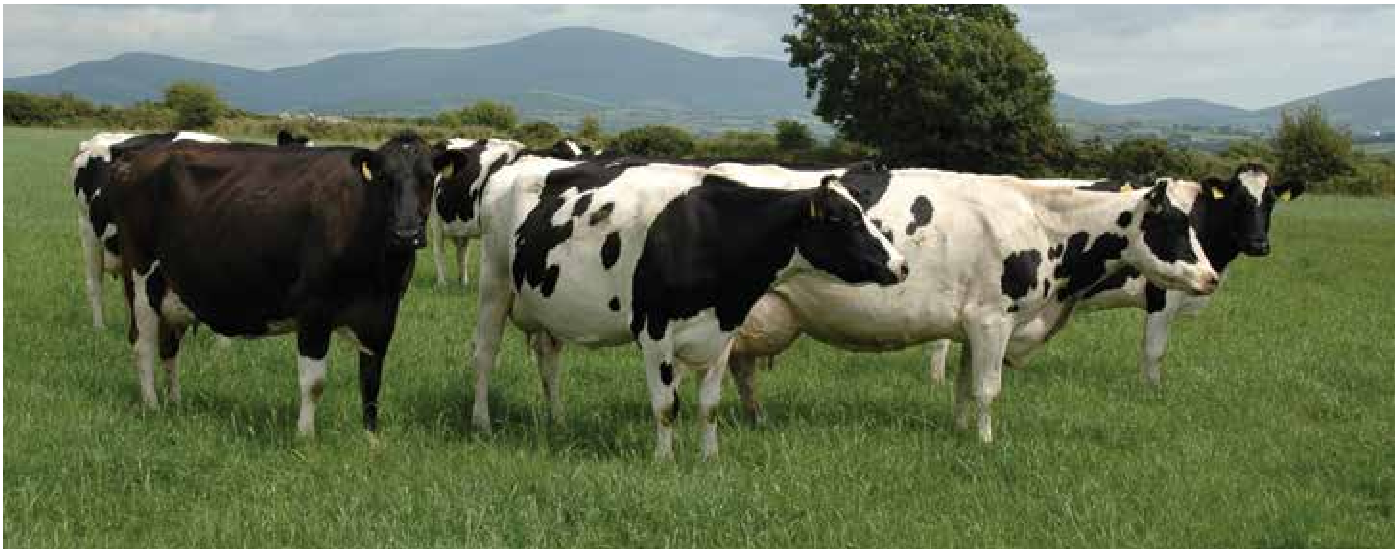
Under the existing provisions, TAMs grants are available at 40% of expenditure. Last year, the DAFM asked the EU Commission to raise the limit under the scheme from €80,000 to €200,000 per holding. This should encourage pig producers, after another good year, to make significant investments in their production facilities during 2021.

A Tough Year for Cereal Growers

For cereal growers, adverse winter weather in 2019 meant that there has been an increase in the area allocated to lower-yielding spring crops in 2020. So total yields for cereals in 2020 were down on those achieved in 2019.
While straw prices increased in 2020, much-reduced straw volumes resulted in a lower straw output value on tillage farms. With a large drop in cereal margins, the average tillage farmer will struggle to make an income of €30,000 for 2020.
According to DAFM data, the 2020 cereal area was largely similar to 2019. However, winter cereal crops area declined by approx. 40%, the deficit being made up in the spring, with spring barley increasing from 94,000 hectares in 2019 to 141,000 hectares in 2020. Increased spring oats (+136%) and spring wheat plantings (+202%) also offset the decline in winter cereals.
According to Teagasc estimates, the 2020 cereal crop was 1.9 million tonnes, a decrease of 20% compared to 2019. Overall yields declined from 0.5 tonnes per hectare (t/ha) to over 1.5 tonnes (t)/ha depending on crop. Grain quality was good despite some broken weather during harvesting. Poor planting conditions in autumn 2019, a wet winter, followed by a drought in April and May (in the midlands and north east) and, finally, poor weather during the harvest, all combined to reduce yields in 2020. Straw volumes were estimated to be 30% below normal.
However, the overall input usage was down in 2020 due to a large decrease in winter cereal plantings arising from poor weather conditions. Although there was an increase in spring plantings, these crops had a lower input requirement. So tillage farmers benefited from volume and input price reductions.
Teagasc is predicting an increase in 2021 gross and net margins, with an increase by €10/ha for spring barley, €125 for winter wheat and €50 for winter barley. Overall, Teagasc expects net margin to increase by over €40 per hectare.
Current estimates indicate that the winter cereal area for 2020/2021 is similar to 2018/2019. Crops have generally been planted in good conditions and there are relatively few establishment problems reported. World forward prices for 2021 are looking good and, of course, livestock numbers continue to increase so there is a strong home market for animal feed.
Irish exports of alcohol beverages are increasing which is good news for over 800 malting barley growers. Indeed, Boortmalt, which processes around 120,000t of malting barley for the brewing and distilling industries at its site in Athy, Co. Kildare, is asking farmers to grow more winter barley.
According to the *Crops 2030* report, about 48,000t of food-grade oats are produced in Ireland each year and around 10,000t are exported. One opportunity is with oat drinks which have a lower carbon footprint than almonds and soya drinks. Flahavan's recently launched its own range of oat drinks as consumers look for dairy alternatives. According to Forbes, oat-based drinks recorded the biggest surge in US supermarket sales during 2020. A recent Nielsen report indicated that sales were up 208% on the previous year to $249m.
Another option for cereal growers is to rebuild our own flour milling business using home-grown wheat as the 230,000t of imported British flour pa will now be much more expensive after Brexit.
Another new cereal crop of interest to tillage farmers is rye as it has high grain yields (10-12 t/ha) and a low cost of production. It is an excellent ingredient for pig and ruminant diets. Production costs are similar to winter barley but grain and straw yields are higher. One of the advantages of winter rye, according to Teagasc, is that it gives growers the option to lengthen the rotation before returning to a break crop.
Approximately 450 Irish potato farmers produce around 400,000t of potatoes each year from the 8,000ha planted. Each year an estimated 70,000t to 80,000t of potatoes are imported into this country, but post-Brexit by 2030, more than 75% of these imports could be grown domestically if we can breed more suitable varieties. In addition, we imported almost 8,000t of seed potatoes in 2019, mainly from Scotland. Arising from Brexit we now have the opportunity to grow these in Ireland, mainly in Co. Donegal.
Rapeseed oil is area which has massive potential. Currently, we produce approximately 320,000L of cold-pressed rapeseed oil. However, the potential market is estimated at 2.5 million L pa. At present, the retail value of Irish cold-pressed rapeseed oil is €5 million, but the potential retail value is a whopping €34.6 million.

Milk Production Increasing

The dairy cow population has continued to increase in 2020. According to the CSO June census, the number of dairy cows at 1,567,700 was up by 62,900 (+4.2%). Milk production increased by around 4.5% to 8.3 billion L, as we had normal weather conditions for the rest of the season plus a mild winter. In Northern Ireland,



milk production increased by 1.8% to 2.43 billion L. So total milk production on the island for 2020 was approximately 10.7 billion L.

A new report, titled *An Analysis of the Irish Dairy Sector Post Quota,* a collaboration between Teagasc and Cork Institute of Technology, charted the phenomenal growth in the dairy sector post quota removal. The research reviewed Ireland relative to the Netherlands, Denmark, Germany, France, and New Zealand in relation to the milk prices farmers receive.

Across the five-year period studied, from 2014 to 2019, the Irish milk price was lowest of the EU countries considered, with the Dutch milk price the highest. An average difference over the period of 5.2 cent per litre was reported between the Irish and Dutch, with the other EU countries falling between these two. The Irish milk prices, however, followed the commodity market returns for skim milk powder and butter during this period.

It should be pointed out that milk solid prices tend to be higher in other countries and they also have significant local markets for higher value consumer dairy producers, hence the higher price. According to the most recent data from the farm accountancy data network (FADN) for the period 2014-2017, the average net margin (excluding owned labour) in Ireland was 8 cent/L versus 4.6 cent/L for the UK, 3.6 cent for the Netherlands, 2.7 cent for Germany, 2.5 cent for France, and minus 1 cent for Danish farmers.

The FADN data puts Irish production costs (excluding owned labour) at 24 cent/L as opposed to 38 cent for Denmark, 35 cent for the Netherlands, 33 cent for France, 32 cent for Germany, and 30 cent for Britain.

The research found that dairy processing capacity utilisation in Ireland stands at approximately 62% when averaged over the full year, which compares to utilisation levels of over 90% in the other EU countries. This under-utilisation of processing capacity results in higher processing costs which, combined with our product mix, is the major factor in determining the lower milk price paid here.

However, when the profitability of milk production was compared across the countries, even though the Irish farmers received the lowest milk price, their cost base was substantially lower, resulting in the highest profitability. Irish milk producers also have relatively low bank borrowings compared to dairy farmers in Denmark, Holland and New Zealand.

Country	Ireland	New Zealand	Holland	Denmark
Bank debt/cow	€940	€4,000	€10,000	€20,000

According to Teagasc, the average income on Irish dairy farms in 2020 should be close to the €67,000 achieved in 2019. The 2021 global outlook for dairy remains optimistic thanks to strong commodity prices, forecasts of economic growth in many regions and improving consumer sentiment, according to agribusiness specialist Rabobank.

The last three Global Dairy Trade (GDT) dairy product auctions of 2020 were all positive so all our milk processors increased their prices in November. The first GDT auction of 2021 was also positive with 33,313t sold. Butter prices increased by 7.2%, cheddar by 5%, SMP by 4.1% and whole milk powder by 3.1%.

Cattle & Sheep Prices Recover in 2020

While cattle prices staged a recovery in 2020, it remained a challenging year and the additional support provided to the sector via pandemic support payments was necessary to support beef farmer incomes. The average income on cattle-rearing farms is forecast to increase by 5% (€9,700) in 2020, while incomes on cattle-other farms are forecast to contract by 4% (€13,300).

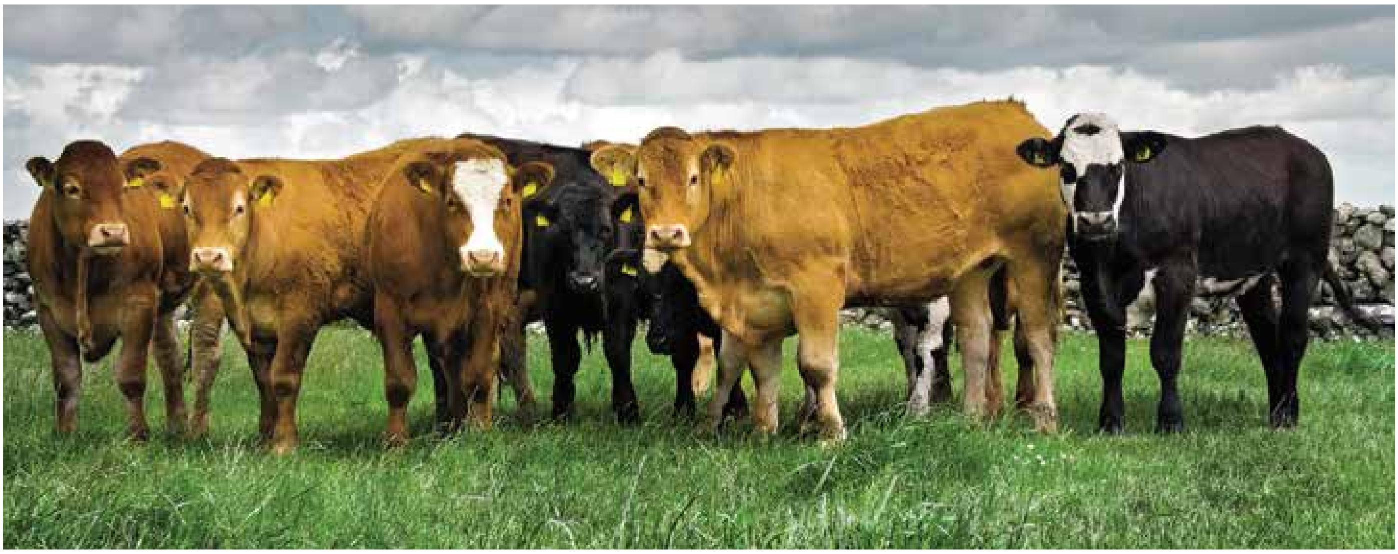
Sheep prices in 2020 were stronger than in 2019, with prices more than 5% higher than in 2019. Lower British exports to key continental EU markets, reduced imports from New Zealand and a contraction in EU production combined to leave EU and Irish prices higher, despite the disruption to demand caused by COVID-19. In New Zealand sheep numbers have fallen from 39m in 2007 to 26m in 2020. Their lamb exports to China have also been increasing in recent years. With reduced production costs due to lower feed, fertiliser and energy prices, margins and incomes for Irish sheep farmers were well-improved in 2020. Incomes on sheep farms should increase by 15% in 2020, to more than €17,000.

Extra Brexit Costs for Agri-Food business

The UK is our largest trading partner for food and drink. In all, 41% of food and drink exports go to the UK (€4.4 billion) and Ireland is the UK's second-largest supplier of food and drink. In relation to meat exports, Ireland is heavily dependent on this market, with over 50% of our beef (280,000t), 37% of our pigmeat (88,000t), 26% of our sheep meat (14,000t) and 85% of our poultry exports going to the UK in 2016.
Economists with Dairy Industry Ireland and Meat Industry Ireland estimate that the extra cost of Brexit will amount to +10-12 cent/kg of beef and +1.2 cent/L of milk. This is due to the veterinary health certificates and custom declarations required for goods of animal origin exported to Britain – including any product containing dairy or meat.
So, for example, the number of customs declarations required pa will increase from 1.5 million to 20 million. All this extra red tape will also impact on the cost of logistics and cause increased delays at various sea ports due to all the inspections required. This will also impact on imports such as food, fruit, flowers etc., which will benefit Irish producers who will not have any such delays in their home market.
Britain has also opened trade talks with New Zealand, Australia, the United States, and Canada. This has the potential for imports of cheaper food with inferior standards of food safety, animal health and welfare, as well as lower environmental standards. These cheaper foods will compete in particular with Irish and, to a lesser extent, British food products.
The pursuit of a 'cheap-food' policy by the UK, which currently imports 26% of its total food consumption from the EU, clearly motivates its trade talks. Last July, the EU agreed a €5bn Brexit Adjustment Reserve Fund so our, hopefully significant, share of this fund will be of some assistance to Irish food exporters.
On a positive note for Irish online sales, customers purchasing from UK websites may, from January 1, 2020 be liable to customs duties, taxes and fees. There will also be more delivery delays due to time required for customs clearance etc. One positive impact of COVID-19 has been a huge increase in online sales activities by Irish firms.
In addition the Irish Government have allocated a €400 million Brexit fund to help Irish farmers and, in particular, beef producers. The Government has also pledged up to €100 million to assist the agri-food sector and a range of supports for the fishing industry. The new Capital Investment Scheme for the Processing and Marketing of Agricultural Products will be managed by Enterprise Ireland and will open for applications in January.

Huge Investment in Milk Processing

In the last five years, over €1.3bn was invested in milk processing capacity in the Republic. Since 2015, dairy cow numbers have increased from 1.3m to 1.5m and average yield has increased from 4,900 litres per cow to 5,300 litres per cow.
Dairygold and Glanbia have invested the most as they have seen significant growth at farm level and have not capped production from member suppliers.
In the last five years, Glanbia has invested at Belview, Ballyragget, Portlaoise and Virginia. Dairygold has invested at Mallow, Mogeely, and Mitchelstown. Aurivo has invested at Ballaghaderreen and Killygordon. Arrabawn has invested at Nenagh and Kilconnell. Carbery has invested at Ballineen. Tipperary Co-op has invested in drying facilities and effluent treatment. Lakeland Dairies has invested at Artigarvan, Bailieboro and Cavan. Kerry has invested at Charleville, Listowel and Newmarket.
More than 50% of our dairy product is exported as cheese – of which 83%, or around 100,000t, is cheddar for the British market. However, Britain currently exports about 150,000 tonnes of cheddar, mainly to EU markets, such as Spain, Belgium and the Netherlands. After the Brexit deal, not all of that cheese might be exported, which would open up opportunities for Irish cheese, potentially offsetting any decline in the British market.
Recent investments at Carbery and Glanbia have looked to diversify into continental-type cheeses such as Gouda, Edam and Mozzarella. Dairygold is partnering to make Jarlsberg, a premium Norwegian cheese, in Mogeely. Last year, Glanbia completed a €35m investment in its Wexford cheese plant which doubled capacity.
Other investments were in milk powder drying facilities for export. Meanwhile, Ornua has invested in butter processing in Mitchelstown and Arrabawn Coop has invested in casein.
Cheese has many health benefits so market prospects are good. The world market is expected to grow annually by 2.5% (CAGR 2021-2025). Researchers from Texas A&M University discovered that three cheeses – cheddar, brie and Parmesan – contain spermidine which helps to prevent damaged liver cells from replicating. The scientists surveyed 800 Italians about their diets. Those with a higher intake of spermidine had lower



blood pressure, a 40% lower risk of heart failure, and a reduced risk for other cardiovascular diseases. Experts at Soochow University in China noted the vitamins, minerals and proteins found in cheese help protect against cardiovascular disease.

New EU Environmental Restrictions for 2021

The Green Low Carbon Agri-environment Scheme (GLAS) pays farmers to promote biodiversity, protect water quality, and to help combat climate change. GLAS was launched in 2015 and, to date, 50,000 farmers have received over €745 million in payments. GLAS payments amounted to €213.8 million in 2019 distributed to 47,614 farmers.

Over half of Ireland's rivers are currently not at the required EU water quality status of 'good' or 'high'. Farm roadway runoff can contain sediment, faecal organic matter, nutrients and pathogens which can contribute to a decline in water quality if allowed to enter waters.

Diverting the soiled water onto a field or other area where the water can soak down through soil helps reduce the impact on our waters. The reason for this is that one of soil's core functions is its ability to clean water as it passes through it, acting as a filter and attenuating nutrients.

Irish farmers are embracing low emission slurry spreading (LESS) technology which has significant benefits in reducing ammonia emissions, improving the fertiliser value of slurry and increasing the window available for application of slurry. Over 7,900 applications for support under the TAMS grant scheme have been received while over 2,700 farmers have been paid to date. Over the last five years, €246 million worth of grant aid under TAMS has been paid to 17,900 farmers by the DAFM.

Ireland's nitrates derogation provides farmers with an opportunity to farm at higher stocking rates when they take extra steps to protect the environment. In effect, a farmer must not exceed a stocking rate of two dairy cows/ha without a derogation but can farm at almost three cows/ha if approved for a derogation.

However, Irish farmers have been given until April 15, 2021, to get set up for compulsory LESS. This will mean that splash plate spreaders will essentially be prohibited on derogation farms and farms over 170kg of nitrogen (N), other than for use with soiled water.

Around 7,000 livestock farmers and, in particular, dairy farmers have applied for a Nitrates Derogation, and a further 5,000 farmers have to export slurry to comply with EU regulations. From January 2021, all these will have to implement a four-year liming nutrient plan.

On a positive note, by reseeding with higher yielding grass and mixed species varieties along with clover, farmers can significantly reduce the quantity of N required. The use of high quality grass varieties will lead to more efficient protein usage by livestock, reducing N loss to the environment. Old, permanent pasture is up to 25% less responsive to available nutrients, such as N, than perennial ryegrass-dominated swards.

Switching from calcium ammonium nitrate (CAN) and straight urea to protected urea will also help reduce ammonia emissions and greenhouse gases. The use of a biological slurry additive increases nutrient recovery while also reducing ammonia emissions and offensive smells. It also reduces time required to agitate and pump slurry along with surface crusting.

Teagasc research has shown that dairy animal performance increased by 12-15% with the inclusion of white clover in grazing swards. Research has shown that newly reseeded grazing swards can produce 20-40% more grass. It is also more palatable, has a higher dry matter digestibility (DMD) value and delivers more rapid regrowth than old swards.

Silage produced from high-ryegrass swards will be easier to preserve due to higher sugar content, will recover faster and give higher yields with quality generally more than six units higher in DMD than old swards. Reseeding is also important as an increasing dairy-cow population requires more grass and silage. The average level of grass produced nationally is 9.1t dry matter (DM)/ha, with the top farms producing over 15t DM/ha. Comparing these two figures shows just how much scope there is to increase the total grass grown and hence, increase grass in the diet, while reducing feed costs in livestock production systems. To achieve the target of 10t DM utilised per ha, assuming 75% utilisation, a farm needs to be growing 14t DM/ha.

Exciting Project Clover Potential

Project Clover will reduce carbon emissions and improve the sustainability of Irish agriculture through the potential development of 125 large-scale, farm-based, anaerobic digestion (AD) plants, producing biomethane and biofertiliser digestate. It involves three key elements: using biomethane to displace natural gas; using digestate to displace chemical fertiliser; and enabling soil carbon sequestration.
Project Clover is led by food processor Danone and includes Wyeth Nutritionals Ireland, Dairygold, Glanbia Ireland, Carbery, Tipperary Co-op and Lakeland Dairies. It is supported by KPMG, the Renewable Gas Forum Ireland, Devenish Nutrition and Gas Networks Ireland.
Each food company in the group recognises that switching from natural gas to fully renewable biomethane for thermal/drying facilities in their milk-processing plants is key to reducing their carbon emissions.
A plan to develop a facility near Mitchelstown that will convert slurry and household waste into natural gas for the national network has been approved by An Bord Pleanála. Once it is operational, it will produce enough natural gas to supply green energy to some 56,000 homes.
It will be the second facility of its kind in the country. The first, at Cush in Co. Kildare, began operations last August. The Mitchelstown facility will cost around €28 million to develop, incorporating up to 20 agri-anaerobic digestion biomethane units within a 50km radius.
Each of them will convert animal waste, slurry, municipal waste and grass into renewable gas that will be collected by a fleet of purpose-built tankers, similar to the operating model currently used for milk collection by dairy co-ops.
The gas, which will be identical in composition to natural gas, will then be fed into the national grid through the central plant, one of 17 such facilities planned across the country. Biomethane, is a clean, renewable and carbon-neutral fuel ideal for heat, electricity and transport.

Ireland's grass-growth potential puts it in a better position than most countries to comply with the new EU sustainability rules when it comes to biomethane. To meet the EU sustainability criteria, AD plants need 16,000t of slurry from within a 3-5km radius and 22,000t of grass within 10km. Feedstocks, such as whole crop or beet, can also be used.
Currently, an average field in Ireland produces 6t DM/ha of grass. With improved agronomy, productivity can comfortably increase to over 12t DM/ha. It is believed that this increase in output is vital to ensure the industry will not compete with existing enterprises for feedstock. Under the current business model, the anaerobic-digestion plants will pay a fixed price of €30/t of grass for silage.
This could be a great opportunity for smaller farmers and those nearing retirement age impacted by Brexit to reduce stock numbers and grow more silage, which could be harvested and transported to anaerobic-digestion plants by local agri contractors. Some of the decommissioned Bord na Mona plants would be ideal sites for anaerobic-digestion plants.

Livestock Breeding Thriving

The Beef Data and Genomics Programme (BDGP) is one of a range of sustainability actions under our Rural Development Programme. It is designed to accelerate genetic improvements in the quality of the herd, leading to associated climate benefits. By December 2019, almost 23,500 farmers had received €212 million in payments since the inception of the scheme.
The Irish Holstein Friesian Association (IHFA) has 3,700 members in 15 club areas with 290,000 cows registered. There is also an active Holstein club in Northern Ireland. Holstein and Friesian cows are the most popular dairy breed in Ireland and worldwide. Both breeds can be crossbred without any loss of pedigree status or herd devaluation.
The average commercial herd size on the island of Ireland comprises about 90 cows. Dairy cow numbers in Ireland (excluding 313,300 for Northen Ireland on 3,363 farms) were close to 1.6 million by June 1, 2020. This is up about 5% on June 2019. Due to the Economic Breeding Index, average milk yield/ cow in Ireland has been increasing and in 2020 it was around 5,500L.

Year	L/cow	% Butterfat	% Protein	Milk solids/cow
2010	4,980	3.85	3.37	359kg
2019	5,446	4.17	3.53	419kg

However, the milk produced by the average 90-cow commercial herd could be replaced by 66 pedigree cows averaging 7,500L pa. Unfortunately, only 51% of

Irish dairy cows were milk recorded in 2017 compared to 85% in Germany. But the numbers are improving. According to Teagasc, milk recording helps farmers to select a better herd, leading to an extra 400L of milk/cow pa. It decreases avoidable costs due to poor udder health by detecting cows at risk of mastitis and reducing somatic cell count levels by about 25%. Improvements in milk quality contribute to improvements in gross margins of at least 4%.
The smaller pedigree herd would require less housing and slurry storage, less labour and less land. Indeed, this herd would be guaranteed more grass and silage availability due to the lower stocking rate. The profitability of such a higher output milk-production system has been well established by research at University College Dublin (UCD) using their own herd. This system is also more economically and environmentally sustainable.
The most popular cattle breeds in Ireland are: Limousin, Charolais, Angus, Hereford, Belgian Blue, Simental, and Blonde d'Aquitaine etc. According to data from the Irish Cattle Breeders Federation, in 2019, 1,552,122 calves were born to a beef bull and 798, 926 to a dairy bull.

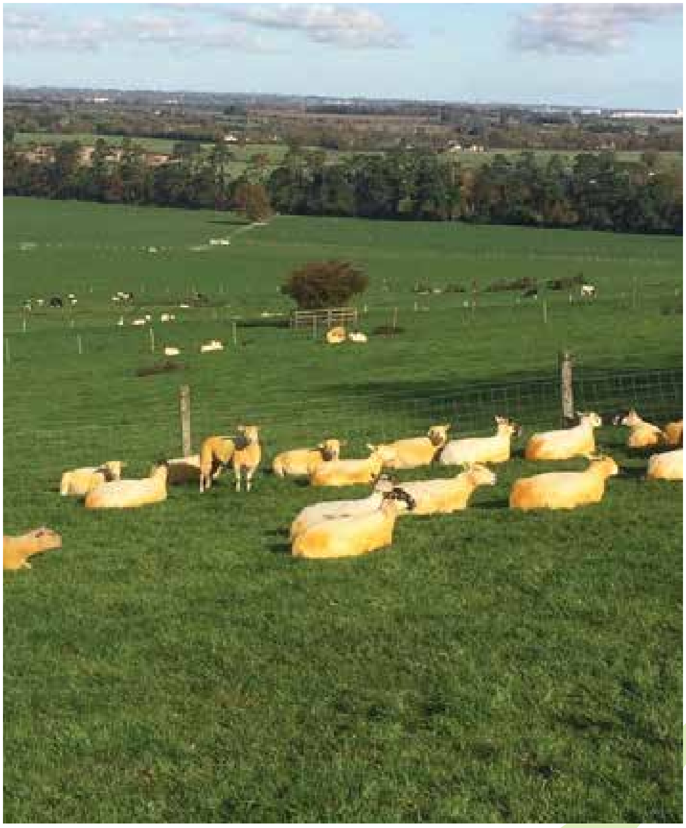
Calf births by the main breed of sire were as follows:

Friesian	Limousin	Angus	Charolais
748,093	400,359	395,441	301,349
Hereford	Simmental	Jersey	Belgian Blue
258,962	72,026	44,002	40,348

Calf births by the main breed of dam were as follows:

Friesian	Limousin	Charolais	Angus
1,372,367	298,901	168,188	117,617
Simmental	Hereford	Jersey	Belgian Blue
89,953	86,237	54,501	38,063

The top three sire selections for dairy dams were as follows: Friesian 51%, Angus 20.7% and Hereford 15.1%.
The top three sire selections for beef dams were as follows: Limousin 37.4%, Charolais 32% and Angus 10.6%.
During 2019, cattle movements were as follows: 1.3m from farm to farm and 1.7m from farm to the livestock mart.
The top 10 counties, in order of significance for dairy and cattle numbers, were as follows: Cork, Tipperary, Galway, Limerick, Kilkenny, Kerry, Meath, Wexford, Clare and Laois. During 2019, around 302,000 live cattle were exported mainly to Spain, Holland, Italy, Northern Ireland, Libya and Turkey.
The 55th Monamore Holstein Friesian sale for Tom, James and Rhona Kelly, near Drogheda, was surely one



the best-ever auctions to date. The sale was conducted by Taaffe Auctions last October. Their in-calf heifer, Monamore Westcoast Barbie sold for €7,560 and, in total, 73 lots sold, averaging €3,023 with 21 baby heifer calves averaging €1,117 each.
A Simmental bull born in May 2019 at Garrett and Lyndsey Behan's Clonagh Simmental herd in Laois, set a new Irish and British record for the breed when it was sold for €52,000 at the Irish Simmental Cattle Society Premier Sale last October.
For Westmeath Charolais breeder, Jim Geoghegan, 2020 was a special year when his bull, Lisnagre Peder, sold for €16,000, setting a new record at the Irish Charolais Cattle Society's Annual Christmas Cracker Sale. This milestone was representative of the breed's success in 2020.
An all-breeds centre record of 10,500gns (c.€12,200) was set at Ballymena Limousin sale last June for the September 2018-born Limousin bull, Rahoney Obed, owned by H&D McFarland from Trillick, Co. Tyrone.
Top prices were paid for bulls at the Irish Charolais Cattle Society Premier Bull Sale at GVM Mart, Tullamore last November. The clearance of 75% at an average of €3,720, with a top price of €7,500, was one of the best overall results for years, with the yearly average up almost €700 per head.
Cavan breeders Francis and Noel Fitzpatrick scored well at the Angus Elite sale last December with a price of €8,600 for their 15-month-old bull Ernehill Samson.
The strength of the trade was reflected in the clearance of over 75% which was up from 65% clearance at the

sale in 2019 with the top price up 32% on last year. Seventeen bulls were purchased for export.
A bull from the Tullaha pedigree herd in Limerick sold for a show-stopping price of €4,600 to a Tipperary farmer, at the October Hereford Society Premier sale.
A Limousin heifer, Wilodge Poshspice, sold for a record 250,000 guineas (one guinea =£1.05/€1.20) at a sale in Carlisle recently.
This November 2019-born embryo heifer, was bred out of Millbrook Gingerspice, who won Supreme Champion at the Balmoral Show three times in a row. Next in line was the served heifer, Wilodge Onhigh, hitting 25,000 guineas. She was sired by Powerful Irish, with bloodlines going back to Haltcliffe, Grahams and Cloughhead.
Pedigree sheep also sold well during 2020, which indicates the confidence arising from a good year for lamb producers. A shearling ewe bred in Co. Mayo sold for 5,200 guineas (over €6,000) at the All Star Texel Sale at Blessington Mart.
A Fermanagh Beltex breeder set a new ram lamb record price of 45,000 guineas last August at the Borderway Mart in Carlisle from the Kinawley-based Matthew Burleigh's Matt's Flock in Co. Fermanagh.
The Moatfarrell flock owned by Denis Lynch of Ballinalee, Co. Longford continued its decades-long run of success when it claimed the top accolades at the Irish Suffolk Sheep Society premier show and sale at Roscrea Mart last August. The January 2020-born ram judged 'Male Champion' and 'Supreme Champion' at the Irish Suffolk Sheep Society premier show and sale 2020 at Roscrea Mart sold for the leading price of €1,500 on the day. Second highest price was €1,000 paid for John Martin's March 2019-born ram, from the flock at Duncormick, Co. Wexford. All figures for 2019 were exceeded with the top price up by €400 and clearance at 63% compared to 49% last year, while the overall average of €616 showed an increase of 10%.
The annual Black Beauties sale last December after a three-week postponement due to COVID-19 at Blessington Mart had a 100% clearance of Suffolk ewes. Demand was high and the average price on the day was an impressive €1,880. The top sale price for an in-lamb ewe owned by Richard Wilson of the Shannagh flock was €6,500.

Forestry Potential

The area of forest is estimated to be 770,020ha or 11% of the total land area of Ireland (National Forest Inventory 2017). Forest cover is now at its highest level in over 350 years. Since the foundation of the State, forest cover in Ireland has grown from 1.4% of the land area to 11%. Of the total forest area, 391,357ha or 50.8% is in public ownership (Coillte.)
The forest estate is comprised of 71.2% conifers and 28.7% broadleaves and nearly three quarters of the stocked forest area is less than 30 years of age. Leitrim is the county with the highest percentage of forest cover (18.9%) with 822 landowners, while Cork has the largest area (90,020ha) with 2,896 landowners.
Sitka spruce is the most common species, occupying 51.1% of the forest area. Over one quarter of the forest contains broadleaves. Nearly one-third of the broadleaves are 'other broadleaf species', of which over half are willow.
The next largest broadleaf species is birch (24.4%), followed by ash (13.1%) and oak (9.2%). Conifers occupy 479,530ha while broadleaved species cover 193,580ha. The third National Forest Inventory (2017) estimates national hedgerow and non-forest 'other wooded land' at 347,690ha, or 4.9% cover. Since the introduction of agri-environmental schemes in 1994, 6,605km of new hedgerows and more than 3.7 million trees have been established on non-forest land.
Nearly 300,000ha of private forests were established between 1980 and 2019; 81% of the forests afforested since 1980 have been planted by farmers.
The average size of private land afforested between 1980 and 2019 was 8.6ha. Since 1980, 23,256 individual owners have received grant aid to establish forests.
From 1993 to the present, broadleaf afforestation has averaged 23% and conifers 77%.
Sitka spruce remains the predominant species in Irish forestry. It is one of the most productive conifers in Ireland and has become the mainstay in roundwood processing. Since 2010, all afforestation applications are screened to determine whether they require an environmental impact assessment. All developments over 50ha are subject to a mandatory environmental impact statement.
In 2006, 28% of the area afforested was by people aged 60 years or more, and in 2019 this had increased to 57%. In 2019, 56% of the total area that received premium payments was owned by people aged 60 years or more. Forestry seemed to become an attractive option for many farmers as they sought an alternative to livestock enterprises.
The number of grant applications for forestry in recent years is as follows:

2019	2018	2017	2016	2015	2014	2013
377	539	815	926	863	950	938

The number of applications to plant forestry has collapsed over the last three years. According to the Irish Farmers Association, farmers have lost all confidence in the Government's forestry programme as planting has decreased by 67%. Farmers say they cannot afford to pay for costly Natura Impact Statements to undertake thinning operations, considered to be good management practice from both a timber-production and ecological-

enhancement perspective.
There is a major disparity between projected Government planting targets of 8,000ha pa and the reality of what has been achieved. For example, in 2018, just 4,250ha were planted with even fewer ha planted the year after. Annual planting by farmers has fallen from 7,935ha in 2010 to just 1,292ha in 2019.
Pippa Hackett, Minister of State for Agriculture with responsibility for land use and biodiversity has acknowledged that there are huge difficulties in the forestry sector related to licensing. Forestry felling licences are facing delays of two and three years; this is causing problems for the timber industry which has been forced to import timber from abroad. These delays have led to a backlog of some 1,900 files on the Forestry Service system for consideration. Based on this unsustainable situation the Minister quickly brought forward the Forestry (Miscellaneous Provisions) Act, 2020.
She also established a new stakeholder Forestry Policy Group to address and resolve some outstanding issues which are having a negative impact on achieving our forestry planting targets.
In 2018, exports of forest products from the Republic of Ireland were valued at €450 million, an 8.7% increase on 2017. In 2018, 40% of the wood fibre available for use in the Republic of Ireland was used for energy generation, mainly within the forest products sector.
The national forest estate is an important carbon reservoir, amounting to 311.7 million t of carbon in 2017. In 2018, 40% of the roundwood fibre available for use in the Republic of Ireland was used for energy generation, mainly within the forest products sector. Forests also provide a source of renewable raw materials and replace materials and energy produced from fossil fuels, which help mitigate rises in greenhouse gases. Usage of wood fuels is increasing due to renewable energy policies and as young plantations enter the production stage.
Between 2006 and 2018 the firewood market in Ireland grew by 63%, and the market is now estimated to be worth €35 million. In 2018, exports of forest products from the Republic of Ireland were valued at €450 million, an 8.7% increase on 2017.
Wood-based panels accounted for nearly 54% of the value of forest products exports, the balance comprising paper and sawn timber exports. In value terms, Ireland became a net exporter of sawn timber in 2010 for the first time since 1961. In value terms Ireland exported €146 million of sawn timber in 2018, mainly to Britain.
The national forest estate is an important carbon reservoir, amounting to 311.7 million t of carbon in 2017. Ireland's forests have removed (sequestered) an average of 4.3 million t of carbon dioxide equivalents per year from the atmosphere from 2007 to 2017.
Irish forests receive over 29 million visits per annum and around 12,000 people are employed in the forestry sector. In 2019, total Government expenditure was €89.9 million which includes afforestation grants,

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