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Agriculture and Food Development Authority

OVERVIEW OF IRISH AGRICULTURE AND FOOD FOR TEAGASC ROAD MAP SERIES

2027




1. Market and policy overview and outlook

Overview

Irish agri-food gross value added accounted for 6.7% of modified gross national income (GNI) (€14.8 bn), 9.5% of total merchandise exports, and 7.1% of employment in 2019. Irish food products are exported to over 180 countries worldwide and are generally perceived as high-quality safe products, with strong "green" credentials, as highlighted in recent years though the Bord Bia Origin Green programme, which is underpinned by food quality and assurance schemes at producer and processor level. Global and EU market policy-issues impact strongly on the Irish food sector, given that Ireland is primarily a food-exporting country (with approximately 80% of production exported). In 2020, Irish agri-food exports were worth €14.1bn. Ireland also imports agri-food products, and in 2020 these imports were valued at €10.1 bn.[1] Consumer branded food products, specialised ingredients for further processing by the Irish agri-food industry, as well as animal feeds were predominant in Irish agri-food imports.

Agri-food production and processing are particularly important in rural areas of Ireland, where other economic opportunities are more limited. Outside of the main urban centres, they account for a much larger share of income and employment; for example, the share of agriculture in the regional economies of the north and west of the country is more than double that of the average across the State as a whole.

Ireland has been judged to have a strong and integrated agricultural knowledge innovation system (AKIS) in comparison to other countries in the EU.[2] This means that there is relatively good infrastructure of professional support available to the farming sector.

Despite its strengths and importance to the national and regional economies, the industry is currently facing a number of significant economic, environmental, production and social challenges, which will influence its future development.

Market and policy outlook

The European Commission in December 2019 published its European Green Deal[3] and this was followed in May 2020 by the publication of its Farm to Fork[4] and Biodiversity Strategies.[5] These strategy documents, the soon to be finalised Irish Agri-Food Strategy 2030, and the still ongoing Common Agricultural Policy (CAP) reform process will shape the policy landscape for the Irish agriculture and food industries for the medium term. The commitment to the support of farm incomes remains part of the EU model of agriculture, but the European Commission strategy documents reflect a reordering of policy priorities by European policy makers. The focus of policy on the impact of agricultural production on the environment and food production systems on human health and well-being has moved up the EU policy and political agendas. The Programme for Government published in June 2020 also reflects the increased salience of environmental concerns, particularly those related to reducing greenhouse gas (GHG) emissions, and the emerging Irish agri-food 2030 sector strategy will also emphasise the need to address the environmental challenges facing Irish agriculture and food. All of these political and policy developments mean that the agri-food and environmental policy landscape within which Irish farmers and food producers will operate for the foreseeable future will be determined by the twin imperatives of reducing the negative environmental impact of agricultural production and supporting and facilitating the development of sustainable agriculture and food production activities to support the rural economy.

The medium-term market outlook to 2027 is for continued growth in the demand for food in line with current global population growth projections. For most agricultural commodities, prices adjusted for inflation are not expected to grow due to the growth in global supply. Volatility in output and input prices will continue to be a

challenge for farmers and the wider food supply chain. It is assumed that current EU policies on the application of genetic modification (GM) technologies will remain in place for the near future. However, current discussions across the EU on the role of precision-breeding practices in enhancing the resilience of production systems in light of EU Green Deal objectives may provide novel opportunities for individual sectors.

The medium-term market outlook for higher-value products and food ingredients is for continued growth based particularly on ongoing growth in incomes in middle income economies and increased demand for quality-assured foods with a known and trusted provenance. Continued access to such high-growth markets will require high food safety and environmental sustainability standards and resource-efficient food production systems. There may also be opportunities to develop novel by-products and new products arising from exploiting the potential of the circular bioeconomy.

CAP funding is a significant contributor to Irish agriculture. In 2019 EU-funded Pillar I and Pillar II spending on agriculture and rural development in Ireland was €1.585bn.[6] The future CAP budget and targeting of this funding will have a significant influence on the sector's performance.

Farm level challenges

At farm level, economic challenges include the current modest levels of farm scale and profitability for the majority of farming enterprises, which have led to an increase in part-time farming and a concentration of capital investment on larger, mainly dairy, farms. This dynamic may constrain the wider adoption of capital-intensive new technologies and on all other farm systems.

The environmental challenges facing the agri-food industry include meeting national commitments around reducing the volume of agricultural gaseous emissions (GHGs and ammonia), improving water quality and enhancing biodiversity. There is also an urgent need to reduce the risk of antimicrobial resistance (AMR), support integrated pest management (IPM) and reduce the use of pesticides in the tillage sector.

At farm level, there are a number of social and sectoral capacity challenges that are influenced in a significant way by an ageing farm workforce. These challenges include the need for measures to improve farmer health, safety of farms, and quality of life on farms and in rural Ireland. Action will be required to enable improved female participation within farm businesses and supports for more active and earlier farm succession planning and management.

Overall, the agri-food sector will need to improve the sourcing, management and retention of a high-quality, well-educated labour force. It will also need to increase its use of cost-effective automation and the exploitation of large data sets and digital technologies to support management decisions in relation to both improved farm income and environmental performance.

Regional opportunities

At regional level, agriculture and food will continue to anchor wider rural development. The development of the circular bioeconomy will bring new opportunities that will vary across different geographic regions. In the short term, this may include an increased focus on energy production and development of integrated woodlands, as well as niche food production and associated tourism and leisure activities. The facilitation of rural and farm-based entrepreneurship will be increasingly important for the achievement of balanced regional development. Publicly funded investment will be needed to ensure that physical and internet connectivity available to those living and working in rural Ireland is at least as attractive as that available in Ireland's towns and cities.

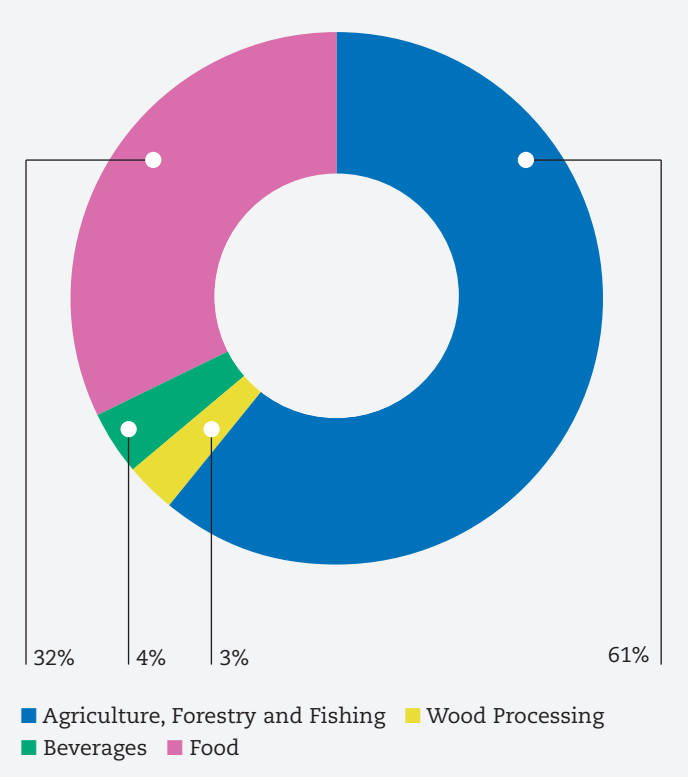

FIGURE 1: Composition of employment in the agri-food sector in 2019. Source: DAFM Fact Sheet on Irish Agriculture, September 2020 (assets.gov.ie/88632/eff46189-8124-4072-9526-c49f995833b9.pdf).

2. Shape and size of sector in 2027

Table 1: Overview of key Irish agri-food indicators.

	2010	2016	2019
Number of farms	139,860	137,500	N/A
Utilised agricultural area (UAA) excl. commonage and forestry (ha)	4,568,938	4,455,800	4,524,400
Commonage (ha)	422,215	427,800	N/A
Forestry (ha) – estimated	725,888	764,394	770,020*
Grassland as percentage of UAA	92%	92%	92%
Tillage as percentage of UAA	6%	6%	6%
Other as percentage of UAA	2%	2%	2%
Average farm size (ha)	32.7	32.4	N/A
Animal numbers by sector – dairy (cows only)	1.071m	1.398m	1.505m
Animal numbers by sector – beef (incl. dairy replacements)	5.536m	5.841m	5.704m
Animal numbers by sector – sheep (total)	4.745m	5.140m	5.146m
Animal numbers by sector – pigs (total)	1.516m	1.604m	1.616m
Animal numbers by sector – poultry (total)	10.925m	11.053m	N/A
Horticulture output value (Euro millions)	275	343	349

*Source: CSO Census of Agriculture 2010, Farm Structures Survey 2016 and June 2019 Crops and Livestock Survey. Forestry area based on data from the third National Forestry Inventory and annual afforestation data from the DAFM Forest Statistics 2020. *Data for 2019 based on the Eurostat European Forestry Accounts dataset [for_area_efa].*

All sectors

Across all sectors including food processing, there will be a continued trend towards increased standards and quality thresholds, as well as reduced use of resources. Producer organisations may play an important role in some sectors. The following sets out some anticipated developments across the main enterprises under the current policy framework.

Dairy:

- modest increase in the production of total kg milk solids;
- stability in growth of dairy cow numbers, some change from beef to dairy; and,
- increased emphasis on the quality of beef output from dairy herd.

Beef:

- improved efficiency in sucker beef production;
- some movement from suckler cow beef towards dairy calf to beef; and,
- potential for growth of beef producer organisations and niche markets.

Sheep:

- regional switch from beef to sheep; and,
- focused actions in the uplands to optimise grazing intensity, animal performance and environmental outcomes.

Crops:

- increased focus on higher-value markets and crops;
- increased diversification including protein crop production and other food/non-food crops as they emerge; and,
- production systems dependant on improved breeding.

Horticulture:

- some increased demand expected for plant-based nutrition; and,
- continued consolidation and specialisation in growers/supply chains and increased uptake of labour-reducing technology.

Pigs and poultry:

- similar numbers of breeding stock, with some improvement in productivity; and,
- increased emphasis on reduced AMR and improved animal welfare.

Forestry/energy/non-food/bioeconomy:

- forestry and woodland areas will need to increase to meet national future energy production and GHG policy targets; and,
- land-based energy production and some non-food production opportunities are expected to emerge.

Food:

- continued focus on excellent food safety standards;
- production methods (from local farmhouse scale to multinational) will focus on increased energy efficiency, lower waste, development of novel by-products and reduced carbon emissions; and,
- new blended plant- and livestock-sourced proteins, as well as opportunities in bio-transformation/circular bioeconomy.

3. Technical performance

Table 2: Overview of selected land-based farm enterprises.

		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
Family farm income (FFI) per ha in euro	Dairy	1,098	1,090	1,171	1,104	1,210	1,181
	Cattle	351	312	307	330	373	363
	Sheep	429	382	337	362	392	374
	Tillage	554	517	487	493	559	592
		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
GHGs per ha	Dairy	8.3	8.4	8.6	8.8	9.0	9.2
	Cattle	4.3	4.4	4.3	4.4	4.5	4.6
	Sheep	3.7	3.7	3.6	3.7	3.7	3.0
	Tillage	2.4	2.7	2.7	2.6	2.5	2.4
		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
Nitrogen (N) balance per ha	Dairy	163.3	169.8	170.4	163.7	164.2	179.1
	Cattle	61.4	63.2	62.5	59.3	60.6	66.4
	Sheep	48.4	50.8	49.9	48.8	49.4	58.7
	Tillage	49.0	51.7	49.5	47.5	44.9	50.5
		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
N-use efficiency (NUE)	Dairy	21.9	21.4	22.3	23.7	24.5	23.3
	Cattle	21.6	21.3	21.5	23.7	24.5	22.7
	Sheep	28.0	26.8	28.1	29.7	31.0	28.5
	Tillage	61.6	61.1	64.5	66.3	68.3	64.7

Source: Teagasc Sustainability Report and National Farm Survey (NFS), three year rolling averages.
Note: Robust biodiversity and farmer health, wellbeing and safety indicators will in time, following peer review, be incorporated into this report.

4. Environmental and land use implications

The following sets out a number of environmental targets for 2027:

- reduce agricultural GHGs in line with the 2019 climate action plan (2030 target of 17.5-19MT CO2e);
- improve nutrient use efficiency;
- halt the decline in the proportion of high-status water bodies;
- increase the proportion of rivers achieving good or high status from 53% (EPA, 2019) to 60% in 2027; and,
- increase biodiversity in line with a range of targets for emerging CAP-funded environmental programmes that will build on initiatives such as the Green Low-carbon Agri-environment Scheme (GLAS), European Innovation Partnerships (EIP), etc.

5. Research, advisory and education actions

Teagasc is well positioned to work in partnership with all relevant agencies and industry and provide continued support to the Irish agri-food industry through the promotion of:

- high-quality targeted research programmes that meet the current and emerging needs of a sector heading into a new digital and circular bioeconomy era;
- modern education programmes that focus on the development of "transversal skills" and are a provided in an accessible format for a new "digital generation"; and,
- advisory programmes that support farm families to navigate their way through all the challenges they currently face, especially in the area of the environment.

Teagasc will also increase its efforts to lead the development of the Irish agriculture knowledge and

innovation systems (AKIS) for the benefit of public and private actors across the agri-food sector.
The implementation of the GHG and ammonia marginal abatement cost curves (MACCs) is key to the establishment of verifiably sustainable agricultural and food production systems in Ireland. Teagasc will lead on the implementation of the MACCs, as well as meeting the many other horizontal challenges facing agriculture under a new Signpost programme. This will help all farmers across all enterprises reduce their carbon and ammonia footprints and improve the sustainability of their farms as appropriate to their individual resources and circumstances. It will be important for individual farmers to improve their production efficiency and implement actions that will improve sequestration.
Across all its activities, Teagasc plans to make significant advances in its use of digital tools and large data sets to plan, manage and implement its programmes, through the promotion of the use of eProfit Monitor, NMP online and PastureBase Ireland. It will also continue to partner with organisations such as the Irish Cattle Breeding Federation (ICBF) and the Department of Agriculture, Food and the Marine (DAFM) around the use of large national data sets to support local farm management decisions.

6. Comment

Since its emergence from the quota era, the overall Irish agriculture and food sector has modernised and developed at a modest scale. The dairy industry has had the greatest impact across a wide range of metrics.
Overall, the agri-food sector is well positioned to supply high-quality food to adjacent and global markets from a sound environmental platform. Producers have shown that they are resilient and can be responsive to market and policy signals where they are timely and consistent.
The modest income and ageing population involved in agriculture is a cause of concern, especially in the drystock sector, as it will limit access to capital and adoption of technology.
However, in general, Irish farms do not carry the burden of high long-term debt (sometimes related to succession) in comparison to other countries. Agriculture will thrive best in a future environment where a cohort of highly educated professional farmers can advance their businesses to generate an income that is comparable to other careers.
This will ensure that the sector will attract highly educated young people towards a farming career and within the sector, there will be capacity to reinvest in and adopt new digital and automation technologies.
Supporting a further cohort of part-time farmers who can supplement farm income by "working from home" will also be key to having a dynamic future modern agriculture open to new aspects of diversification and will enhance rural communities.
Ireland has strong heritage, knowledge and commitment to agriculture across many generations. Ensuring the sector is attractive to well-educated and ambitious young people and supported by strong and dynamic AKIS will be key to its longer-term development and success.

7. Contact

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8. Further Information

Teagasc has published nine new Road Maps (www.teagasc.ie) looking forward to 2027, which cover the areas of:

Environment	**Food**	**Pigs**
Forestry	**Sheep**	**Horticulture**
Beef	**Tillage**	**Dairy**

The Road Maps include: market and policy issues; potential shape and size of the sectors in 2027; environmental and land use implications; and, research, advisory and education actions. The Road Maps are a "best estimate projection" of where each sector is headed based on the current known mix of economic, social and policy drivers.

References

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6. DAFM Annual Review and Outlook 2020. Available from: https://assets.gov.ie/97319/29e7dd98-012d-40f6-beb9-506e190a8d45.pdf.