



Mapping the Food System across the Republic of Ireland and Northern Ireland

A Report for the Co-Centre for Sustainable
Food Systems Programme

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COCENTRE
Sustainable
Food Systems



Required citation:

Gilmour, A., Zhang, J., Ingram, J. & Zurek, M. (2026). Mapping the Food System across the Republic of Ireland and Northern Ireland. Environmental Change Institute, University of Oxford, Oxford.

Contributions

Alice Gilmour led the drafting and production of the report, including the development and application of the *Food Co-Centre Conceptual Framework* and *Food Co-Centre Sustainability Compass*. Alice identified and collated data sources, conducted the analysis and interpretation, produced the figures and carried out overall synthesis of the report. Jing Zhang initiated the development of the food system outcomes-related data framework, including metrics identification and data collation, as well as providing methodological guidance and contributed to comments and revisions during the report review process. John Ingram and Monika Zurek provided oversight, reviewed comments and strategic input throughout the development of the report. All authors reviewed and approved the final report.

Acknowledgements

The authors would like to thank our *Co-Centre for Sustainable Food Systems* colleagues for their support with this report. This publication has emanated from research conducted with the financial support of Research Ireland, Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA) and UK Research and Innovation (UKRI) via the International Science Partnerships Fund (ISPF) under Grant numbers 22/CC/11147 (RI and DAERA) and BB/Y012909/1 (UKRI) at the *Co-Centre for Sustainable Food Systems*.



Foreward

The *Co-Centre for Sustainable Food Systems* is a large-scale research programme (2024-2029) aiming to position Ireland and the United Kingdom as global leaders in research and innovation in food systems for positive and sustainable change.

Evidence relating to the food system activities, drivers and outcomes across the Republic of Ireland (ROI) and Northern Ireland (NI) is typically fragmented across sectors, disciplines and jurisdictions. This report provides a baseline of the current status of the food system, presenting a synthesis of available data. The report is intended to support future research, policy development and practical interventions aimed at improving food system sustainability.

The report does not seek to compare performance between the ROI and NI; rather, noting the differences in population size and land mass, it provides an overview of the food system's sustainability status, highlighting its scale, complexities and key characteristics.

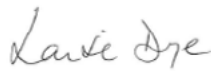
All reasonable efforts have been made to ensure the accuracy and reliability of the information contained within this publication. Responsibility for the interpretation and use of the material lies with the reader.

The ROI and NI are referred to throughout this report as 'jurisdictions' for consistency and clarity. The term 'island of Ireland' (IoI) is used in a geographical rather than geopolitical context to refer collectively to both jurisdictions. Terminology used throughout the report is not intended to convey political viewpoints.



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Abbreviations

AI:	Artificial intelligence	FSAI:	Food Safety Authority of Ireland (ROI)
AQIH:	Air Quality Index for Health	FSD:	Food Systems Dashboard
BMI:	Body Mass Index	g/day:	Grams per day
bn:	Billion	GB:	Great Britain
CO ₂ :	Carbon dioxide	GDPR:	General Data Protection Regulations
CSO:	Central Statistics Office (ROI)	GHG:	Greenhouse gas
CVD:	Cardiovascular disease	GHGe:	Greenhouse gas emissions
DAERA:	Department of Agriculture, Environment and Rural Affairs (NI)	GPS:	Global Positioning System
DAFM:	Department of Agriculture, Food and the Marine (ROI)	GVA:	Gross Value Added
DAQI:	Daily Air Quality Index	ha:	Hectare
EEZ:	Exclusive Economic Zone	HDSS:	Healthy Diets from Sustainable Sources
EFSA:	European Food Safety Authority	HFSS:	High Fat, Salt and Sugar
EPA:	Environmental Protection Agency (ROI)	HSA:	Health and Safety Authority (ROI)
EPLCA:	European Platform on Life Cycle Assessment	IBEC:	Irish Business and Employers Confederation (ROI)
ESDAC:	European Soil Data Centre	IFAC:	Irish Farm Accounts Co-operative
EU:	European Union	IFI:	Inland Fisheries Ireland (ROI)
FAO:	Food and Agriculture Organization of the United Nations	IoI:	island of Ireland
FFI:	Family Farm Income	ISPF:	International Science Partnerships Fund
FLW:	Food losses and waste	IT:	Information Technology
FSA:	Food Standards Agency (UK)	Ktoe:	Thousand tonnes of oil equivalent



m:	Million	RASFF:	Rapid Alerts System for Feed and Food
MtCO ₂ e:	Million tonnes of carbon dioxide equivalent	RNI:	Reference Nutrient Intake
NANS:	National Adult Nutrition Survey (ROI)	ROI:	Republic of Ireland
NCD:	Non-communicable Diseases	SFT:	Smart Farming Technologies
NDNS:	National Diet and Nutrition Survey (UK)	SME:	Small- and Medium-Sized Enterprise
NFFN:	Nature Friendly Farming Network (NI)	t:	Tonnes
NFS:	National Farm Survey (ROI)	tkm:	tonne-kilometre
NI:	Northern Ireland / Northern Irish	UK:	United Kingdom
NISRA:	Northern Ireland Statistics and Research Agency	UKRI:	UK Research and Innovation
NPP:	Net Primary Productivity	WRAP:	Waste Resources Action Programme (UK)
ONS:	Office for National Statistics (UK)		



Executive summary

This report maps and quantifies the food system across the Republic of Ireland (ROI) and Northern Ireland (NI) using a conceptual framework and compass which was co-developed with Irish and United Kingdom food system stakeholders. Current evidence related to the island of Ireland (IoI)'s food system activities, drivers and outcomes is often fragmented across jurisdictions, sectors and research disciplines. This mapping report provides baseline sustainability status data across a broad range of food system metrics, synthesising the most recently available evidence. Data are presented where available to illustrate the structure and characteristics of the food system across the two jurisdictions, where it must be noted that farming is a key food system activity, with beef and dairy production representing predominant activities in both jurisdictions. The report does not seek to compare performance between the ROI and NI; rather, noting the differences in population size and land mass, it provides an overview of the food system's sustainability status, highlighting its scale, complexities and key characteristics. The report is intended to support future research, policy development and practical interventions aimed at improving food system sustainability.

Report highlights

Ten major report highlights include:

1. The ROI exports food and drink to over 180 countries whereas NI exports to over 70 markets.
2. Total agri-food exports in the ROI are €18.1 billion (2025) and £5.1 billion in NI (2021), equivalent to approximately €3,365 and £2,684 per capita respectively.
3. Cross-border trade is substantial, with the ROI exporting €671 million of agri-food products to NI (3.7% of ROI exports) and importing €334 million worth of agri-food products from NI.
4. Agriculture accounts for approximately 65% of land use in the ROI and 76% in NI.
5. The ROI has 133,174 farms and NI has 25,834.
6. Whilst the ROI has 13.4% female farmholders, in NI it is 5.3%.
7. The poultry population is 26.8 million while the ROI has 17.1 million poultry. The cattle population in the ROI is 7.3 million and 1.6 million in NI.
8. Rates of overweight and obese adults are very similar in the ROI (66%) and NI (65%).
9. The agri-food sector is a major contributor to greenhouse gas emissions, accounting for 37.8% in the ROI and 30.8% in NI.
10. Peat covers 13.8% of the land surface in the ROI and 12% in NI. Peat holds around 53% of the IoI's carbon stock.



Report caveats

The following six caveats should be considered with respect to this report:

1. The ROI and NI differ substantially in geographic size, coastline length, population number and economic scale. Consequently, absolute figures (e.g., farm numbers, livestock populations, employment and export value) are often larger in the ROI and should be interpreted in the context of jurisdictional scale.
2. Due to differences in governance structures, data collection methods and reporting practices across the ROI and NI, some figures presented in this report should be interpreted as indicative of broader food system characteristics rather than exact equivalents between jurisdictions. The data are therefore intended to illustrate overall system patterns and characteristics rather than enable like-for-like comparison.
3. This report represents the status at a moment in time. Where available, recent data (typically from 2020 onwards) were prioritised, reflecting significant structural changes affecting the food system in recent years, including the COVID-19 pandemic, the Russo-Ukrainian war, conflicts in the Middle East and the associated cost-of-living crisis. Earlier data were used where more recent information was unavailable. Data were not always available in both jurisdictions, in which case figures for a single jurisdiction are reported.
4. The currency used in each jurisdiction is different. NI uses pound sterling (£) and the ROI uses euros (€). At the time of writing, the exchange rate is €1 = £0.87. Within this report unless the data presented standardises currency for direct comparison between values, be aware that different currencies are used.
5. Population characteristics differ across the ROI and NI, including age profile and socioeconomic composition. These differences may influence some reported figures.
6. Measurement and reporting of food intake data is inconsistent across the jurisdictions. Ongoing research by the *Co-Centre for Sustainable Food Systems*, including the household panel research will provide coherent data for future analyses.



Introduction

The purpose of this report is to map and quantify (where possible) food system activities, drivers and outcomes across the ROI and NI. The data collated presents a baseline status for the island of Ireland (Iol) food system, illustrating its breadth and complexity. Given the significant economic and demographic differences between the jurisdictions, the report is not intended as a comparative assessment of performance, but rather as a structured overview of food system characteristics across the Iol.

Why take a food systems approach?

The food system is highly complex. It encompasses the ‘farm to fork’ concept with activities ranging from producing to consuming. Core food system activities are supported by services and institutional frameworks covering logistics, energy, Information Technology (IT) and data infrastructure etcetera. Activities and their actors are influenced by the wider context of the environment (e.g., atmosphere, geosphere), society (e.g., consumption patterns, geopolitics) and economics (e.g., input prices, labour availability). Food system outcomes include population diets, environmental constraints, economic viability and equitable access.

This food security definition stemming from the *World Food Summit* in 1996 is aspirational:

// Food security exists when all people, at all times, have physical, economic and social access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. //¹

Although some areas of the ROI and NI food system are performing strongly – for example, producing a surplus of animal protein² and economically thriving in the dairy and beef sector – these successes exist alongside a range of environmental, health and socioeconomic challenges. Therefore, integrated food systems research is increasingly necessary, as any practical or policy intervention seeking to transform the food system must consider not only the intended results but also consequential synergies (benefits) or trade-offs (unintended consequences). Systems thinking involves considering the food system in its totality, including its interactions with the wider environment and the relationships or interactions between constituent parts.



The food system in the ROI and NI

The Iol includes the ROI population of 5.44 million (m) and the NI population of 1.93m. However, whilst both jurisdictions are, to a large extent, performing strongly, both are highly reliant on external markets for imported foods as well as on cross-border trade.^{3,4} For instance, food and live animals account for 34% of all NI exports which are imported into the ROI.⁵ The ROI's open, export-oriented agri-food model is key to their economic success and its traditional reliance on the United Kingdom (UK) food system was highlighted as a significant issue following the UK's European Union (EU) exit.^{a,6} To mitigate this and expand on global trade markets, the Irish government published a *Government Action Plan on Market Diversification* to deepen and expand investment in existing and high potential markets.⁷

Recognising the importance of the food system to economic outputs for both countries and the inter-connected food systems challenges (environmental concerns, link between food and health and societal inequalities) facing the food system, respective government bodies have published the following strategies:

- i. Food Vision 2030 (ROI);⁸
- ii. Northern Ireland Food Strategy Framework;⁹
- iii. The National Food Strategy (UK).¹⁰

These documents report on the sub-optimal status of the current food systems outcomes for health, the environment and other societal goals in addition to proposing ways in which the system can be improved for people, planet and profit (for more information, see 'Governance' in section 2.2).

The Co-Centre for Sustainable Food Systems

The *Co-Centre for Sustainable Food Systems* is a large-scale research programme (2024–2030) aiming to position Ireland and the UK as global leaders in research and innovation in food systems for positive and sustainable change.¹¹ The Co-Centre's vision is:

To drive innovative, transformative solutions that foster healthier diets and deliver significant improvements in environmental, economic, safety and equity outcomes in food systems by 2050.

To establish Ireland and the UK as global research and innovation leaders in food systems, setting a benchmark for positive, lasting change.

The Co-Centre has received £32m/€35m funding over a six-year period from: *Research Ireland*, NI's *Department of Agriculture, Environment and Rural Affairs (DAERA)* and *UK Research and Innovation (UKRI)* via the *International Science Partnerships Fund (ISPF)*.

^a EU exit ~ Brexit.



Food systems conceptual framework

To demonstrate the breadth and depth of the food system, numerous conceptual models of varying complexity have been published for use across a multitude of different purposes. The *Food Co-Centre Conceptual Framework*¹² was created to encompass all important considerations for the Irish and UK food system (Figure 1). It sets a clear **boundary** as to what is most relevant for this geographic context and aims to create **mutual understanding** with simple language which aids in **communication**. Further, it displays the **connections** between components, which supports taking a systems rather than a disciplinary or siloed approach. The framework helps with **gap identification** to show where more research is needed and is used here in this document as a tool to comprehensively identify data and metrics pertaining to a **baseline assessment** of the IoI's current food system sustainability status.

Figure 1 notes

The Food Co-Centre Conceptual Framework is intended to be used iteratively and is non-hierarchical: consideration of the food system can begin or end anywhere in the framework. The central 'food system core activities' box contains a linear food value chain (producing to consuming) and the flow of food and other associated activities may enter 'managing waste & surplus food' before re-joining the food value chain. Supporting services & institutional environment' comprises energy, water, transport, communications, IT, data infrastructure, logistics & packaging and the civil service.

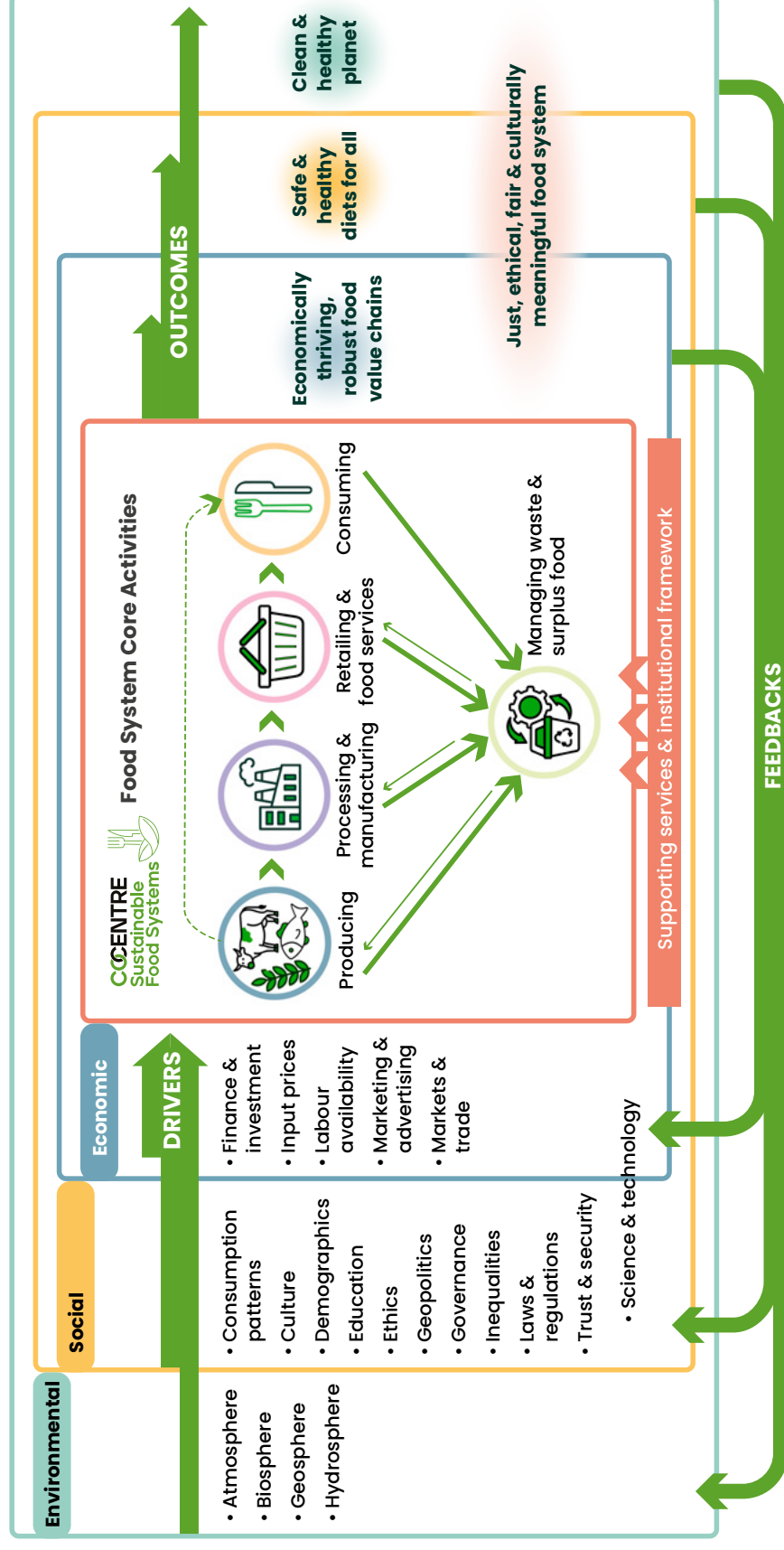
The conceptual framework acknowledges that in reality connections in the food system are non-linear. The wider context of environment (green), social (yellow) and economics (blue) affect the food system core activities. Drivers do not operate independently of each other and although the driver words are listed,^b they should be regarded as interacting. The influence of a particular driver or combination of drivers fluctuates depending on circumstances and may be more powerful in influencing the food system activities than at another time.

Outcome words are normative in order to indicate the goal of a particular food system outcome and to map tightly to the Co-Centre vision statement. Feedback and feedforward arrows show interrelationships between components and are vital for analysing the complexities of the food system.¹²

^b See Table 2 in Section 2 for examples of each driver.



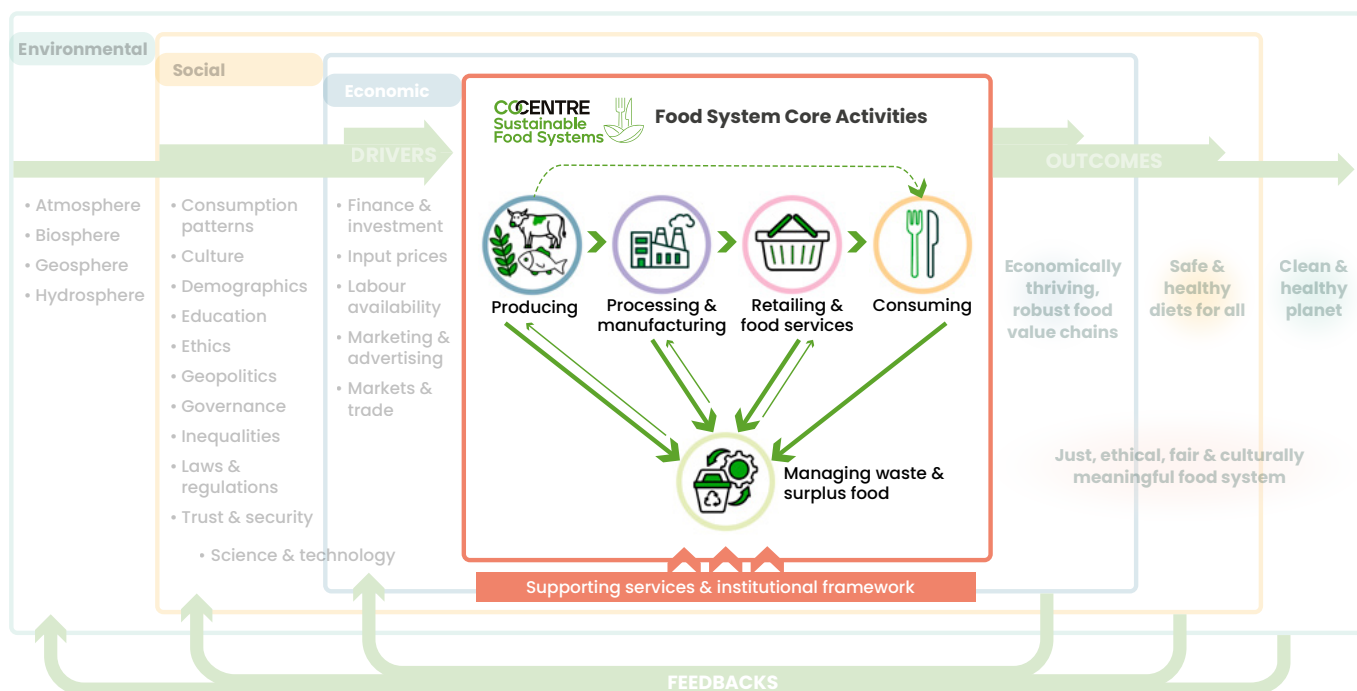
Figure 1: Food Co-Centre Conceptual Framework (2025)



Section 1: Food system core activities

At the centre of the conceptual framework sits the ‘food system core activities’ (Figure 2):

Figure 2: Food Co-Centre Conceptual Framework (2025) – Core Activities



This section of the report begins by detailing the number of people employed across the ROI and NI food system as well as the number of food sector related enterprises in each jurisdiction. Each area of the core activities (producing, processing & manufacturing, retailing & food services, consuming, managing waste & surplus food as well as supporting services & institutional framework) is then described and quantified, where possible.

Disaggregated data for individual food system activities is limited, particularly in relation to the number employed in the wider food system (aside from ‘agriculture’) and logistics data specific to the food system is unavailable. In addition, it should be acknowledged that on many smaller farms,^c the farmer and their family may have a second job that is their primary income source.

^c Please note, there is no formal definition of ‘small farm.’

Number of people employed in the ROI and NI food system

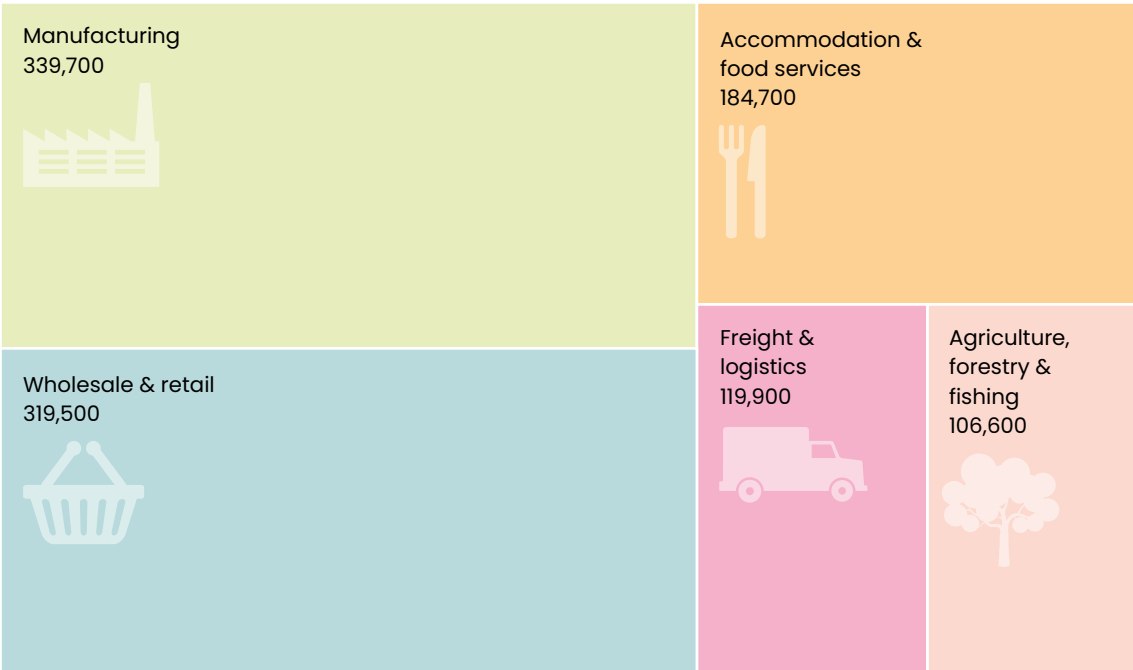
The numbers shown are the number of people directly involved in the given activity and are not inclusive of employees in supporting activities such as policymaking or external research and development organisations. Further, each food system activity will have its own non-food supply chain, which is not considered in this report.

In 2024, the *Department of Agriculture, Food and Marine* (DAFM) stated there were around 169,300 people employed across the agri-food sector, which is now approximately 7% of the national workforce.¹³

// In the ROI, approximately 7% of the workforce is employed across the agri-food sector //¹³

Employment data for the ROI food system was obtained using data from the 2025 *Central Statistics Office (CSO) Labour Force Survey*, using NACE^d Rev. 2 sector classifications to capture individuals working within the food system beyond those classified in agriculture. These were aligned to NI SIC-based sectors at an aggregated level to enable like-for-like evaluation.¹⁴ Figure 3^e illustrates that food system employment in the ROI extends beyond primary agriculture, with substantial employment across manufacturing, wholesale & retail and food service activities:

Figure 3: The number of people employed in the ROI food system (2025)

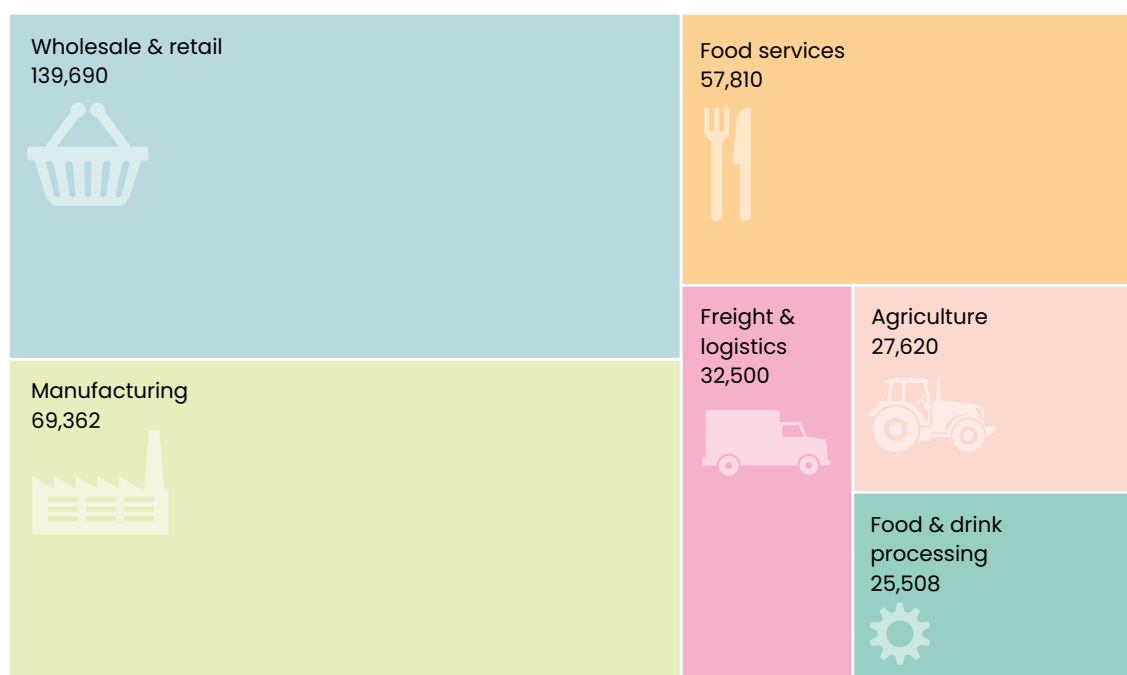


d NACE data refers to the Statistical Classification of Economic Activities in the European Community.
e 'Manufacturing' includes food as well as mining, electricity and water; 'Wholesale & retail' includes food as well as motor vehicle trade. Disaggregated data is unavailable.

Figures across these two sources (DAFM and CSO), do not fully align due to differing classifications. For example, the aforementioned DAFM report states that 6,300 people are employed in forestry and fishing but this number is included within the 'agriculture, forestry & fishing' number within the CSO report.^{13, 14} Another caveat is that 'wholesale & retail' include motor vehicle trade in line with standard NACE classifications. Further, CSO has grouped mining, manufacturing, electricity and water into one number for their industry quantification, meaning that the number presented here for 'manufacturing'² is overestimated when considering only the food system.

Figure 4 presents the number of people employed across the NI food system, presented in the same manner as per Figure 3. The numbers have been garnered from the NI *Skills Barometer* report, *Invest NI* and the *Northern Ireland Statistics and Research Agency* (NISRA):^f

Figure 4: The number of people employed in the NI food system



The NI *Skills Barometer* report shows the total number of jobs (920,000) across NI at 2023 as baseline. Sectors relevant to the food system were extracted from this report. Whilst the *Barometer* report states 94,870 are employed in the manufacturing industry, the food and drink processing figure (25,508) was removed from this as NISRA data separates this value for the number of direct full-time equivalent employees in this sector.^{2, 15} Additionally, the number of agricultural jobs (27,620) in Figure 4 represents paid farm employees and supporting agriculture sector paid employees. However, it does not include farmers, directors and their families.

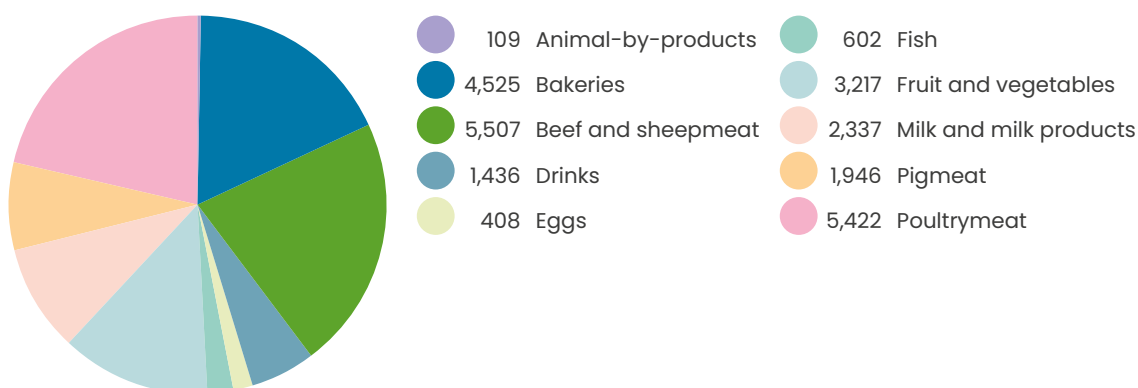
^f Please note that data from 2023 and 2025 have been merged to create Figure 4, so it should not be treated as an accurate representation of a moment in time.

The total number of farm workers in 2025 was 51,868. This is made up of farmers, partners, directors and spouses (79%) and other farm workers (21%).¹⁶ This number (51,868–27,620=24,248) is not represented in the above figure as it is not known whether these individuals are employed in another sector such as food and drink processing or food services.

// In NI, agriculture, food and drink processing and food services make up 12% of employment //⁹

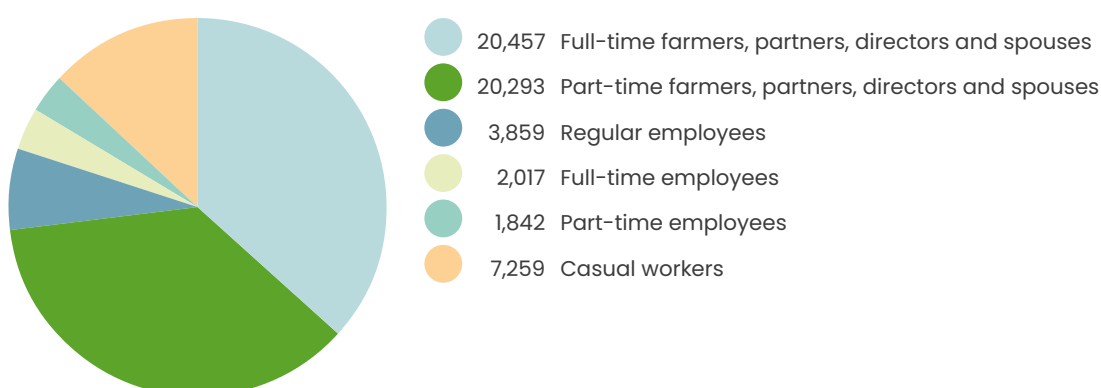
NI's *Food and Drinks Processing Report 2022*^h states that the food and drink processing sector in NI grew slightly across most sub-sectors from 2021 to 2022. This report shows that beef and sheepmeat, poultrymeat and bakeries are the largest employers (Figure 5):¹⁷

Figure 5: NI full-time equivalent employees by subsector (2022)



Casual workers currently make up approximately 14% of the agricultural workforce in NI.¹⁸ This pie chart presents NI agricultural workforce data from NISRA in 2025 (Figure 6):¹⁶

Figure 6: NI agricultural workforce (2025)



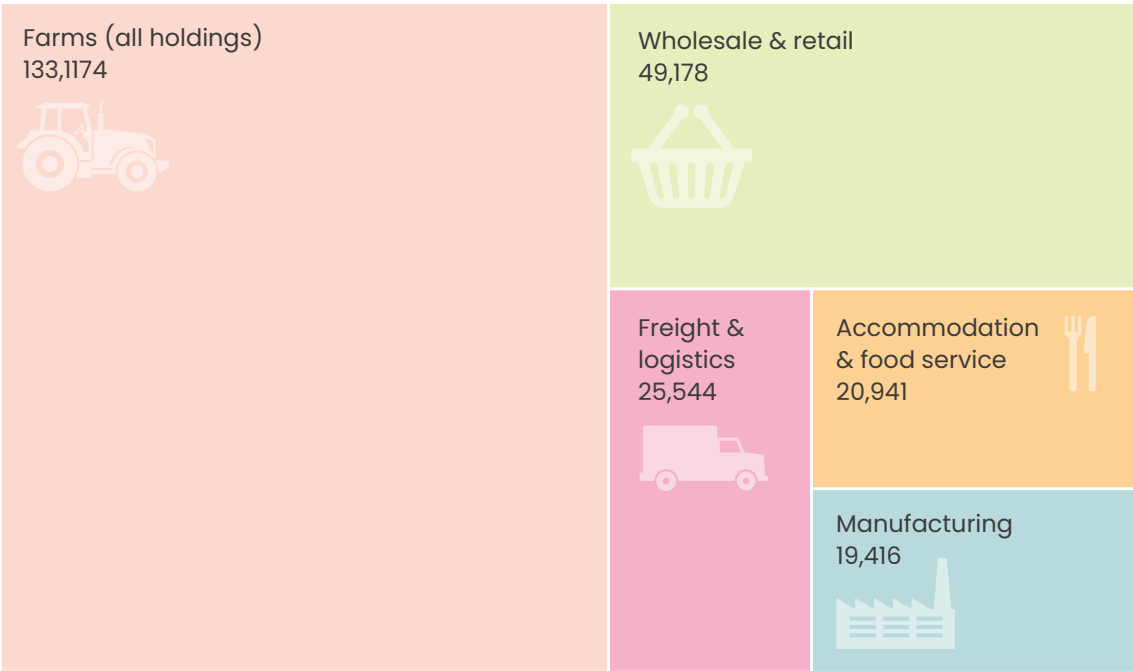
g Agriculture (27,620) + food and drinks processing (25,000) + food services (57,810) = 110,430 ÷ 920,000 = 0.12.

h NI's *Food and Drinks Processing Report 2022* does not include firms with fewer than 250 employees and no SME food and drink processing and manufacturing data could be identified.

Number of enterprises in the ROI and NI food system

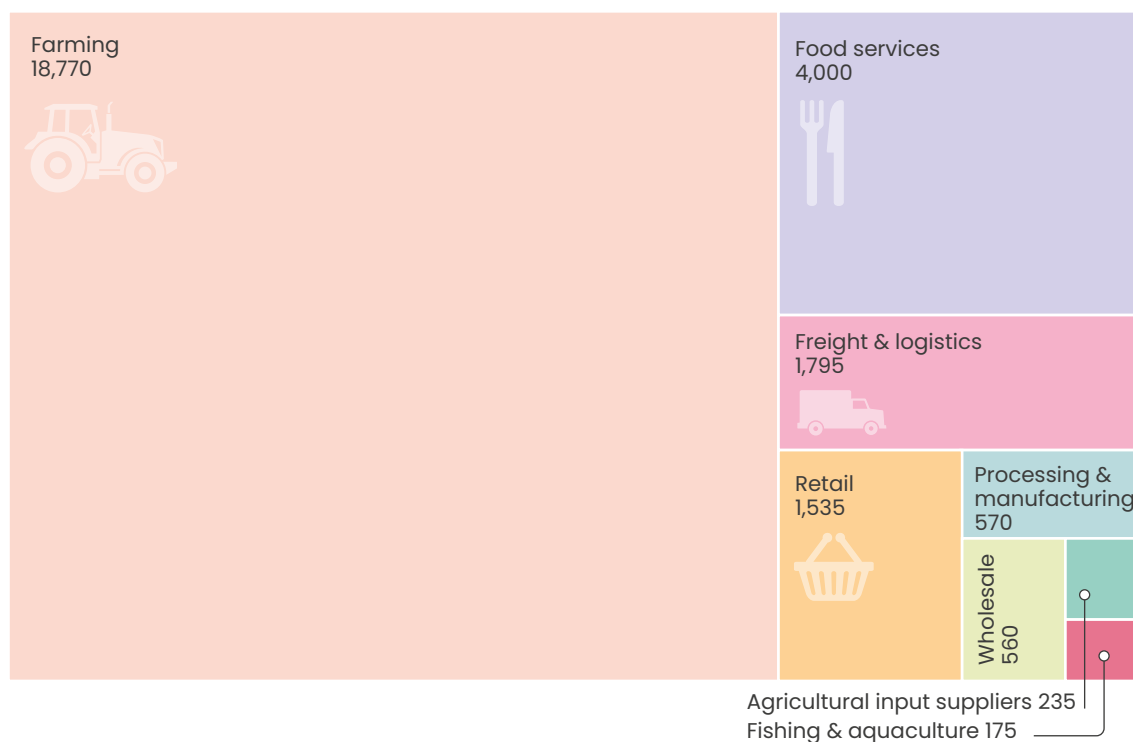
ROI enterpriseⁱ data includes CSO 2023 agriculture in business demography statistics¹⁴ and farm numbers from the CSO 2023 *Farm Structure Survey*¹⁹ are used as a proxy for agricultural enterprises. Additionally, farm numbers are not directly comparable to business demography enterprise counts. This means that the ROI and NI data are not standardisable. Figure 7 presents the number of enterprises by food system activity:^{14, 19}

Figure 7: The number of enterprises by food system activity in the ROI (2023)



According to *Nomis Official Census and Labour Market Statistics* from the Office for National Statistics (ONS), there are 27,640 enterprises engaged in food system activities across NI. Figure 8 displays the number of enterprises by food system activity in NI:²⁰

i Enterprise: Business organisation or company.

Figure 8: The number of enterprises by food system activity in NI (2025)

// In NI, 68% of food system enterprises are farms //^j

Collectively, the above figures have demonstrated how employment and enterprise activity are distributed across food system activities in the ROI and NI. Please note, farm numbers are not directly comparable to business demography enterprise counts. This means that the ROI and NI data are not standardisable.

Producing

The ROI **land mass** is approximately 6,900,000 hectares and around 65% (4,500,000 hectares (ha)) of land is used for agriculture.^{6, 21} NI's land mass is roughly 1,356,000 hectares, with about 76% (1,032,296ha) used for agriculture.²² No exact figure for **average farm size** in NI could be identified, but a rough official estimate is 30 to 40ha.¹⁶ In the ROI, the average farm is 34.7ha.²³ In NI, 79% of farms are considered 'very small' although the definition is unclear (i.e. small by land area, income, labour or livestock).²² Equivalent data for the ROI could not be located. According to CSO data in 2023, there were 133,174 farms in the ROI and NISRA's 2025 *Agricultural Census* counted 25,834 farms in NI^{16, 24} (Figure 9):

^j Farms (18,700) ÷ by total number of enterprises (27,640) = 0.6765.



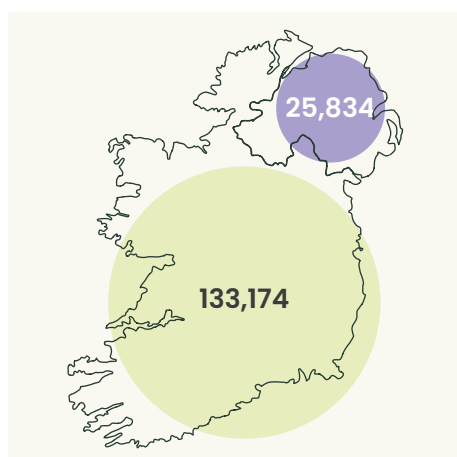
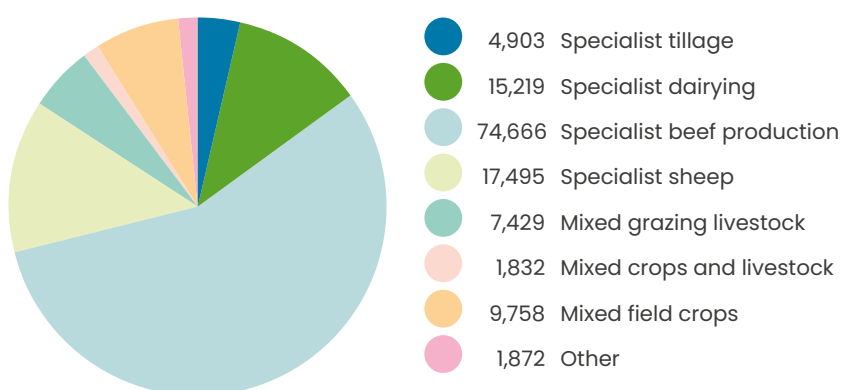


Figure 9: The number of farms across the ROI (2023) and NI (2025)

In 2023, 498,000ha of land was farmed **organically** in the UK, 1.4% (6,972ha) of which were based in NI.²⁵ In the same year, there were 4,168 organic farms in the ROI (3.1% farms). Of these, the majority (55%) were beef and 1.4% (103,684) of all cattle in the ROI were farmed organically. The largest proportion of animals farmed organically in the ROI is sheep at 8.9% (495,743).²⁶

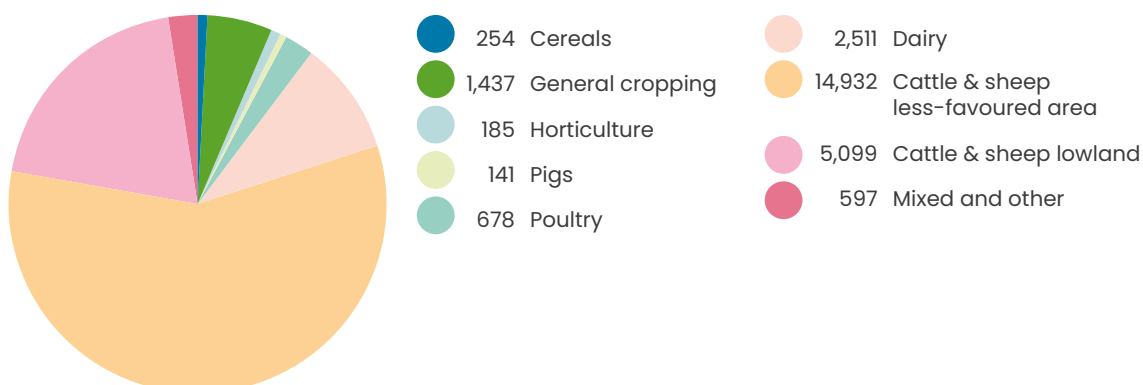
The vast majority (56%) of all farms in the ROI involve specialist beef production.^k Figure 10 shows the quantity of farms by farm type in the ROI:²³

Figure 10: ROI number of farms by farm type (2023)

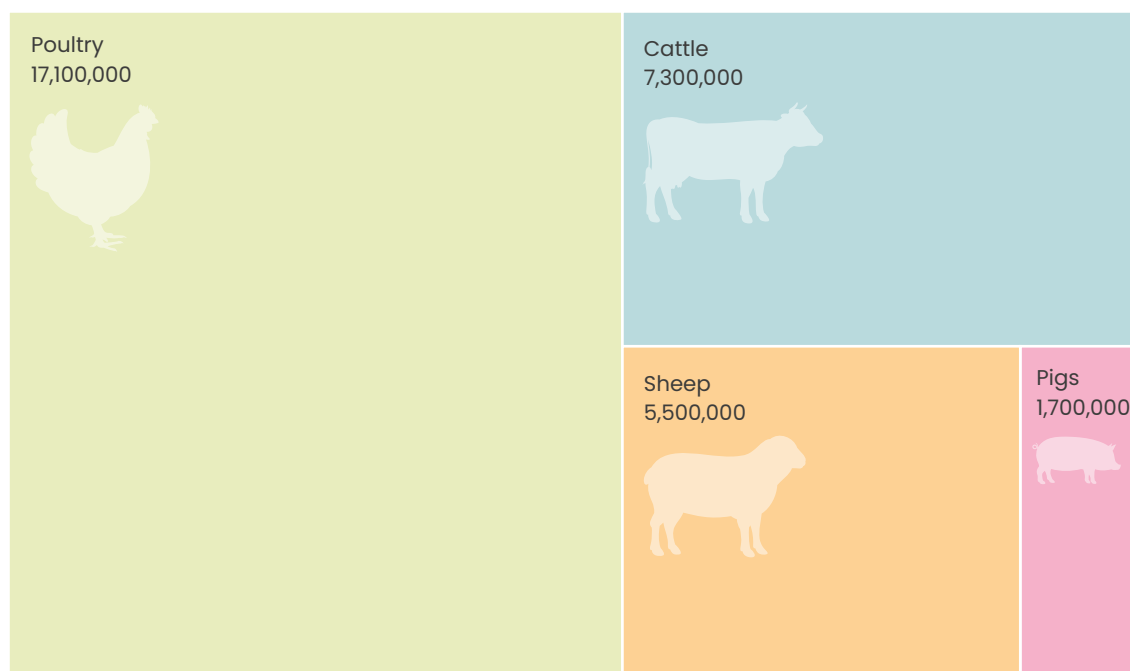


The categorisation of farm types in NI is slightly different because beef and dairying are not presented as separate figures as they are in the ROI data (Figure 10). The largest proportion of farms in NI are cattle and sheep farmed on less-favoured areas (n=14,932) (Figure 11):¹⁶

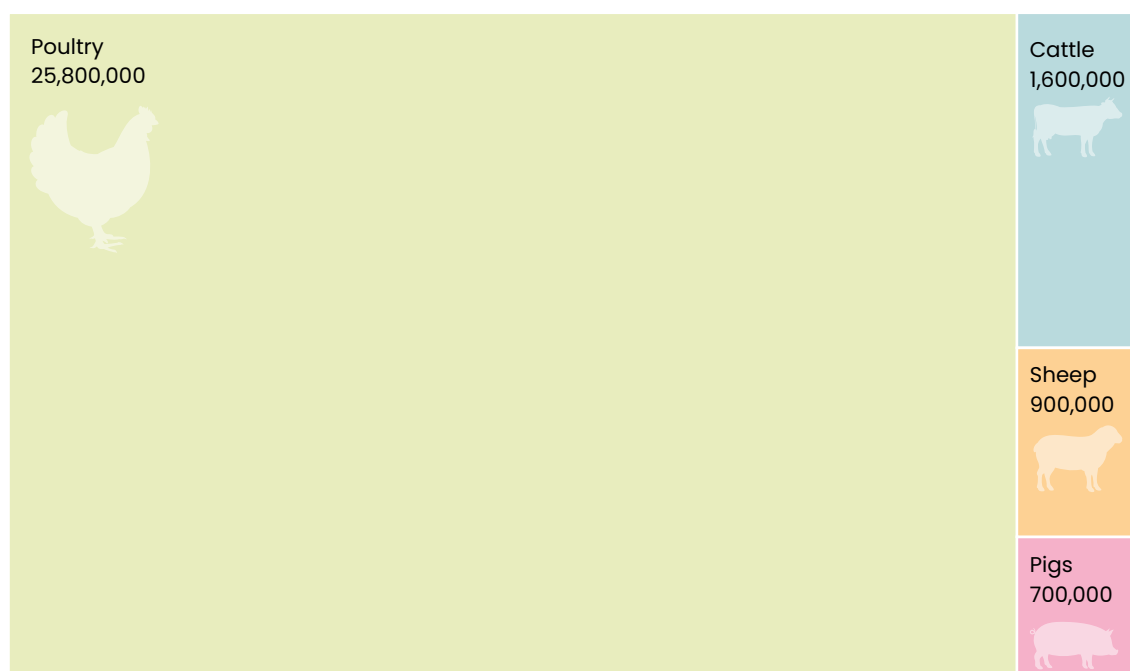
^k Production is dedicated to breeding, rearing and finishing cattle for meat. The majority of the farm's effort is on beef as an output.

Figure 11: NI number of farms by farm type (2025)

The wet climate and mild temperatures moderated by the Gulf Stream provide ideal conditions for grass-based livestock agriculture.¹³ Beef and dairy cattle make up a large proportion of livestock numbers. CSO figures from 2023 state that there were 5,959 farms with poultry and a total of 17.1m birds in the ROI. Around 2.75m were laying stock and 12.7m were table stock with the rest being used for other purposes or breeding. Figures 12 and 13 show the number and relative proportion, of livestock¹ in the ROI and NI:^{16, 23}

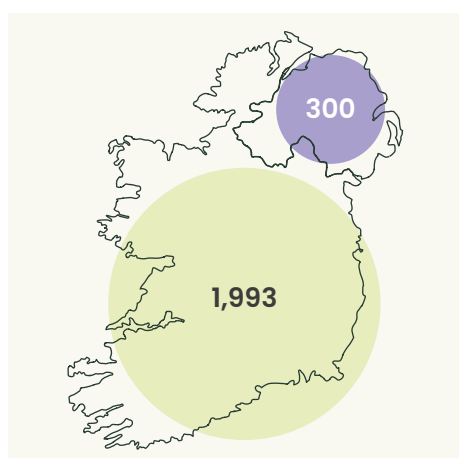
Figure 12: ROI number of livestock (2023)

¹ Note, these figures show the number of livestock rather than the mass in tonnes or the economic value of the livestock.

Figure 13: NI number of livestock (2025)

Marine territory is known as the 'Exclusive Economic Zone' (EEZ). The EEZ of the ROI is approximately 880,000 km², roughly ten times greater than the landmass of the ROI.²⁷ NI's EEZ is part of the UK's EEZ; though, specific to NI, there is an *Adjacent Waters Boundaries (Northern Ireland) (Amendment) Order 2020* which is depicted as a line around NI between Scotland, Isle of Man and the rest of the UK.²⁸

Of note, the ROI has a longer coastline than NI and this may explain why fishing and aquaculture numbers are substantially larger in the ROI compared to NI. Surveys from 2023 calculated the number of fishing vessels in the ROI and NI (Figure 14).^{29, 30} Additionally, Figure 15 also shows the number of direct fishing employees for each jurisdiction.^{29, 31}

**Figure 14:** Number of fishing fleet in the Iol (2023)

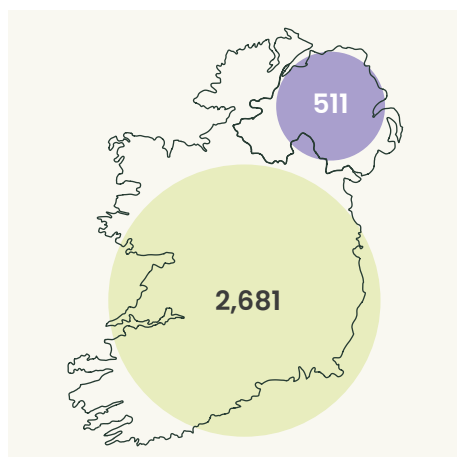


Figure 15: Direct fishing employees in the ROI (2025) and NI (2023)

Processing & manufacturing

// The 'methods that transform raw ingredients into edible, safe and stable food products, from simple home cooking to large-scale industrial production' //³²

The processing and manufacturing sector aims to add value to primary agricultural outputs by transforming raw materials into products suitable for distribution, retailing, food service and consumption. The food and drink processing sector in the ROI is the largest indigenous manufacturing industry, turning over €29.5 billion (bn) annually.³³ The sector comprises a mix of small- and medium-sized enterprises (SMEs), larger-scale processors and multinationals, organised around key subsectors such as dairy, meat and beverages. In the ROI in 2024, there were 2,150 SME food product manufacturing enterprises.^{34, 35}

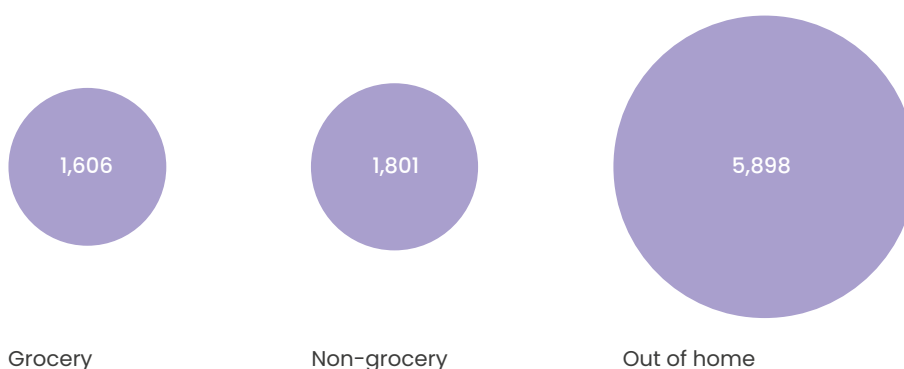
A small-scale survey conducted by IBEC^m found that amongst ROI food and drink manufacturers, major challenges include the cost of labour (19%) and availability of materials (14%) which impacts profitability for 48% of respondents.³⁵ Similar up-to-date data for NI was unavailable.

^m IBEC was formerly known as the Irish Business and Employers Confederation. IBEC represents businesses in the ROI, lobbying and representing members' interests.

Retailing & food services

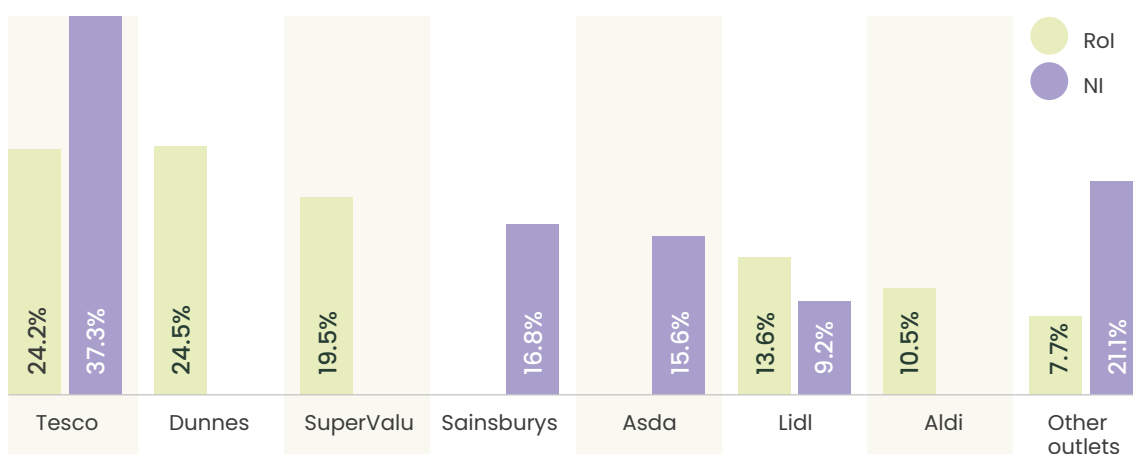
Research by the *Food Standards Agency* (FSA) has mapped the food retail and out of home (OoH) sector in NI. Figure 16 presents this mapping work:³⁶

Figure 16: NI number of food retail and out of home business premises



In terms of grocery market share, this differs widely between the ROI and NI. *ALDI* stores are in the ROI, not in NI. *Sainsbury's* and *ASDA* stores are in NI, not in the ROI. *Dunnes* and *SuperValu* are significant domestic players in the ROI whereas *Tesco* dominates the NI grocery market.³⁷ Figure 17 shows percentage grocery market share:³⁷

Figure 17: Percentage grocery market share across the ROI and NI (2026)



Convenience stores also have a significant presence, these include Musgrave: *Centra*, *Daybreak*; BWG Foods: *Spar*, *Londis*, *Mace*; Petrol forecourts: *Circle K*, *Applegreen*, *Maxol*; Independent operators: *Gala*, *Costcutter*.

Food service includes workplaces, hospitals, coffee shops, pubs, hotels and restaurants. Recent research by *Bord Bia* indicates that the food service industry across the ROI has increased by 5.2% in value (measured in consumer spending) since 2020. As mentioned previously, the ROI population is approximately three times larger than that of NI. This is reflected in the differences in value of the food service industry across both jurisdictions (Figure 18).³⁸

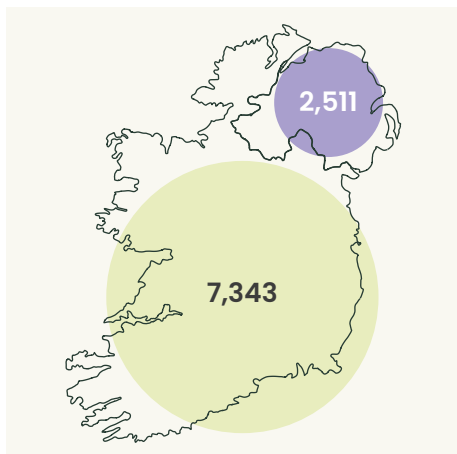


Figure 18: Value (€m) of the food service industry across the ROI and NI (2024)

In the ROI in 2020, there were 15,370 active food and beverage service enterprises, 99.8% of which were SMEs.³⁹

Whilst there are large numbers, concern about viability of many businesses is evident. Research conducted in 2025 found that 27% of **hospitality businesses** in NI were operating at a financial loss and 20% were breaking even.⁴⁰ During the first quarter of 2025, 150 restaurants in the ROI closed, predominantly due to soaring business costs.⁴¹

Consuming

Consumption represents the final stage within the ‘food system core activities.’ This activity links food environments and supply chains to food intake which link to health and nutritional outcomes (see Sections, 2.2 and 3.1.).

Managing waste & surplus food

Unavoidable food waste includes fruit and vegetable peel, bones and animal tissue.⁴² Current legislation states that this should be separated from mixed general waste going to landfill so that it can be composted or broken down via anaerobic digestion.⁴³ For the ROI, European waste legislation has mandated separate collection of biowaste since the beginning of 2024.⁴⁴

In NI, the *Food Waste Regulations (Northern Ireland) 2015* are the primary legislation for food waste, stating that district councils must provide food waste collection service for households and businesses producing more than 5kg of food waste per week must separate it and arrange a separate collection. In NI, most Local Authorities provide households with a service for collecting food waste.⁴⁵



The ROI government published the *National Food Waste Prevention Roadmap* in 2022, strategising how to halve food waste by 2030. The report explains that **food redistribution** may take place when food businesses have trouble managing supply and demand, so end up with a surplus.⁴⁶ Surplus food can be redistributed or donated by food businesses to charities as long as the food is still within an acceptable condition. In 2024, one such charity *FoodCloud*ⁿ in the ROI redistributed a total of 3,896 tonnes of food donated from 195 Irish food producers, distributors and retailers. This food was donated to 674 community groups across the ROI⁴⁷.

Fare Share is a UK-wide charity and its website states that the NI warehouse has been operating successfully for over 14 years and last year^o redistributed 727 tonnes of food across 172 charitable projects. This was equivalent to 1.7m meals.⁴⁸ The *Trussell Trust* operates 23 food banks in NI, distributing across 50 locations. In 2025, 67,851 food parcels were distributed.⁴⁹

Outside structured recycling activities provided by government and within organisations such as those listed above, there is also growing interest within broader society at an individual and community level to reduce food waste. This is evident in the growth of mobile applications (Apps) for accessing surplus food across the Iol. These include *Too Good To Go*, *Olio*, *FoodCloud*, *Foodiverse*, *Bockety Box*. These platforms allow the user to identify discounted or free food available in their area. Since *Too Good To Go*'s launch in the ROI in 2021, over two million 'Surprised Bags' have been saved and over 2,000 businesses are now engaged in the app.⁵⁰

Supporting services & institutional environment

Within the food system, like other value chains, 'Supporting services & institutional environment' comprises energy, water, transport, communications, IT, data infrastructure, logistics & packaging and the civil service.

Logistics

Data pertaining specifically to logistics across the food system were unavailable for across the Iol. CSO reporting from 2017–2025 states that over 90% of the ROI's trade by volume moves through its **ports**. There are eight commercial ports and Dublin Port handles around 50% of maritime tonnage (~630,540t).⁵¹

Older CSO data from 2019 shows that 159,414,000 tonnes were carried via road freight transport in the ROI. In terms of tkm,^p this was 12,403,000,000 tkm. This pie chart shows the agri-food related transport proportionate to this overall figure (Figure 19):⁵²

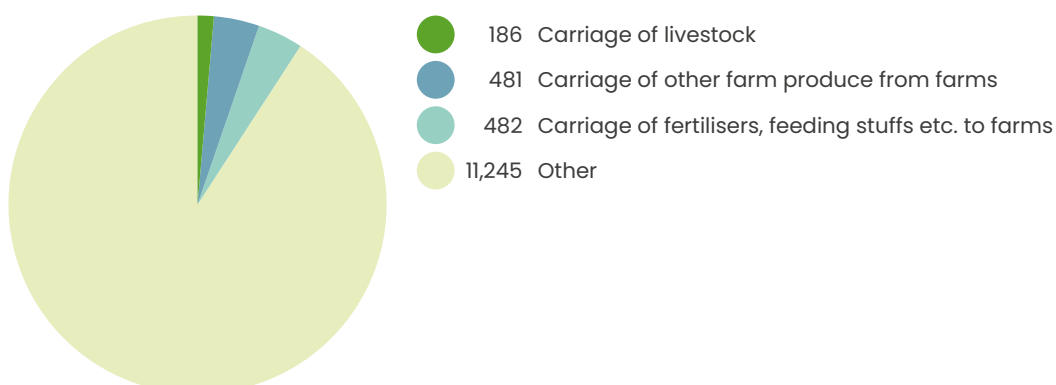
n FoodCloud is a not-for-profit social enterprise that was founded in 2012. The charity tackles both food waste and food insecurity.

o No publication date on the site could be found so it is unclear what year 'last year' refers to.

p A tonne-kilometre (tkm) is a unit of measurement for freight transportation, representing the transport of one tonne of goods over the distance of one kilometre.



Figure 19: ROI road freight transport activity classified by main type of work and main use of the vehicle (2019)



In terms of road freight transport activity classified by the group of foods and main use of vehicle in the ROI in 2019, 'foodstuffs' was 24.4% (3,024m tkm). The mode of transport used for freight in the ROI is largely road, with a very small amount of rail freight.⁵² In the ROI, there is high interest in using hydrogen to decarbonise heavy-duty transport.⁵³ No similar data for NI could be found.

Storage

The warehousing and storage industry statistics for the ROI are not publicly available⁵⁴ and data for NI could not be identified.

Cold storage is required for meat, poultry, dairy, prepared fruits and vegetables as well as prepared refrigerated and frozen meal components. *Americold* provides cold storage from production to consumption focusing on the food system and is the largest provider of cold storage pallets across the IoI. There is one facility in NI and three facilities in the ROI. Figure 20 shows the number of Americold storage pallets across the IoI.⁵⁵

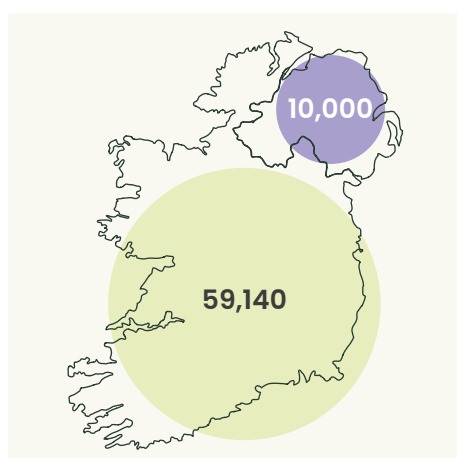


Figure 20: Number of Americold storage pallets across the IoI (n.d.)

Whilst details of the content of the pallets is not given, one can assume a large proportion of these is food stuffs.

Civil service or supporting bodies

There are many civil service and supporting bodies engaged in the food system. Also, local authorities and/or district councils play a key enforcement role in both jurisdictions. Table 1 shows civil service and supporting bodies for both the ROI and NI, categorised by agricultural department, consumer and regulatory, industry, science and the environment. The bottom row presents cross-border organisations:

Table 1: Civil service or supporting bodies in the ROI and NI

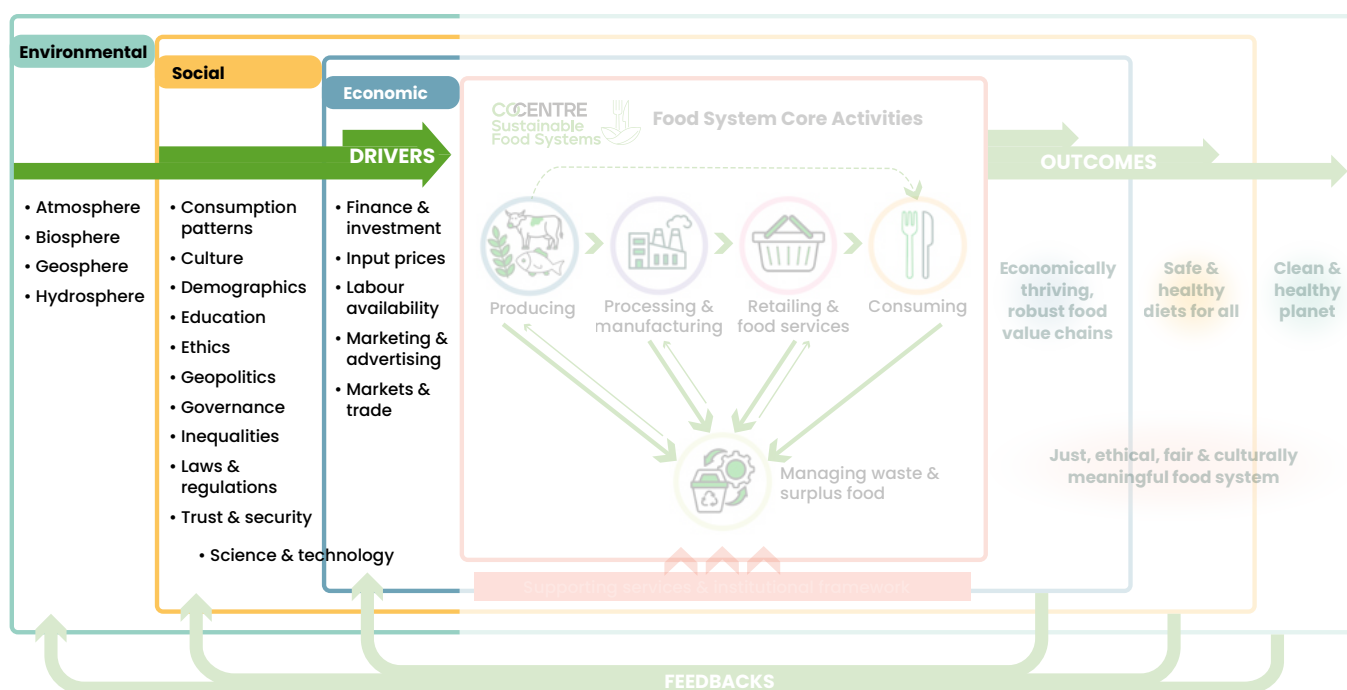
Category	ROI	NI
Agricultural department	Department of Agriculture, Food and the Marine (DAFM)	Department of Agriculture, Environment and Rural Affairs (DAERA)
Consumer and Regulatory	• Food Safety Authority of Ireland (FSAI) • National Standards Authority of Ireland • Department of Health (ROI) • Health Service Executive (HSE) • Sea-Fisheries Protection Authority (SFPA)	• Food Standards Agency (FSA) • Department of Health (NI) • Public Health Agency (PHA) • District Councils • Consumer Council NI
Industry	• Enterprise Ireland • Bord Iascaigh Mhara (BIM) • Bord Bia	• Invest NI • Department for the Economy
Science	• Teagasc • Research Ireland • Universities • Higher Education Authority • Marine Institute	• Agri-Food and Biosciences Institute (AFBI) • Universities • College of Agriculture, Food and Rural Enterprise (CAFRE)
Environment	• Environmental Protection Agency (EPA) • Department of the Environment, Climate and Communications (DECC) • Inland Fisheries Ireland (IFI) • Science Foundation • Research Ireland	• Northern Ireland Environment Agency (NIEA) • DAERA (environment function)
Cross-border	• Safefood • InterTradeIreland • Food Safety Promotion Board	• Safefood • InterTradeIreland • Food Safety Promotion Board



Section 2: Food system drivers

Drivers in any given system, particularly the food system do not operate independently of each other; instead, the drivers interact with each other. Key drivers noted in the food system can be grouped into broad categories of environmental, social and economic (Figure 21).

Figure 21: Food Co-Centre Conceptual Framework (2025) – Drivers



// A driver is 'a process which influences how the food system actors behave, the value chain functions and therefore impacts the nature of the food system outcomes'⁵⁶ //

The influence of a particular driver or combination of drivers will fluctuate in its power of influencing food system activities at any one time. It is expected that socioeconomic and environmental drivers remain volatile.⁵⁷ Numerous driver words are listed in the Food Co-Centre Conceptual Framework and examples of each driver are provided in Table 2.



Examples of drivers

Table 2: Examples of drivers influencing the Irish and UK food system

System level	Drivers	Examples ¹²
Environmental drivers	Atmosphere	Climate change, extreme weather events, climate volatility and uncertainty
	Biosphere	Genetic diversity, species diversity, ecosystem diversity, ecology
	Geosphere	Areas available to use or produce, land allocation, soil microbiome, soil degradation, land utilisation, preservation
	Hydrosphere	Water: availability, accessibility, treatment, runoff
Social drivers	Consumption patterns	Proactiveness of health, dietary preferences
	Culture	Attitude, food beliefs and practices
	Demographics	Aging population, immigration / migration, urban-rural, human genetic traits, diversity, quality of dietary intake
	Education	Engagement, knowledge transfer, food literacy, scientific knowledge, education: children, consumers
	Ethics	Ethical and equity considerations
	Geopolitics	Geopolitical volatility, impacts of global insecurities, traceability and transparency
	Governance	Environmental, Social and Governance (ESG), national and international policy / governance
	Inequalities	Urban-rural, disparities, human right to healthy food
	Laws & regulations	General Data Protection Regulation (GDPR), Regulations: globally, regionally, nationally
Social / Economic driver	Trust & security	Trust in government (democracy), trust in society, global trust, trust in technology, trust within supply chains, communication, traceability and transparency
	Science & technology	Artificial Intelligence, digitalisation, precision agriculture and nutrition, logistics, data literacy, factory farms, innovative and transformative businesses, data ownership



System level	Drivers	Examples ¹²
Economic Drivers	Finance & investment	Subsidies, innovation investment, agri-food venture capital, farm income livelihood, philanthropists
	Input prices	Fertiliser, energy, seeds, equipment
	Labour availability	Shrinking / expanding population and workforce, immigration / migration
	Marketing & advertising	Communications, promotion
	Markets & trade	International trade, reliance on import, commodities, access to labour market, regionalisation versus globalisation, the influence of conglomerates, market concentration

Identifying or quantifying drivers of the food system is a huge task. However, reports that articulate or speculate on consumer demands or policy briefs that discuss ongoing challenges at a global or regional level can give some indication of important levers and 'direction' of travel for some of the drivers that need to be considered. For example, The *Kerry Health and Nutrition Institute* highlights key 'health and nutrition megatrends' annually and noted the following for 2026: (1) Food for Health and Longevity (e.g., affordability, gut and Immune health, GLP-1 medications^q); (2) Regulatory Shifts and Reformulation (e.g., forthcoming front-of-pack guidelines as well as sodium, sugar and fat reductions via reformulation); (3) Evolving and New Technologies (e.g., precision nutrition, Artificial Intelligence (AI) and biotechnologies); (4) The Processing Paradox (e.g., processing can positively improve food safety, stability, texture, affordability and reduce waste); (5) Nature, Biodiversity and Resilience (e.g., regenerative agriculture and resilient supply chains).⁵⁸

With respect to agriculture, the *European Commissions' Vision for Agriculture and Food* (2025) places the farmer at the centre of change and lays out the path for tackling pressures that EU farmers face. The visions aim to make the sector more sustainable and help agriculture to remain an attractive and remunerative sector and allow agriculture to continue playing a full part in the EU's efforts to combat the effects of climate change.⁵⁹

This section of the report provides examples and some information on food system drivers relevant to the ROI and NI context. For several drivers, quantitative data is limited; therefore, these are presented descriptively and supported where possible by literature and contextual examples.

^q GLP-1s are Glucagon Like Peptide medications, used for weight loss.



2.1. Environmental drivers

Atmosphere

The environmental atmosphere affects the food system via **climate change**, extreme weather events, climate volatility and uncertainty. In line with global trends, the current temperature in the ROI has increased by 0.8°C compared to 1900 and more heat waves are reported to be expected.⁶⁰ Extreme weather events include flooding, storms and heat waves. The ROI is increasingly experiencing heatwaves and record-high temperatures, with the occurrence of extreme heat events increasing by approximately 35% between 1942 and 2020 and major heatwave events becoming substantially larger in spatial extent.⁶¹ Droughts and heat stress affect grass growth, leading to fodder crises on farms.⁶⁰

Biosphere

Genetic diversity, species diversity, ecosystem diversity and ecology influence food system activities. Genetic diversity is a key biosphere driver which is crucial for food systems resilience and the ability to adapt to environmental challenges. Broad **genetic diversity** protects against transmissible diseases, pests and climate variability.

Geosphere

This driver consists of: areas available to use or produce, **land allocation**, soil microbiome, soil degradation, land utilisation and preservation. Land allocation for agriculture in the ROI and NI is similar, with the largest proportion of agricultural land used as grassland (Figures 22 and 23).^{16, 19}

Figure 22: ROI land area and use (2023)

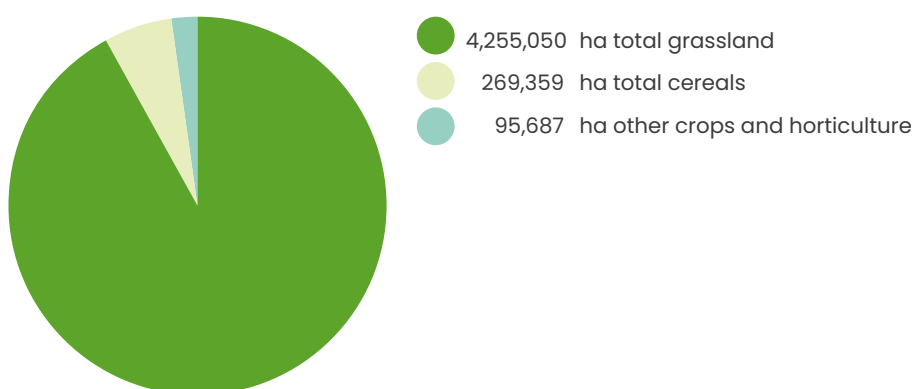
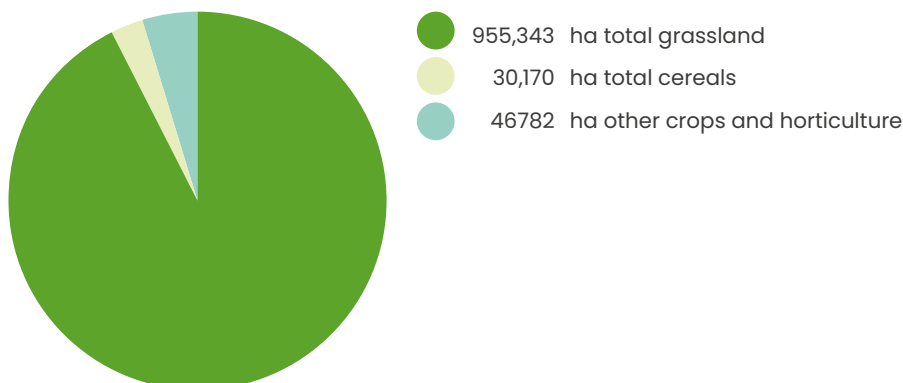
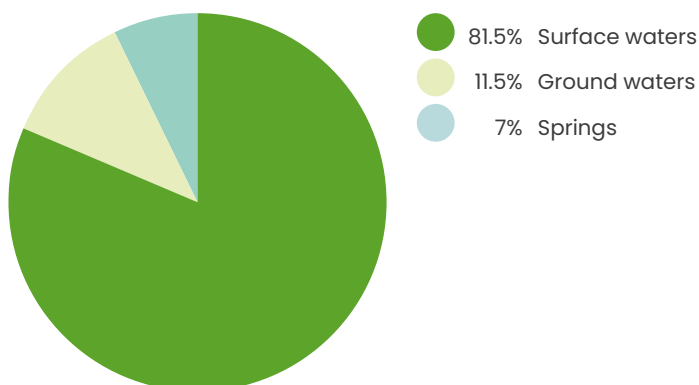


Figure 23: NI land area and use (2025)

Hydrosphere

The hydrosphere describes water: availability, accessibility, treatment and runoff. Although there is plenty of precipitation across the ROI, there is an imbalance in water availability across the ROI. In the West, water availability is greatest and in the East, more water is needed.⁶² Outdated water pipes mean that millions of litres of water leak from the water supply system daily.^{62, 63} In NI, the largest supply of drinking water (40–45%) comes from Lough Neagh.⁶⁴ Figure 24 shows where ROI water sources are; however, no equivalent data could be identified for NI:⁶²

Figure 24: ROI water supply sources (n.d.)

2.2. Social drivers

Consumption patterns

Consumption patterns shape and are shaped by the wider food system context. A global survey (n=18,591) including the ROI in 2020 suggests dietary preferences and identities are becoming more diverse and less rigid. Although many consumers aspire to follow, or associate with, a particular dietary lifestyle, this does not always translate into consistent consumption behaviour.⁶⁵

In the ROI specifically, **flexitarian**^r diets were the most commonly reported alternative food consumption behaviour (19%), whereas vegetarian (9%) and vegan (2%) dietary adherence remained comparatively low in 2020.⁶⁵ A more recent 2025 nationally representative survey (n=1,000) commissioned by the *Vegan Society of Ireland* found that omnivorous diets remained dominant, with only 3% of adults identifying as **vegan or plant-based** and 7% as vegetarian.⁶⁶

In NI, the FSA *Food and You 2 Survey* (n=3,076) conducted in 2023 explored consumer perceptions of healthy and **sustainable diets**. Only a minority associated vegetarian (11%) or vegan (7%) diets with dietary sustainability. Healthy diets were strongly associated with fruit and vegetable intake (81%), hydration (77%), reducing sugar (68%) and reduced salt consumption (59%) rather than with vegan dietary patterns (1%).⁶⁷

In the ROI, 82% of adults ranked taste or nutrition/health as the key factor influencing food choices.⁶⁸ Dietary preferences and purchasing behaviours are also influenced by **wider social and economic pressures**. The latest research from *Consumer Council NI's Household Expenditure Tracker* shows that the lowest earning households in NI spend 23.8% of their 'basic spending' on food and non-alcoholic beverages. This is the highest proportion of food and drink spending allocation since these figures began being reported, demonstrating the continuing **cost-of-living crisis**.⁶⁹ The vast majority of NI consumers (93%) are concerned about the cost of food, with 29% of respondents citing this as their second biggest issue as a consumer, second to household bills (32%).⁷⁰

Safefood has calculated the cost of a weekly **healthy food basket** in NI in 2024 for various sizes of households, ranging from a pensioner living alone (£71) to a two-parent, three-child household (£276). If the latter household were dependent on state benefits this would be 63% of their take home income.⁷¹ Similar *Safefood* research in the ROI categorised six household types and found a minimum essential standard of living healthy basket cost between €60 to €198 a week in 2024. This means an urban household receiving social welfare could spend up to 35% of their net income on a healthy food basket.⁷² **Convenience, cost and taste** remain major influences on food choice and eating behaviour as the frequency of cooking from scratch has decreased and OoH energy intake now contributes 10-23% to overall energy intake.^{68, 73}

More detailed discussion and data concerning dietary patterns, food consumption, food behaviour and the food environment is provided in Sections 3.1 and 3.4.

Culture

Culture shapes dietary preferences, food practices and consumption patterns. Across the Iol, food heritage is rooted in natural, hearty produce including dairy products, pork, beef and potatoes. Irish stew and soda bread are traditional fare.

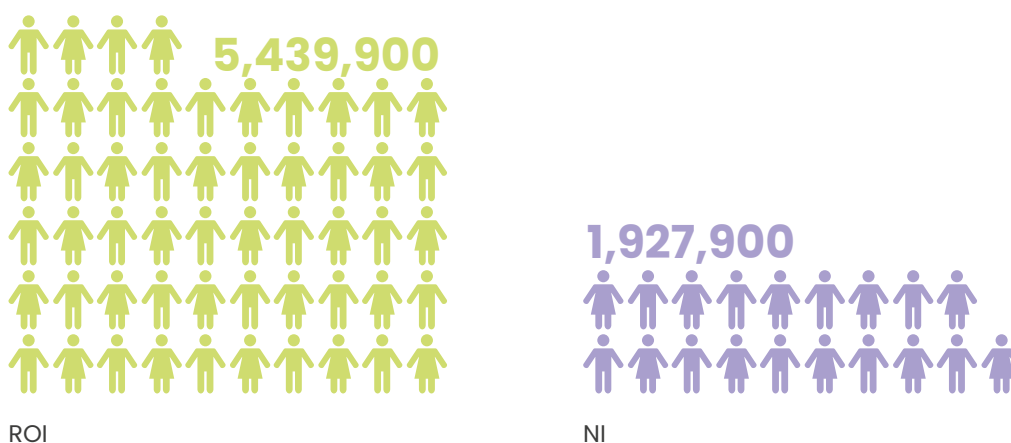
^r Flexitarian diet: Primarily plant-based diet but eat meat, fish, or other animal products occasionally.



Demographics

A major component of societal drivers is the population: an ageing population, immigration, migration, urban-rural, human genetic traits, diversity and quality of dietary intake. Due to increases in **life expectancy**, there is now an older demographic across both jurisdictions. The median ages across the Iol have increased significantly since 1971, from 27-years-old to 38-years-old in the ROI and 28-years-old to 40-years-old in NI according to 2021/22 census data.^{74, 75} The population is also growing: between 2002 and 2022, the ROI's population increased by 31% and NI's population increased by 13%, driven by net migration.⁷⁵ The ROI's population of 5,439,900 is almost three times the size of NI's population of 1,927,900 (Figure 25):^{76, 77}

Figure 25: Population in the ROI (2025) and NI (2024)



Education

This includes engagement, knowledge transfer, food literacy, scientific knowledge and the education of children and consumers. Education is an important social determinant of dietary behaviour and food choice. Higher levels of education may increase food literacy and nutritional knowledge, while also shaping beliefs, attitudes and behaviours relating to food, health and sustainability.⁷⁸ In the ROI, **third-level^s educational attainment** was above the European average across all age groups, being highest among 25- to 34-year-olds (65%), followed by those aged 35-44 years (61%) in 2024.⁷⁹ In NI in 2023, 59.2% of 16- to 64-year-olds had obtained a third-level qualification.⁸⁰

Research by the *Economic & Social Research Institute* found that females are more likely to obtain higher (third-level) education qualifications,⁸¹ which aligns with the CSO data from ROI suggesting females had higher levels of third-level attainment than males across all age groups (25- to 64-years-old).⁷⁹ Early school leaving is 6% in the ROI and 14% in NI, with data showing that this jurisdictional gap has widened over time.⁸¹

^s Third-level education: A-Levels (grades A-E), T Levels, International Baccalaureate, Advanced Apprenticeships, NVQ/SVQ Level 3 and BTEC Nationals.

Ethics

Ethical and equity considerations include **Fairtrade** which ensures producers in developing countries receive fair prices, protecting them from temporary market declines. *Fairtrade Ireland* promotes fair trading practices and their research has found that Irish consumers' spending on Fairtrade certified products is increasing.⁸²

Geopolitics

Drivers such as geopolitical volatility and global insecurities impact food system activities and outcomes. Recent macro shocks and the consequent political instability have pushed food systems to the forefront of people's minds. First, **Brexit** (2020) caused significant geopolitical upheaval, particularly in NI where it impacted food production and trade.⁸³ Additionally, the COVID-19 **pandemic** (2020) demonstrated the lack of resilience across the food system as supply chains were impacted and global food commodity prices rose immensely, peaking at 19.2% inflation in March 2023.⁸⁴

The pandemic highlighted the 'fragility and complexity of our current food systems,' pushing lower socioeconomic status groups further into poverty.⁸⁵ p173 The cost-of-living crisis was further exacerbated following Russia's invasion of Ukraine (2022), disrupting grain and energy supplies.⁸⁶ In summary, global macro shocks and the geopolitical situation of the world majorly impacts the food system closer to home.

Governance

This includes Environmental, Social and Governance, national and international policy and governance. Broad policy commitments and targets include:

- i. *Food Vision 2030* (ROI): A 10-year strategy for the ROI agri-food sector, aiming to make the ROI a world leader in sustainable food systems. The strategy has four missions: (1) A climate smart, environmentally sustainable agri-food sector; (2) Viable and resilient primary producers with enhanced wellbeing; (3) Food which is safe, nutritious and appealing: Trusted and valued at home and abroad; (4) An innovative, competitive and resilient agri-food sector, driven by technology and talent.⁸
- ii. *Northern Ireland Food Strategy Framework*: A cross-departmental government approach to transform the NI food system. The four strategic priorities are: (1) Enabling improved dietary related health outcomes through education and increased accessibility to healthy nutritious food; (2) Building an environmentally sustainable and resilient agri-food supply chain; (3) Building a prosperous food economy; (4) Building a food culture and food conscious society.⁹
- iii. *The National Food Strategy* (UK): The plan is largely England-focused despite the strategy being UK-wide. This is due to 'policy responsibility for food and health [being] largely devolved to Scotland, Wales and Northern Ireland'.¹⁰ p6.



These strategies reflect a shared emphasis on sustainability, health and economic resilience within the food system. While approaches differ in scope and governance structures, particularly due to devolution in the UK, there is broad alignment in the prioritisation of environmental sustainability, food system resilience and public health outcomes.

Inequalities

Inequality drivers of the food system include the urban-rural divide, disparities and the human right to healthy food. Around 36–39% of the population across the Iol live in rural areas (Figure 61).^{87, 88} More information about the inequalities rural consumers face can be found in section 3.4. in 'Access' under 'Right to food.'

Laws & regulations

Regulations operate at global, regional and national levels and are central to ensuring **food safety, quality and trade**. At the international level, standards such as the *Codex Alimentarius* from the FAO provide guidance on food safety, labelling and hygiene.⁸⁹ In Europe, the *European Food Safety Authority* (EFSA) provides independent scientific data and advice on possible risks across the food chain.⁹⁰ At national and regional levels, laws and regulations include food safety standards, logistics operations, business hygiene, traceability, fertiliser use and import/export rules. Beyond core food system regulation, broader governance frameworks also influence the system. For example, *General Data Protection Regulations* (GDPR) affects how retailers manage consumer data through loyalty schemes such as *Tesco Clubcard* or *Dunnes VALUEclub*.⁹¹

The Iol also has unique governance with respect to the food system. The *Windsor Framework* was developed following the UK's withdrawal from Europe (Brexit). Conditions were introduced to avoid a hard border between the ROI and NI. Additionally, the framework permits qualifying goods to move from NI to Great Britain (GB) without extra animal-health declarations.⁹²

Trust & security

Drivers such as trust in government (democracy), society, technology, supply chains, communication, traceability and transparency affect food systems activities and outcomes. Consumers in NI are generally trusting of the food system, being confident that the food they purchase is safe to eat (92%) and confident food labelling information is accurate (87%).⁶⁷ However, the NI public worry that food businesses and the Government prioritise profit over people's health. Further, 67% of NI consumers (versus the UK average of 59%) trust local food processors to have higher quality standards than bigger businesses.⁹³ Research in the ROI indicates strong consumer and industry trust in the food system, believing that food safety has improved in recent years.⁹⁴



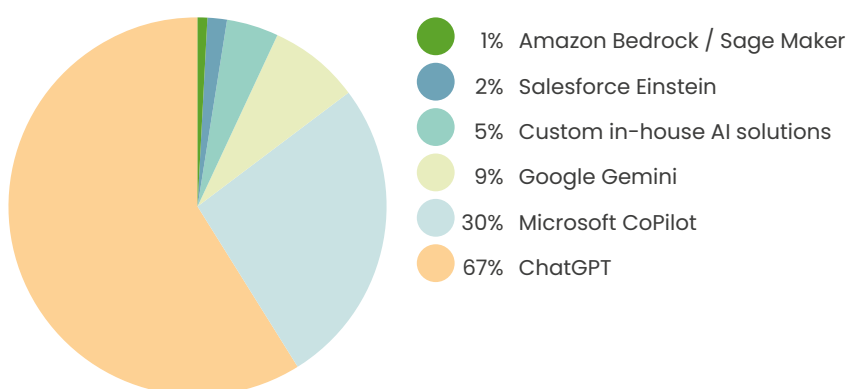
In addition, recently, a *European Institute of Innovation and Technology* report examining *The State of Trust in Europe's Food System*, with responses from 20,000 consumers across 18 European countries, found that while fewer than half of Europeans are confident in the food they eat, trust has increased across all food system actors since 2023, although recovery remains uneven. The report highlights a persistent gap between rising trust in food system actors and confidence in food itself, underlining the importance of rebuilding trust not only in institutions, but in the food people consume every day.⁵⁹

Science & technology

AI, digitalisation, precision agriculture and nutrition, logistics, data literacy, factory farms, innovative and transformative businesses and data ownership are science and technology drivers. Information pertaining to NI farms could not be identified, but 5% of ROI farms have a renewable energy source present on their farm and 53% farmers use Smart Farming Technology (SFT) for evidence to better manage the farm and to streamline farm work.^{19, 95}

IFAC's 2025 survey found a trend towards agronomic innovation using AI for marketing, advertising and sales (53%) and market research and trend analysis (40%). In terms of AI usage, **ChatGPT** was the most commonly used tool or software (Figure 26).⁹⁶

Figure 26: ROI percentage of agribusiness business leaders using AI tools (2025)



2.3. Economic drivers

Finance & investment

This driver includes: subsidies, innovation investment, agri-food venture capital, farm income livelihood and philanthropists. Agri-food sector government support is available across the IoI to enhance competitiveness and economic performance. Financial support may be used for buying or developing computer software; purchasing machinery and equipment; and, buying intellectual property rights (see Section 3.2. for more information).^{97, 98}



Input prices

Increasing input prices (i.e. fertiliser, energy, seeds, equipment and fuel) reduce profit margins. Input costs have soared in recent years, particularly for **fuel** and **fertilisers** which increased following the Russo-Ukrainian invasion, leading to a subsequent global energy crisis. In 2021, NI farmers experienced input price increases across four key areas: fertilisers (+108%), machinery (+31%), fuel and oil (+58%) and livestock feed (+22.1%). While some input costs declined after the sharp increases experienced in 2021, input prices remain volatile.⁹⁹ From 2024 to 2025, ROI farmers experienced a decrease in fuel (-3.6%) and increases in: electricity (+2.4%), veterinary expenses (+4.7%) and fertilisers (+12.5%).¹⁰⁰ Fuel prices have since increased again following the start of the 2026 war in the Middle East.¹⁰¹

Labour availability

A shrinking or expanding population and workforce, immigration and migration all impact labour availability. Following the UK's EU exit, the loss of free movement of labour has affected NI horticultural farms who are typically reliant on seasonal workers recruited from countries such as Romania, Bulgaria, Lithuania and Poland. In 2017, 20% of the paid agricultural workforce were migrants.¹⁰² No post- EU exit figures could be located for migrant workers.

ROI agribusiness research conducted by the IFAC found that in 2025, 50% found it either difficult or very difficult to recruit the staff required to run their businesses. In terms of retaining people, 35% rated this as difficult or very difficult. The key challenges faced when building a team were: salary expectations of qualified candidates were too high (64%), lack of industry-specific skills (41%) or being unable to find qualified candidates (38%).⁹⁶

Marketing & advertising

There is evidence that food marketing and advertising – particularly for High Fat, Salt and Sugar (HFSS) foods – impacts consumer purchases and dietary intake of unhealthy foods.¹⁰³ The UK and Irish government and advertising standards agencies have regulations in place to reduce children's exposure to unhealthy food and drink advertisements. This includes banning HFSS advertising during children's airtime and eliminating HFSS marketing communications from any locations primarily used by children (i.e. nurseries and schools).^{104, 105}

Market & trade

This driver consists of international trade, reliance on import, commodities, access to labour market, regionalisation versus globalisation, the influence of conglomerates and market concentration. Across the IoI, many dairy processors work cross-border between the ROI and NI.¹⁰⁶ A weak pound sterling compared to Euro improves the competitiveness of UK exports but increases the prices of imported products from the ROI into NI. Table 3 and Figure 27 display the values of food and drink products exported out of the ROI into NI in € and the value of imports.¹³



Table 3: ROI values of food and drink products exported into NI and imported from NI (2024)

Category	Exports (€1000)	Imports (€1000)
Meat preparations	192,857	30,807
Chocolate-based products	28,861	7,929
Pizza/Quiche	34,178	7,483
Other food preparations	39,841	19,093
Breads	73,693	32,441
Waters & Juices & Soft drinks	86,579	97,080
Cereal based products	38,307	68,874
Extracts, sauces, soups	52,339	9,865
Fruit-based bakery	17,612	4,869
Fruit & vegetable based	45,764	19,899
Sugar-based products	26,100	24,635
Dairy preparations	14,512	4,554
Biscuits	8,460	1,683
Frozen confectionery	9,602	4,198
Savoury snacks	2,347	484
Grand total	671,052	333,892

The grand total of exports is over double (€671,052,000) the grand total of imports (€333,892,000).

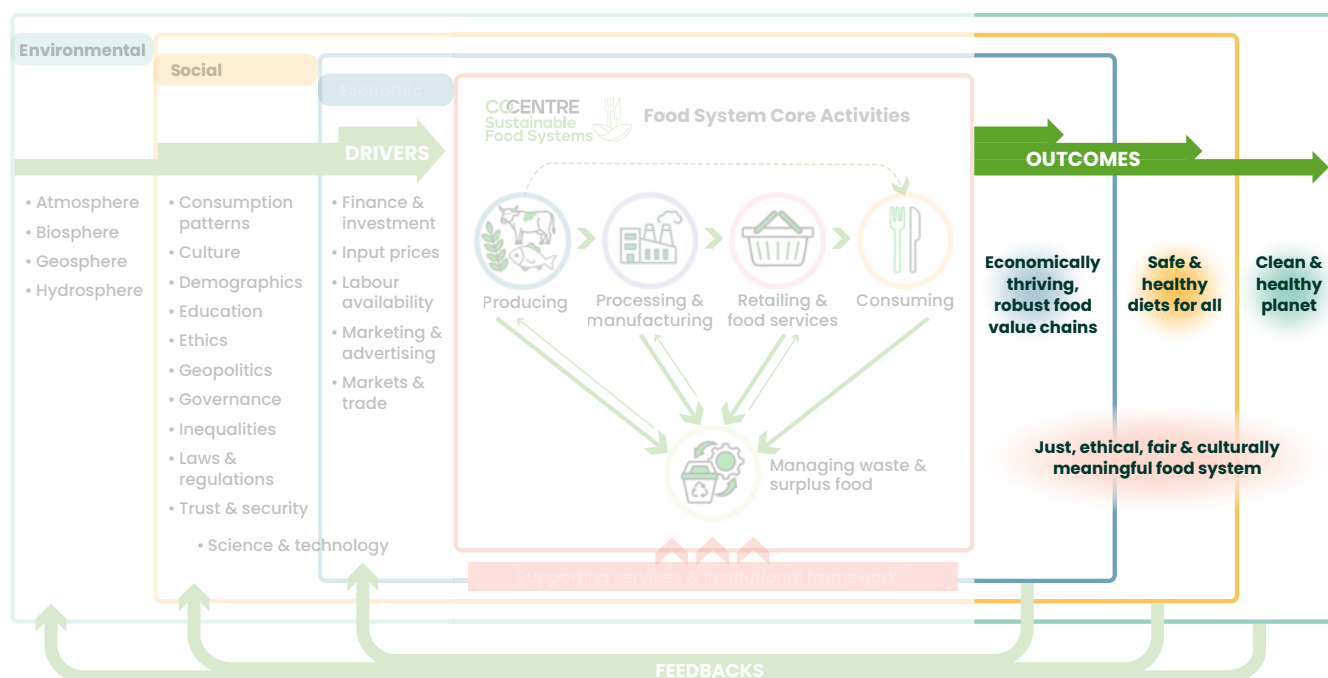
Cross-border trade between the ROI and NI has increased threefold in the last decade,¹⁰⁷ with substantial growth from £8.3bn in 2021 to £14.6bn in 2024 occurring following the implementation of post-Brexit trading arrangements including the Northern Ireland Protocol in 2021.¹⁰⁸ Over the same period, trade relationships between the ROI and GB have also shifted. Total NI trade with GB increased from £27.2bn to £36.5bn.¹⁰⁸ Estimated ROI trade with GB (approximated by subtracting NI-ROI trade from total ROI-UK trade) peaked in 2022 at approximately £33.5bn before declining in subsequent years.^{108, 109} Combining estimated ROI-GB and NI-GB trade suggests that total ROI-GB trade remained substantial overall, increasing from approximately £51bn in 2021 to a peak of around £62bn in 2022 before moderating to approximately £59bn in 2024. These shifts have occurred alongside new customs procedures and regulations that have increased administrative and shipping burdens associated with trade to and from the UK.⁵¹



Section 3: Food system outcomes

The four food system outcomes in the *Food Co-Centre Conceptual Framework* (Figure 28) are societal goals which have been expanded upon in the four quadrants of the *Food Co-Centre Sustainability Compass* (Figure 28).

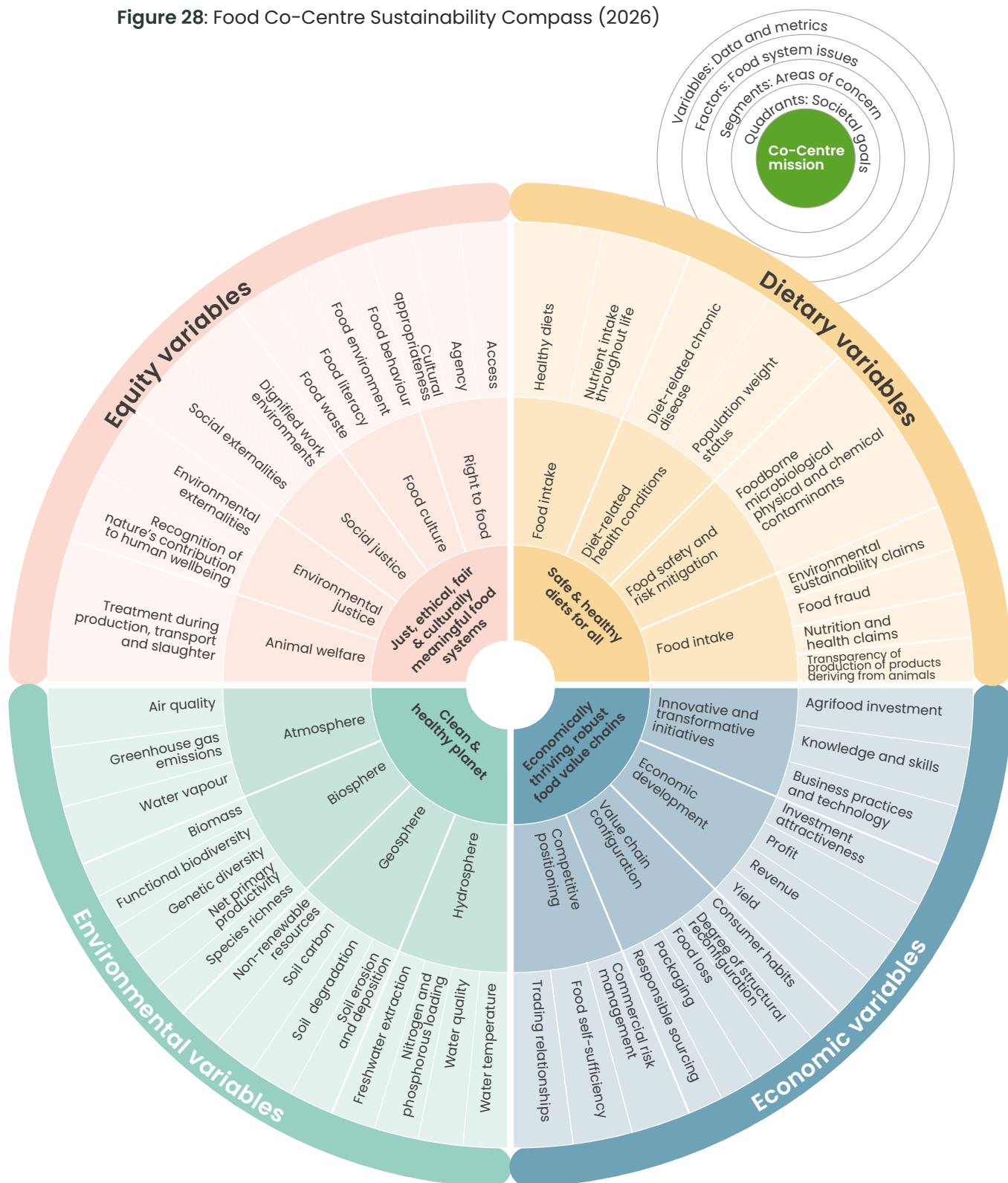
Figure 27: Food Co-Centre Conceptual Framework (2025) – Outcomes



The Compass was co-designed to aid decision-making via a systems approach and support food systems researchers, practitioners and policymakers. It informs users of possible synergies (benefits) or trade-offs (unintended consequences) from prospective practice or policy interventions by displaying outcomes to consider. As many policymakers work in silos, the visualisation tool serves as a systems thinking tool, an aide-mémoire of the breadth of food system outcomes.

Each of the four ‘societal goals’ (quadrants) are divided into four or five ‘areas of concern’ (segments). These are sub-divided into ‘food system issues’ (factors). This section of the report strives to present key ‘data and metrics’ (variables) identified in the ROI and NI context for each factor, showing the **baseline sustainability status** of these food systems outcomes in 2026 or most the recent sources.¹¹⁰

Figure 28: Food Co-Centre Sustainability Compass (2026)



3.1. Safe & healthy diets for all

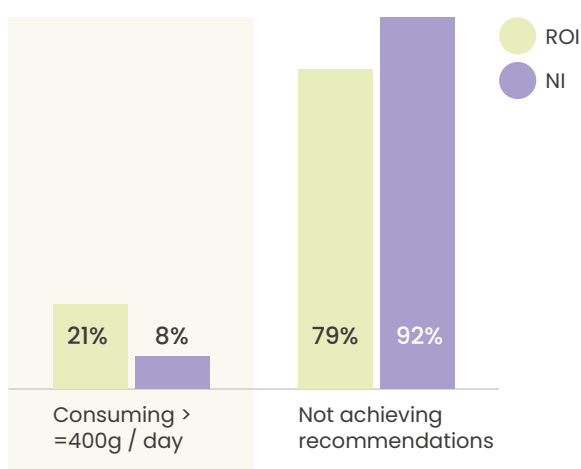
Much of the data reported in this section is from the 2024 *Irish National Adult Nutrition Survey* (NANS) for the ROI and from various NI FSA surveys for the NI population. However, due to differences in data collection methods and reporting, these figures should be interpreted as indicative of broader food system characteristics rather than standardised like-for-like equivalents between the two jurisdictions.

Food intake

Healthy diets

Recommendations for **fruit and vegetable consumption** are similar across both countries. In the ROI, both children and adults are recommended to consume 400g per day (/day). The UK guidelines state an adult-sized portion of fruit and vegetables is a 'handful' or 80g, making 5-A-Day equivalent to 400g/day. Conversely, there is no portion guidance for children under 11-years-old in the UK, aside from a 'handful.' Figure 29 shows that adults' consumption of their 5-A-Day in the ROI is significantly higher (21%) than in NI (8%);^{68, 73}

Figure 29: Percentage of adults consuming the recommended fruit and vegetables in the ROI (2023–2024) and NI (2017–2023)



It is difficult to standardise data for **children's fruit and vegetable consumption** across the IoI as different age brackets and methods of reporting are used. In the ROI, average total fruit and vegetable intake for 5- to 12-year-olds is 221g/day whereas in NI, 11- to 18-year-old children consume 2.4 portions a day and 4% meet the 5-A-Day recommendation.^{111, 112}

In terms of consumption of **unhealthy snacks**, the NI FSA *National Diet and Nutrition Survey* (NDNS) did not calculate snack frequency, but found adolescents aged 11- to 18-years-old had the highest consumption of confectionery at 14g/day for males and 20g/day for females. Adults aged 19- to 64-year-old consumed on average 12g/day.⁷³ The ROI *Healthy Ireland Survey* found that 27% of adults consume an 'unhealthy' snack daily and 34% consume two or more 'unhealthy' snacks daily.¹¹³



No population-level information pertaining to **red meat^t consumption** as part of the ROI diet could be identified. However, a large-scale study focusing on beef and lamb consumption amongst 5- to 90-year-olds in the ROI found that consumption of these food stuffs ranged from 19 to 43g/day.¹¹⁴ In the NI FSA NDNS, **meat product^u consumption** is categorised under 'red meat' and varied from 17 to 67g/day. 11- to 18-year-old boys had the highest average consumption (67g/day) and generally daily consumption was higher for males than females (except in 4- to 10-year-olds).⁷³

Nutrient intake throughout life

Intakes of **vitamins and minerals** (e.g., vitamin D, vitamin C, folate, calcium, zinc, vitamin B6, riboflavin, vitamin A, magnesium, potassium and iron) tend to be below the Reference Nutrient Intake^v (RNI).^{113, 115} Similar percentages of adults took a **vitamin and/or mineral supplement** in the self-reported surveys: 52% in the ROI and 50% in NI. Survey data shows that multivitamin and vitamin D consumption varies substantially across the jurisdictions (Figures 30 and 31):^{68, 116}

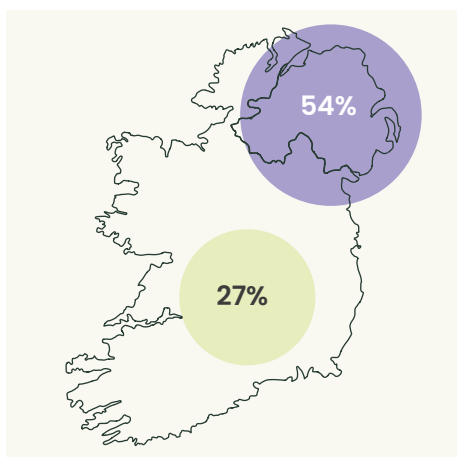


Figure 30: Adult population taking multivitamin supplements across the Iol (2023-2024)

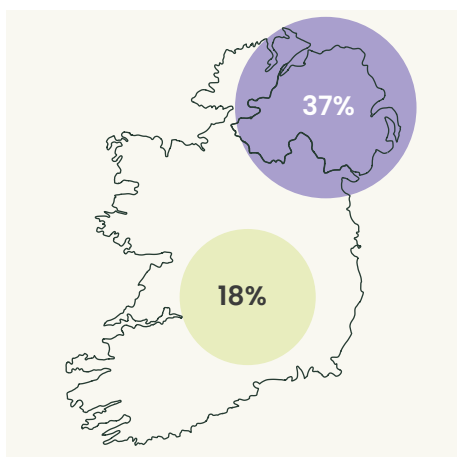


Figure 31: Adult population taking vitamin D supplements across the Iol (2023-2024)

^t Red meat: beef, lamb and pork.

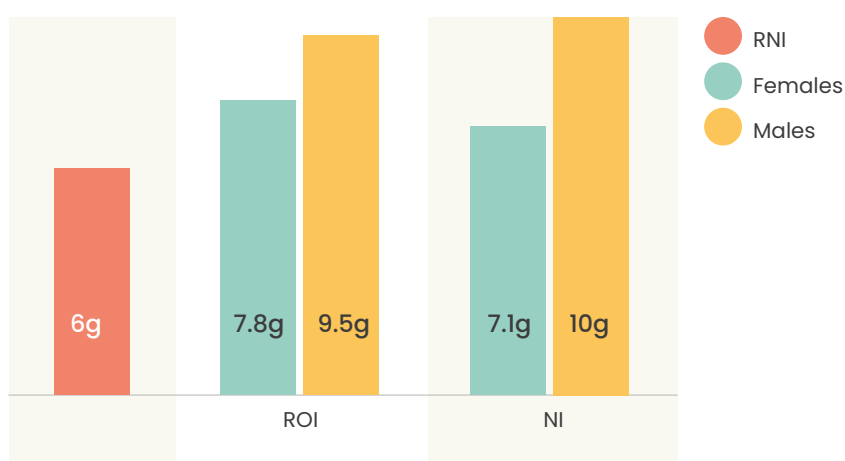
^u Meat products: processed meat, e.g., sausages or bacon.

^v The benchmark for daily nutrient intake. The RNI meets the nutritional needs of 97.5% of the population.

Additionally, in the ROI, 15% of respondents took fish, linseed, primrose oils. Data from NI indicates that 27% take fish oils or Omega 3, 25% take vitamin C, 5% have vitamin B12 injections and 7% take folic acid.^{113, 116}

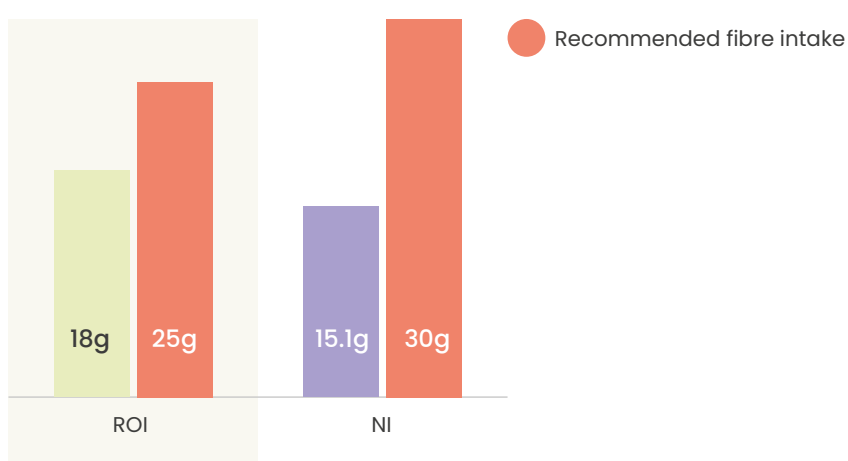
Shop-bought soups, sauces, bread as well as cured and processed meats are the main contributors to sodium intake in NI.¹¹⁷ Both countries had average **salt^w intakes** higher than the RNI maximum of 6g/day and adult males consumed significantly more sodium than females (Figure 32).^{68, 118}

Figure 32: Average salt intake (g/day) in the ROI (2023–2024) and NI (2015)



The recommended **fibre** intake in the ROI is 25g whereas in NI it is 30g.^{119, 120} Yet both countries fall short: NI adults consume 15.1g, half the recommended amount and ROI adults consume 18g fibre per day (Figure 33).^{68, 73}

Figure 33: Adult fibre intake (g/day) in the ROI (2023–2024) and NI (2017–2023)



^w Roughly 2.5g of sodium equates to 6g of salt.

Free sugars intake as a percentage of total dietary intake amongst 19- to 64-year-olds is 8.7% in the ROI and 8.1% in NI.^{68, 112} Lastly, **saturated fat** as a percentage of total energy intake should not exceed 10% of daily energy intake.¹²¹ In the ROI, saturated fat makes up 14% of the average adults dietary intake and amongst NI adults it is 12.4%.^{68, 118}

Diet-related health conditions

Diet-related chronic disease

Unhealthy diets are a leading risk factor for non-communicable diseases (NCDs) such as **cardiovascular disease** (CVD), cancer and diabetes. When considering the prevalence of these within the IoI, the proportion of deaths due to CVD is similar across the ROI (26.5%) and NI (24%).^{122, 123} However, disparities exist for **hypertension**^x (Figure 34) and **diabetes** (Figure 35):^{113, 124}

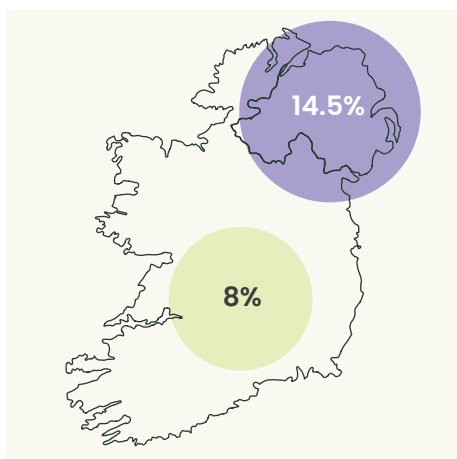


Figure 34: Percentage of the population diagnosed with hypertension in the ROI (2024) and NI (2025)

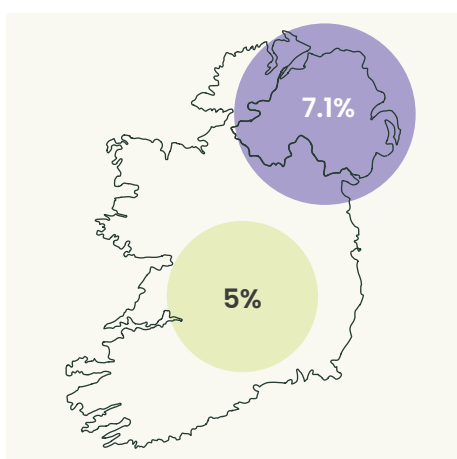


Figure 35: Percentage of the population diagnosed with diabetes in the ROI (2024) and NI (2025)

x Hypertension ~ High blood pressure.

Population weight status

Body Mass Index (BMI) categorises adults by their weight relative to height. Amongst adults, overweight and obesity prevalence is high in both countries and similar at 66% in the ROI (Figure 36) and 65% in NI (Figure 37) in 2024:^{113, 125}

Figure 36: ROI adults weight status (2024)

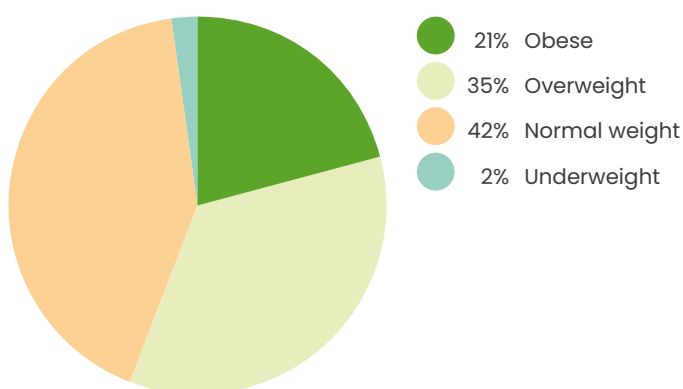
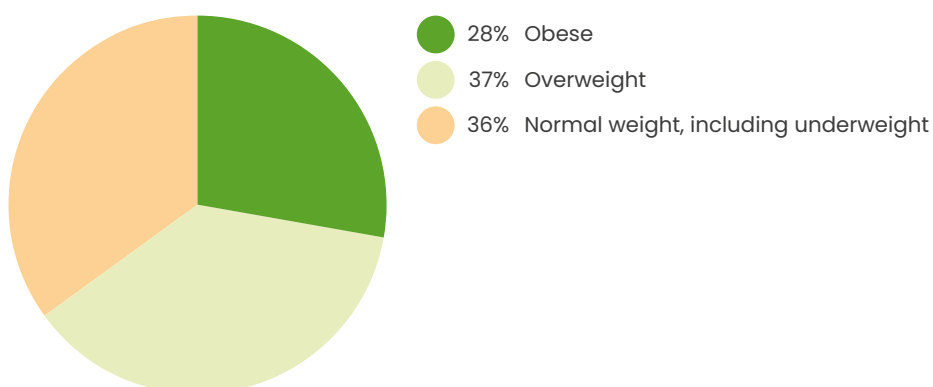
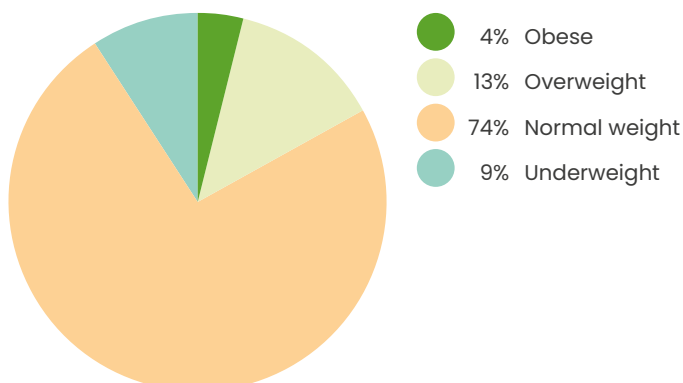
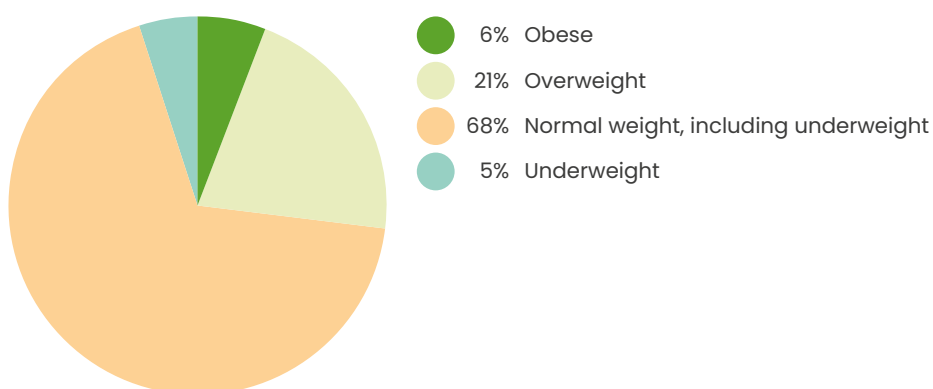


Figure 37: NI adults weight status (2024)



BMI for children is dependent on age- and gender-specific percentiles. In the ROI, 17% of children are overweight or obese (Figure 38). In NI, 27% of children are overweight or obese (Figure 39):^{126, 127, 128}

Figure 38: ROI children weight status**Figure 39:** NI children weight status

Malnutrition reporting could not be identified for NI. Undated statistics for the ROI state that 145,000 adults are affected at any one time and 1 in 3 of these malnourished individuals will be in hospital.¹²⁹ These figures relate to undernourished individuals, although overweight and obese individuals may also suffer from malnutrition; this is known as the 'triple burden of malnutrition'.¹³⁰

Food safety and risk mitigation

Foodborne microbiological, physical and chemical contaminants

Almost half (47%) of ROI consumers 'take it for granted that the food sold is safe'.¹³¹ Confidence in NI consumers is high, with 92% reporting that they were confident that the food they buy is safe to eat.⁶⁸

While many foodborne diseases go unrecorded unless the patient is treated by a General Practitioner or in the hospital setting, data from reported cases across the Iol are available. Figures 40 and 41 shows the occurrence of **Salmonella** (Figure 40) and **Campylobacteriosis** (Figure 41) across the Iol.^{132, 133}

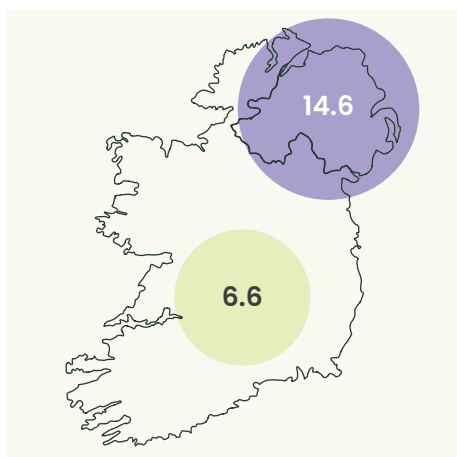


Figure 40: Salmonella incidence rate per 100,000 population in the ROI and NI (2022)

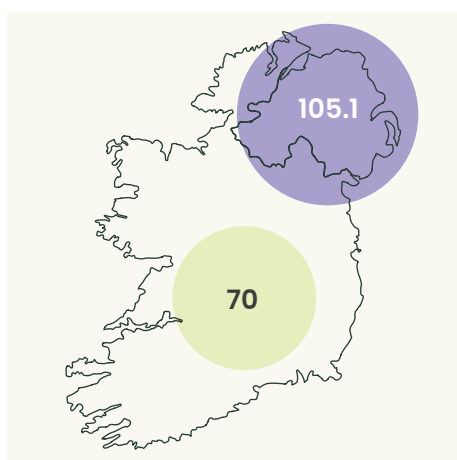


Figure 41: Campylobacteriosis incidence rate per 100,000 population in the ROI and NI (2022)

The *Rapid Alerts System for Feed and Food* (RASFF) provides notification alerts concerning food or feed. For this report, the webpage was checked on 27th February 2026. ROI data spanned back to 13th March 2014, showing 188 notifications in almost 12 years. The NI data spans 14th December 2023 to 20th February 2026, with 35 alert notifications: 30 food and 5 feed. Over the same time span, the ROI had 90 notifications, 1 from feed and the remainder from food on the RASFF site.¹³⁴ In the ROI, *Environmental Health Officers* in the *Health Service Executive* (HSE) and the *Food Safety Authority of Ireland* (FSAI) workers enforce **food safety legislation** in food businesses. In the ROI in 2025, 102 Closure Orders, 23 Prohibition Orders and 2 Improvement Orders were issued.¹³⁵

Food integrity

Environmental sustainability claims

No data could be identified for this food system issue in the dietary quadrant of the Compass (Figure 28). This refers to: Sustainability claims adhering to the *Green Claims Code*, ensuring claims made are substantiated, truthful and accurate (see Appendix glossary).

Food fraud

No recent quantitative studies concerning intentional deception or misrepresentation of food and its ingredients were identified, i.e. beef products labelled as Irish but originating elsewhere. lol focus group research has found consumers are aware of fraudulent risks such as: mislabelling and deceptive marketing, cultural misrepresentation and substitution fraud.¹³⁶ The *European Commission* publishes monthly *Joint Research Commission Food Fraud Reports* listing fraudulent instances. For example, in January 2026 the FSAI recalled two products sold in *LIDL* and *Dunnes* stores due to undeclared allergens.¹³⁷

Nutrition and health claims

Nutritional on pack claims are a key source of nutritional information for consumers and a NI FSA survey found that 32% read these claims. Claims include: 'low sugar', 'low fat' and 'high in fibre'.¹³⁸ A 2021 statistical analysis of food labels in products from three ROI nationwide supermarkets found that 52.8% displayed at least one nutritional claim.¹³⁹

A small-scale (24 ROI adult participants) study involving a questionnaire and focus groups found that participants generally had negative perceptions of low-fat claims on yoghurts and preferred full-fat dairy products. Further, 'live' and 'probiotics' were used interchangeably by participants and they did not realise 'live' was an authorised health claim. Participants preferred nutrition claims over health claims as they were better understood.¹⁴⁰

Transparency of production of products deriving from animals

FSA consumer research across the UK – including a focus group in Belfast, NI – found that transparency was important so that freedom of choice could be exercised and informed purchasing decisions could be made. It was recognised that **transparency is multifaceted** and total transparency is unfeasible due to the complexity of the food system. The participants did not desire detailed information on animal production (rearing, slaughtering conditions), simply that meat products were safe enough to eat.¹⁴¹ No similar research in the ROI could be located.





3.2. Economically thriving, robust food value chains

Due to differences in population size and how data are collected and reported across original sources in the ROI and NI, these figures should be interpreted as indicative of broader food system characteristics rather than precise equivalents between jurisdictions.

Innovative and transformative initiatives

// Within this report the term 'innovation' is defined as 'the successful generation and exploitation of new ideas. It is about transforming creative thinking into new products, new and improved processes and technologies to support new ways of doing things'.//¹⁴²

In both jurisdictions, the sector is strongly **export-oriented**, particularly in high-value products such as dairy and meat. This is especially pronounced in the ROI, where dairy products are the largest and most successful industry in the food and drink sector, with 90% of outputs exported to over 150 markets at a value of €6.4bn. Beef is the largest ROI meat export, valued at €3bn.¹³

Agri-food investment

Public investment into the sector supports farmers and agri-food enterprises, contributing significantly to farmers' income. In 2023, farmers in the ROI received around €1.77bn in direct payments from DAFM.¹³ NI farmers receive **agricultural support payments** from DAERA, although these decreased by 5.9% to £381m in 2024 (from £405m in 2023).¹⁴³ Further, DAERA's 2025/26 *Tackling Rural Poverty and Social Isolation* budget allocated grants totalling £7.91m to more than 2,350 rural organisations and businesses.¹⁴⁴

Government funding also supports **research** funding, with the DAFM *Thematic Research Call* in 2023 providing €22.3m for 21 new research projects.¹⁴⁵ The *Environmental Protection Agency* (EPA) supports research programmes in the ROI, announcing in early 2026 the availability of €6.5m for 24 new research projects addressing climate and environmental policy needs.¹⁴⁶ *Research Ireland* is one of the largest funders in the ROI, supporting programmes such as the *Co-Centre for Sustainable Food Systems* and *BiOrbic*.^{11, 147} In NI, DAERA offer postgraduate studentships, collaborative research funding and are also a funding partner for the *Co-Centre for Sustainable Food Systems*.^{11, 148}

Knowledge and skills

This food system issue can be quantified via the **number of graduates in agriculture, forestry, fisheries and veterinary**. In the ROI there were 1,650 graduates across these degrees in 2021.¹⁴⁹ As a caveat, this number may under-estimate the number of graduates that go on to work in food technologies as the number of engineering and science graduates cannot be adequately disaggregated to provide a reliable figure.



The data in NI is not disaggregated enough to report across these degree subjects and notably, there are currently no universities offering veterinary medicine in NI at the time of publication. NI graduate data for the 2022/23 academic year is available through the *Higher Education Statistics Agency*. 165 individuals graduated from either a further education college or higher education provider with a qualification in 'Agriculture, food and related studies'.¹⁵⁰

Business practices and technology

In terms of **renewable energy**, CSO's 2023 *Farm Structure Survey* found that 5% of ROI farms reported using a renewable energy source¹⁴⁹. Similarly, DAERA's *Innovation Survey* involving 4,971 farmers and 295 firms (>£250k turnover) identified that 4% of NI farms adopt some form of transformative bioeconomy technology, including renewable biological resources (1%) or replacement of fossil fuels (1%).¹⁴² NI Farmers may use *Global Positioning Systems* (GPS) for precision fertiliser and computer systems. 50% of cereal farmers use AI techniques to assist with precision farming.¹⁴²

Smart farming technologies (SFT) such as AI, drones and robotics may be used to optimise productivity on farms. A 2021 online survey including 96 responses from ROI farmers established that 48% were already employing SFT on their farms, 37% planned to use SFT in the future and 15% doubted they ever would.¹⁵¹ **Big data technology** (for storing, processing and analysing data) adoption was reported on 39% of medium and 38% of large farms in NI in 2022.¹⁴²

Considering smart technologies, ROI 2025 research from the IFAC has found a clear rise in **AI usage**, with most common uses being for: marketing and advertising (53%), market research and trend analysis (40%), new product development (26%) and automated report generation (26%).⁹⁶ Figure 26 showed the percentage of agribusiness business leaders using AI tools. Publicly available data on technology adoption and private investment within the NI agri-food sector remains limited.

Economic development

Investment attractiveness

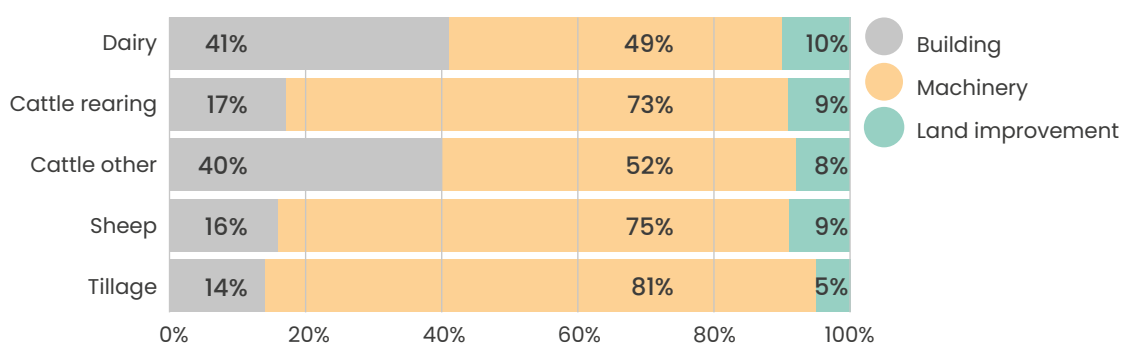
Private investment depends on potential profitability. The DAERA Innovation Survey identified the following key reasons why farms decided to invest into their business: more efficient production (85%), improving quality of goods or services (70%), entering new markets (70%), improving health and safety (60%) and reducing environmental impacts (60%). Larger farms were more likely to invest in new computer-based systems (18%) compared to 'small' farms (11%).¹⁴²

An IFAC survey found that 44% of agri-food businesses had delayed investment due to uncertainty; these delays ranged from 6-months (10%) to 'indefinitely' (7%).⁹⁶



Data from NI farms showed that investment into more technologically advanced **machinery and equipment** (i.e. tractors, telehandlers and slurry spreading equipment) was proportionately higher at poultry farms (30%) compared to dairy farms (24%).¹⁴² In the ROI, *Teagasc's National Farm Survey* (NFS) showed that private investment exceeded over €1.49bn in 2024 across the farms surveyed.^y ROI dairy farm investment was the highest at €49,412 per farm and dairy farm investment accounted for approximately half of total farm investment identified in the survey.¹⁵² Figure 42^z shows the average composition of ROI farm investment in 2024.¹⁵²

Figure 42: ROI farm investment by each farm type as a percentage (2024)



Profit

Differences in average farm income between jurisdictions may partly reflect differences in farm structure, including farm size, enterprise type and the prevalence of part-time farming. While the ROI *Teagasc* 2022 NFS found that 57% of farms had a Family Farm Income (FFI) less than €20,000,¹⁵³ the *Teagasc* 2024 NFS, noted that 43% of farms were economically viable, defined by FFI covering family labour and providing a 5% return on non-land assets.¹⁵² Of these, Table 4 shows that dairy farms are the most profitable farm type per ha in the ROI:

Table 4: ROI farm type, average size and average income per hectare (2024)

Farm type	Size (ha)	Income per ha (€)
All	45	806
Tillage	72	574
Sheep	49	558
Dairy	70	1,557
Cattle rearing	32	432

y *Teagasc's* NFS involves surveying 1,000 to 1,200 farms annually, representing around 88,000 ROI farms. Smaller farms are part of a separate survey.

z Note that 'cattle rearing' adds up to 99%, this is not an error in the report – the *Teagasc* NFS data adds up to 99%.



In NI, gross margin per ha in 2022/23 for dairy cows was £3,612, for potatoes £2,662, spring oats £1,278 and winter oats £1,621.¹⁵⁴ Table 5 presents farm type and average incomes in 2024 in the ROI and NI, note different currencies are displayed:^{152, 155}

Table 5: National average income per farm type in the ROI (2024)

Farm Type	ROI (€)	NI (£)
Dairy	108,700	126,696
Pigs		164,747
Cattle rearing	13,800	
Cattle other	18,200	
Sheep	27,300	
Tillage	41,500	
Cattle and sheep in less-favoured areas		28,043
Cattle and sheep lowland		34,673
Cereals		36,277
Mixed		62,622
National average income	36,256	60,622

Differences in average farm income between jurisdictions may partly reflect variation in farm structure, enterprise type and the prevalence of smaller or part-time farms. Using the euro to pound sterling exchange rate of 0.8648 to convert the ROI farm national average income, Figure 43 shows the average 2024 farm income in both jurisdictions:^{152, 155}

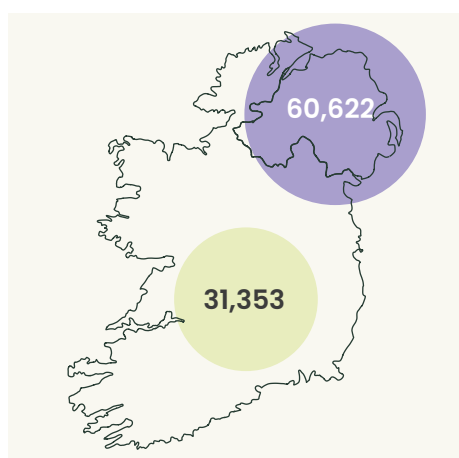


Figure 43: National average farm income in £ (2024)

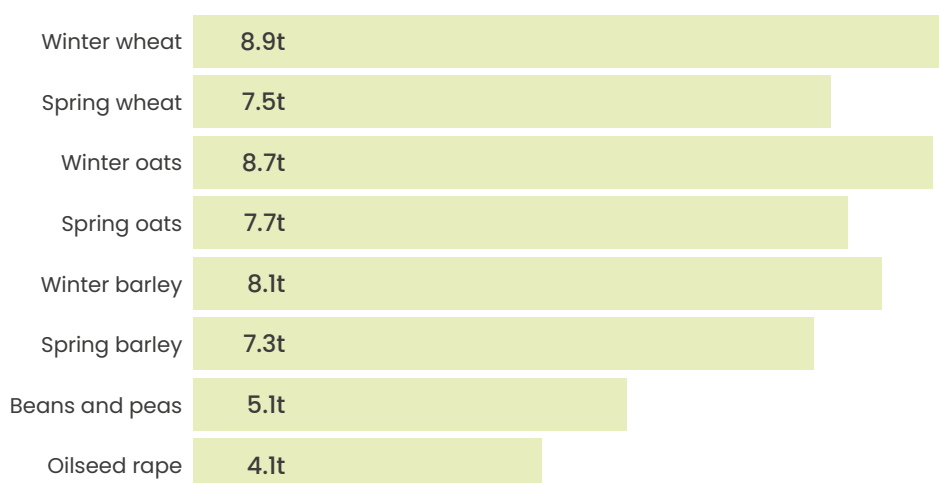
Revenue

Production costs are direct costs and overhead costs, which are dependent on the farm type. As a share of output value, production costs across the ROI farms were 61–76%.¹⁵² Definitions differ slightly from the ROI source, with DAERA calculating ‘total farm inputs’ and ‘total farm outputs’ inclusive of direct payments,^{aa} meaning that production costs as a share of output value ranged from 74–97%.¹⁵⁵

Yield

Here, ‘yield’ is not referred to in a financial sense, but as a production term. It refers to the physical quantity of **crop harvested per unit of land** (e.g., tonnes (t) per ha). A higher yield does not always guarantee higher profit if input costs are also high. Figure 44 displays the yield of selected crops in tonnes per ha for the ROI:¹⁵²

Figure 44: ROI yield of selected crops in tonnes per hectare (2024)



In the ROI, the production of the three main cereals (wheat, barley and oats) decreased in 2024, while beans and peas production increased and oilseed rape production had decreased.¹⁵⁶ Production and harvesting conditions were challenging on ROI tillage farms during 2023 and the first half of 2024 as unfavourable weather resulted in delayed planting and reduced yields for winter crops. Once the weather improved later in 2024, the NI average farm’s output increased by 8% in 2024, largely due to higher spring barley yields.¹⁵⁷

In 2025, **total cereal production** in the ROI was estimated to be 2.23m tonnes, above the [2020–2024] five-year average of 2.1m tonnes. Despite higher production levels, grain prices lag behind rising input and production costs, meaning that margins for tillage farmers remain under pressure.¹⁵²

aa Direct payments ~ Government support



In NI, estimates^{ab} of crop yields and production in 2021 showed increases in cereals and barley and a decrease in potatoes compared to the previous year.¹⁵⁸ Figure 45 displays the yield of selected crops in tonnes per ha for NI:¹⁵⁸

Figure 45: NI yield of selected crops in tonnes per hectare (2021)



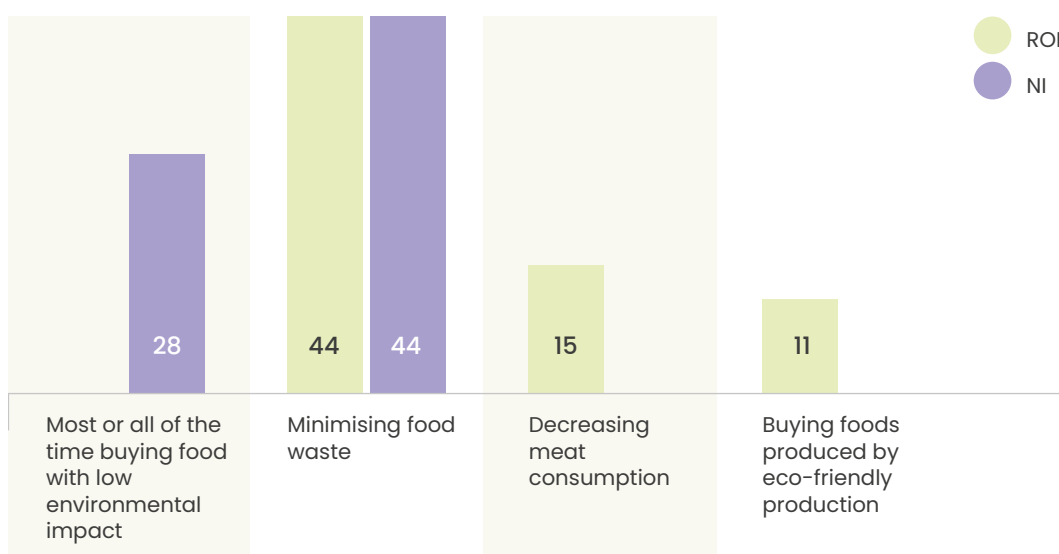
The total area of crops grown in NI in 2024 was approximately 46,795ha, representing a 2% decrease from 2023.¹⁶

Value chain configuration

Consumer habits

Increasingly, convenience and cost are reconfiguring the value chain as businesses respond to changing consumer habits. The *Voice of the Consumer* study conducted by PwC^{ac} with ROI participants found that 41% sought locally-produced foods and 32% preferred products using minimal packaging.¹⁵⁹ Businesses must also consider sustainability as research shows that adults across the Iol are taking steps to be more sustainable around food (Figure 46):^{68, 69}

Figure 46: Percentage of adult consumers carrying out sustainability actions in the ROI and NI



ab DAERA estimated cereal yields based on a post-harvest survey with 235 farms. Potato yield estimates are based on surveying approximately 70 farms.

ac PwC: PricewaterhouseCoopers.



In terms of consumer trust in the supply chain, consumers in NI trust farmers (88%), shops and supermarkets (84%) and restaurants (83%) more than takeaways (68%) and other food delivery services such as *Deliveroo*, *Uber Eats* or *Just Eat*.⁶⁷

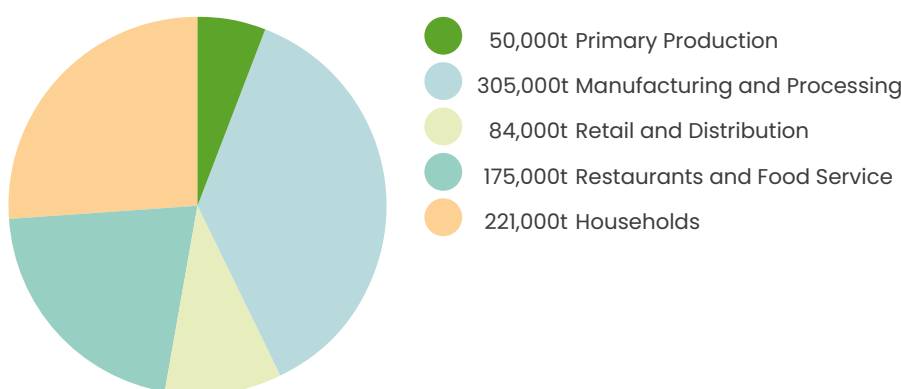
Degree of structural reconfiguration

No data could be identified for this food system issue (in the economic quadrant of the Compass (Figure 28)). This refers to: The extent or magnitude of change applied to the arrangement of parts, components or connections of a system to adapt to new environments or requirements (see Appendix glossary).

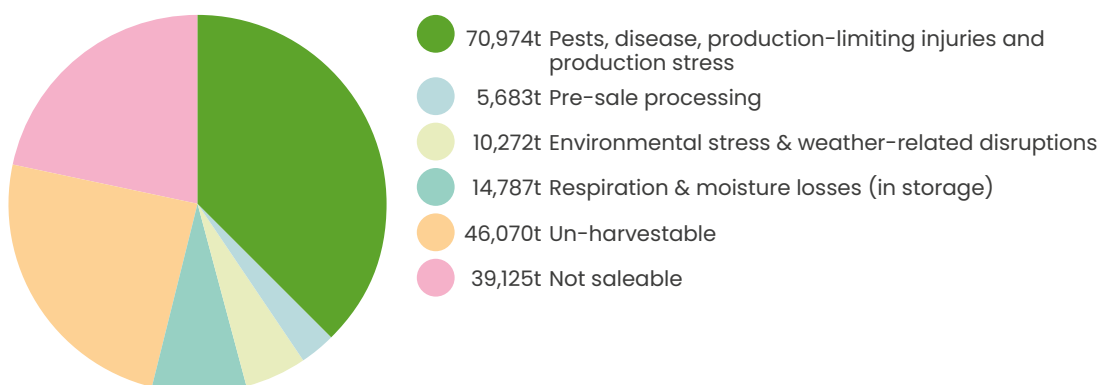
Food loss

Food loss data could not be identified for NI; however, research by the EPA in the ROI established that the majority of food is lost during manufacturing and processing (37%), with the remainder split across household, food service providers and other production and distribution systems (Figure 47).⁴²

Figure 47: ROI food loss in tonnes (2025)



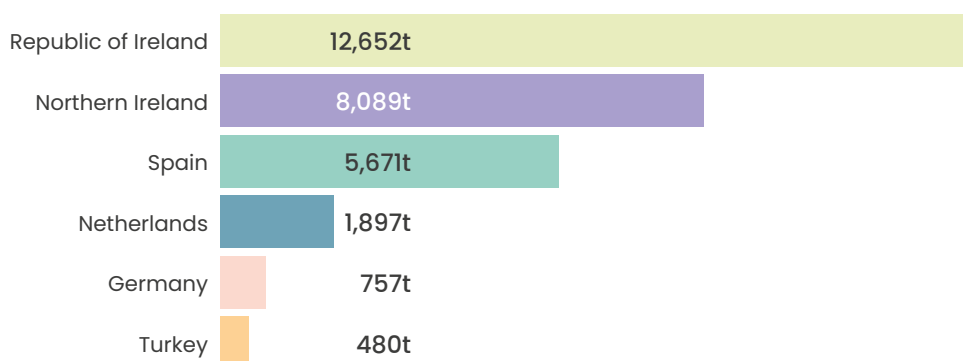
Since 2022, the EU *Waste Framework Directive* has required EU members to report food waste from each supply chain stage. It can be challenging to calculate food losses and waste (FLW) for primary production. Figures for national FLW data in the ROI, published in the *Journal of Environmental Management*, showed that 63% of FLW in primary production is considered food loss and the remaining 37% is food waste. Predominant areas of FLW in the ROI include vegetable production (122,398t), meat production (41,726t) and tillage (12,502t).¹⁶⁰ This pie chart illustrates that approximately a quarter of FLW is un-harvestable crops (Figure 48).¹⁶⁰

Figure 48: ROI food loss and waste in primary production in tonnes (2023)

Equivalent datasets for NI could not be located.

Packaging

The data available for packaging varied across each jurisdiction. Statistics from the EPA show that in 2023, the ROI generated almost 1.2m tonnes of packaging waste, 59% of which was recycled (700,000t). Also, the ROI missed its mandatory EU 2025 recycling target of 65% as only 59% was recycled.¹⁶¹ NI data from *My Recycling NI* shows that in the 2023/24 financial year, 31,031 tonnes of plastic was recycled, 72% of which was exported out of the UK (Figure 49):¹⁶²

Figure 49: NI top six destinations for plastic recycling (tonnes) (2023/24)

Responsible sourcing

Sales of **Fairtrade** products in the ROI in 2024 generated approximately €2m in Fairtrade premiums for farmers and workers across producing countries outside the ROI, particularly for coffee, banana and cocoa producers.¹⁶³ Equivalent data for NI was limited.

Competitive positioning

Commercial risk management

This is a capability which is reflected by the degree of exposure to market and input volatility and also the variability of economic outcomes over time. As mentioned, only 43% of ROI farms in the *Teagasc* 2024 NFS were classified as economically viable.¹⁵⁸ This suggests that a significant proportion are vulnerable to income shocks and may struggle to absorb market volatility. Lower-income farms are more reliant on support payments, increasing their exposure to changes in agricultural policy and subsidy regimes. The NFS presents FFI and off-farm income via direct payments as a percentage of FFI. In 2024, the national average of direct payments was 59% as a proportion of FFI. Average percentages range from 22% (dairy farms) to 129% (cattle rearing).¹⁵²

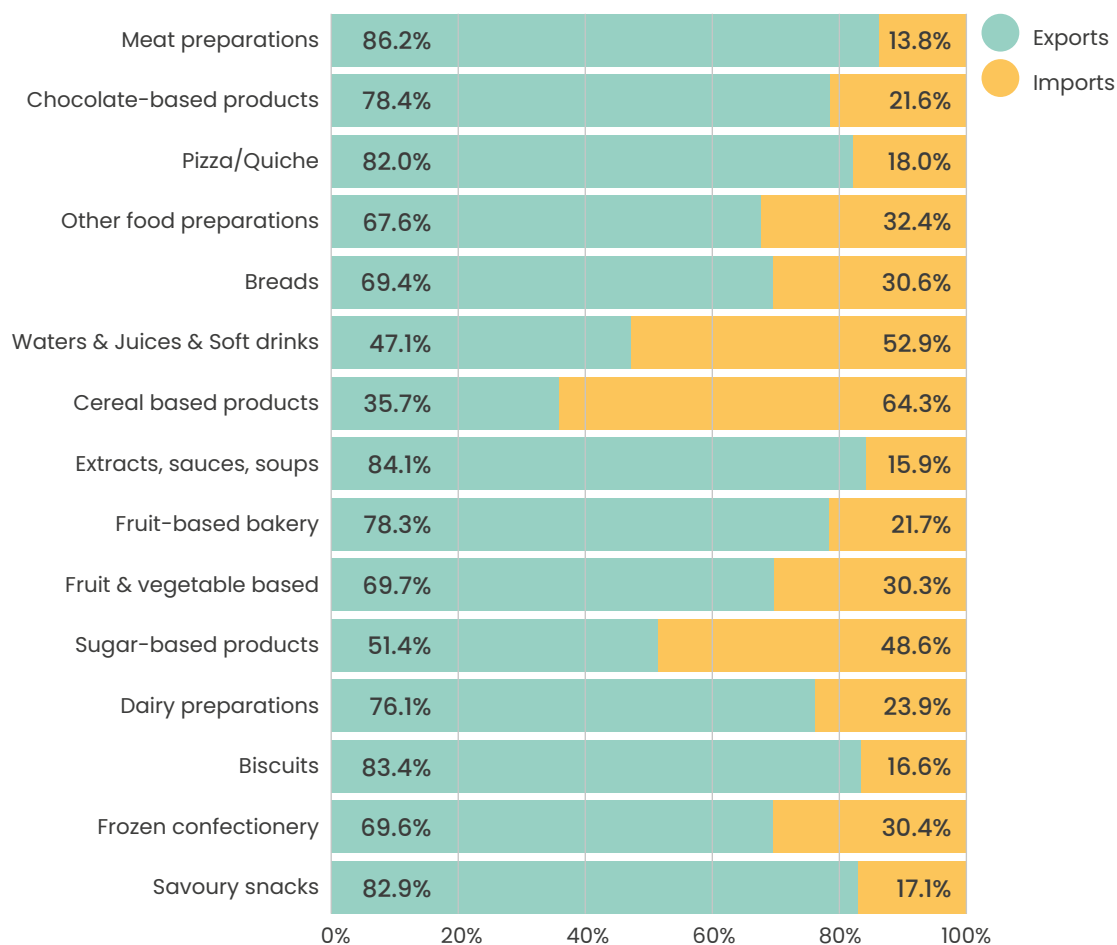
Food self-sufficiency

The ROI's self-sufficiency for **total meat** increased from 230% to 233% in 2024.¹⁶⁴ Nonetheless, the ROI imports 20% of the **chicken** consumed and 80% of **fruit and vegetables** are imported.¹⁶⁵ The ROI is 36% self-sufficient in its **animal feed** for beef and dairy production.¹⁶⁵ Whilst the ROI is 75–90% self-sufficient in **cereals**, in NI cereal self-sufficiency is approximately 25%.¹⁶⁶ The Ulster Arable Society states that NI would be more self-sufficient if it grew more barley in case of price hikes or grain import being impacted.¹⁶⁶

Trading relationships

The ROI **exports** food and drink products to 180 countries worldwide whereas NI exports to over 70 countries.^{2, 13} As aforementioned, a number of large dairy processors work cross-border, between the North and South, with products moving freely.¹⁰⁶ In 2024, the ROI exported €671m of prepared consumer foods to NI, whilst importing €334m. See 'Market & Trade' within section 2.3 for a full table. Figure 50 clearly illustrates that meat preparations are the largest export and waters, juices and soft drinks are the largest import, followed by cereal-based products imports.¹³ Figure 50 presents [Table 3](#) as percentages.



Figure 50: Cross-border trade from the ROI to NI (2024)

In 2025, agri-food exports from the ROI were €18.1bn and in 2021, NI exports were £5.1bn.^{13, 167} This treemap chart shows destinations of export sales from NI in £m, with over 60% going to GB. 'Rest of Europe' refers to everywhere in Europe except the ROI and 'Rest of the world' refers to everywhere in the world except GB and Europe (Figure 51), figures are in £m.¹⁶⁷



Figure 51: NI food and drink export destinations in £m (2021)

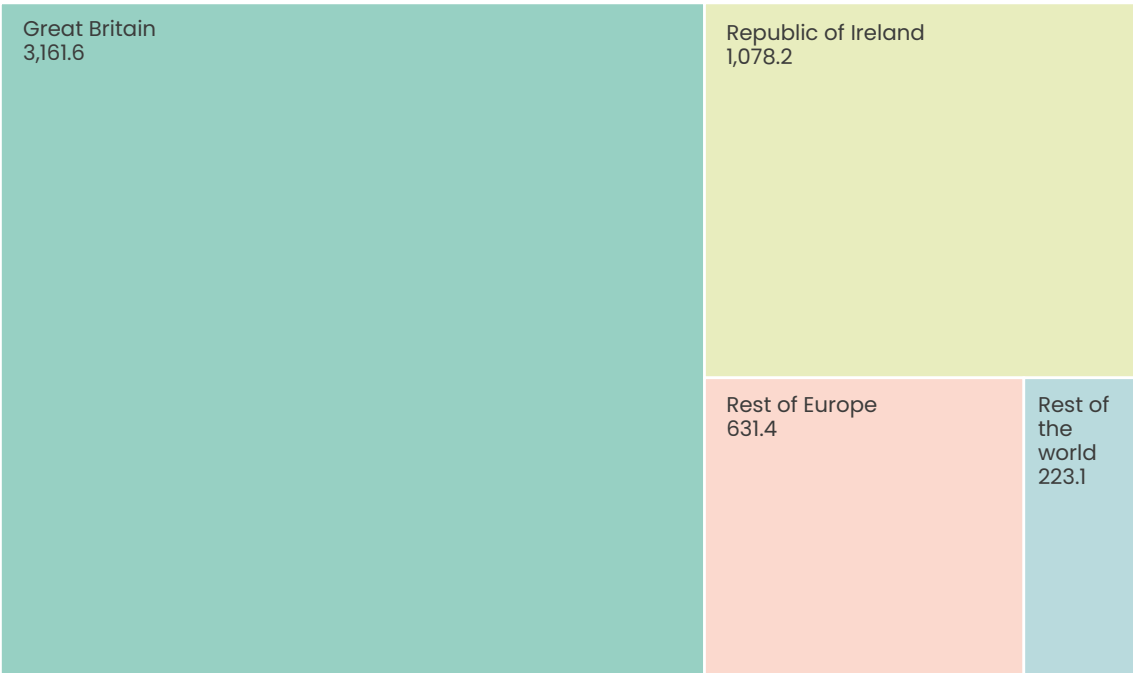


Figure 52 uses data from the top 20 agri-food export destinations for the ROI in 2024, which make up 92.6% of total export value. ‘Rest of the world’ refers to everywhere in the world except GB and Europe and is largely made up of exports to the United States (€1912m), figures are in €m.¹³

Figure 52: ROI food and drink export destinations in €m (2025)

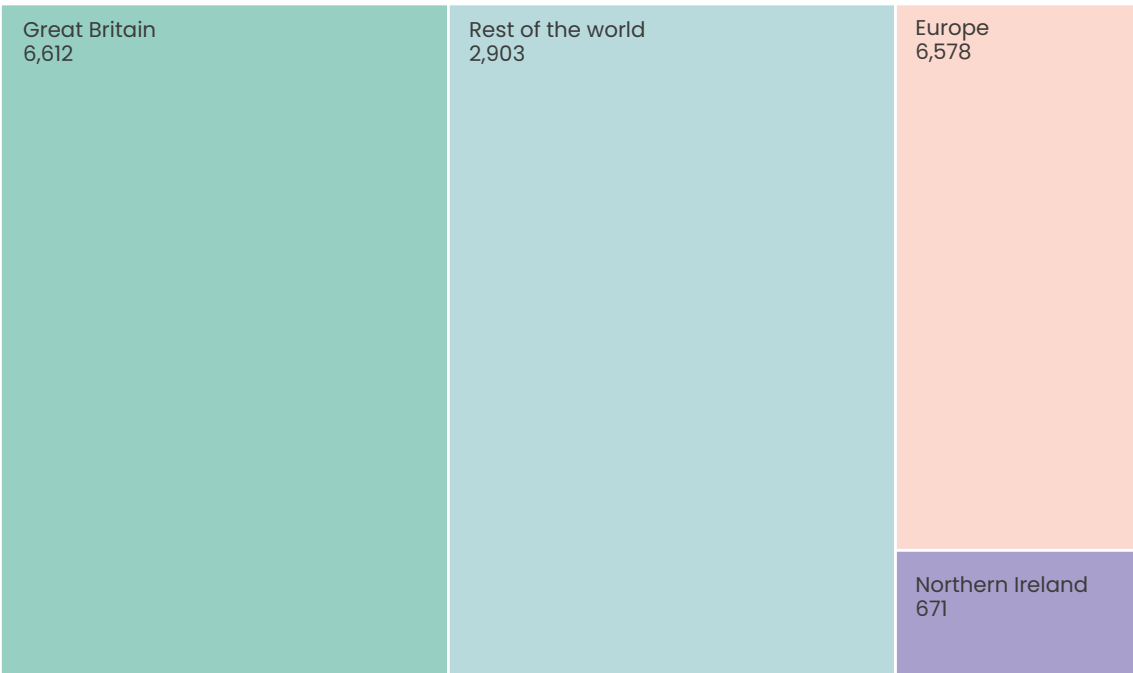
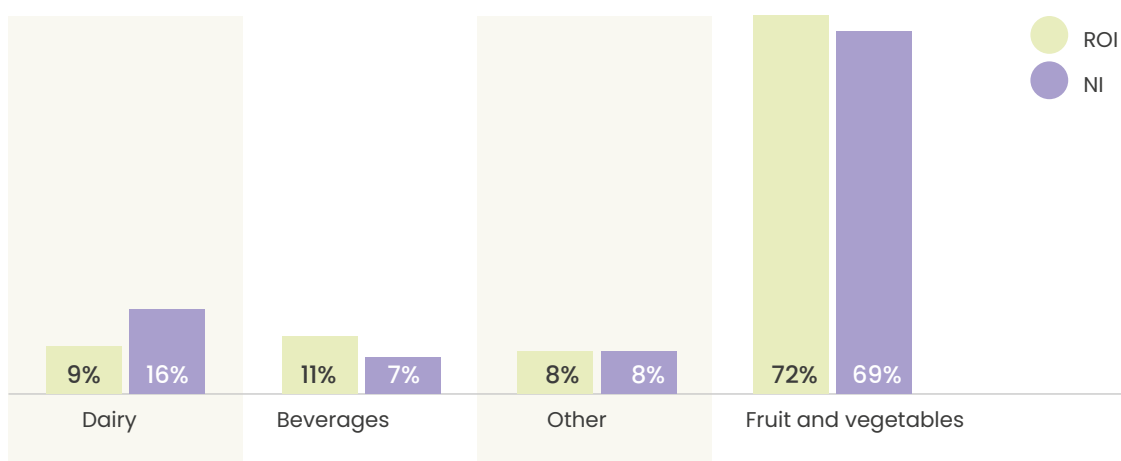


Figure 53 displays the composition of agri-food exports for dairy,^{ad} ruminant meat,^{ae} pigmeat, beverages and 'other.' In both jurisdictions, the majority of imports fall outside dairy, beverages,^{af} fruit and vegetables, reflecting the importance of feed, cereals and intermediate processing inputs:^{13, 17}

Figure 53: Percentage composition of agri-food exports in the ROI (2024) and NI (2022)



In the ROI, 'other' includes animal feed (14%), cereal and cereal preparation (10%), poultry (4%) and coffee, tea, cocoa and spices (7%). In NI, 'other' comprises beef and sheepmeat (£441.8m), bakeries (£135.7m) and eggs (£8.7m). The ROI is clearly more dairy-weighted whereas NI is more ruminant-meat-weighted as this category represents £1,431.8m sales:^{13, 17}

Dairy and beef are key exporting products for the ROI, as indicated in Table 6 which presents the key export categories out of the ROI:¹³

Table 6: ROI values of key export categories (2025)

ROI exports	Millions (€)
Dairy	6,400
Beef	3,000
Irish whiskey	1,000
Other beverages	1,000
Butter and cheese	1,000
Seafood	550

ad Dairy: In NI this is reported as milk and milk products (£1,306m) and in the ROI this is dairy produce, 34% of total export.

ae Ruminant meat: In NI this is reported as beef and sheepmeat (£1,431.8m) and in the ROI this is beef only, 16% of total export.

af Beverages: The main products are bottled water, soft drinks, alcoholic beers and spirits.



3.3. Clean & healthy planet



// The global food system is the single biggest contributor to biodiversity loss, deforestation, drought, freshwater pollution and the collapse of aquatic wildlife//¹⁰

Atmosphere

Air quality

Air quality is measured by the EPA in the ROI and an hourly update is available for the *Air Quality Index for Health* online.¹⁶⁸ The UK's *Met Office* calculates **air pollution** via a *Daily Air Quality Index* (DAQI) and historic DAQI data from 2003 to 2019 is available online.¹⁶⁹ Data from the *European Platform on Life Cycle Assessment* (EPLCA) shows that 61.6% of **particulate matter** (i.e. soot, smoke, dust and chemicals) in the ROI atmosphere are as a result of food consumption.¹⁷⁰

Greenhouse gas emissions

Agriculture contributes significantly to the total greenhouse gas (GHG) emitted. The agri-food sector in the ROI contributes 37.8% to the jurisdictions total GHGe whereas in NI it is 30.8% (Figure 54).¹⁷¹

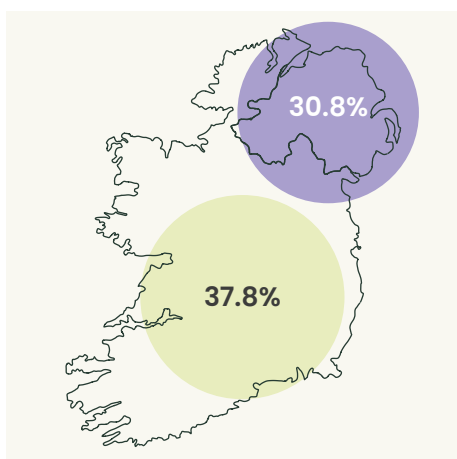


Figure 54: Percentage of greenhouse gases from agriculture in the ROI and NI

Data reporting GHG emissions (GHGe) change from 1990 to 2023 is available for both jurisdictions. In the ROI, GHGs have decreased by 3.3% since 1990.¹⁷² In NI, GHGs have decreased by 31% in the same time period.¹⁷³ These figures should not be compared as population and economic growth in the ROI has been significantly higher than NI's over the time period. Agriculture remains the largest emitter of all GHGs across both jurisdictions.^{173, 174} **Agricultural GHGe** in the ROI fell by 4.9% between 2022 and 2023, predominantly due to a 18.2% decrease in use of synthetic nitrogen fertiliser.¹⁷⁴ Over the same time period in NI, agricultural GHGs fell by 1.6% due to 14% less manufactured fertiliser being purchased and there was a 4% decline in beef cattle numbers.⁸⁷



ROI agricultural GHGs are made up of methane produced by the rumen of cattle and sheep (58%) and methane from manure and slurry storage (10%) and 32% from other agricultural sources. NI's GHGe consists of a higher proportion of methane (30.2%) compared to the UK's average of 15%.¹⁷³ Moreover, the ROI GHGe intensity per € output in 2022 was rated 1.7 for milk and double for beef output (3.6).¹⁷⁵ Figure 55 displays the methane percentage of the agricultural GHGe from each jurisdiction.^{173,176}

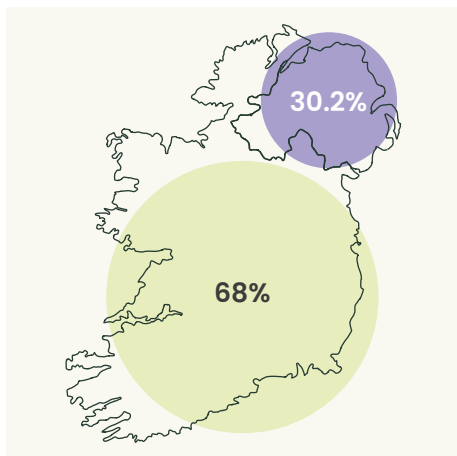


Figure 55: Percentage of overall agricultural greenhouse gas emissions from methane in the ROI and NI

Research in NI found that the food groups: 'tea, coffee and water,' 'burgers, sausages, kebabs, meat pies and other meat and meat products' and 'alcoholic beverages' were key contributors to overall dietary GHGe.¹⁷⁷ According to the *Climate & Health Alliance*, the GHGs from a typical ROI adults' diet exceed planetary boundaries by 226%. The planetary boundary is 1.87kg CO₂ equivalent, yet the typical ROI is estimated to be 4.31kg CO₂ equivalent.¹⁷⁸

Water vapour

No data could be identified for this food system issue in the environmental quadrant of the *Compass* (Figure 29). This refers to: Water vapour is the most abundant greenhouse gas. It increases as the Earth's atmosphere warms but unlike CO₂, which can remain in the Earth's atmosphere for centuries, water vapour persists for only a few days. Increased water vapour can lead to pathogen development in crops (see Appendix glossary).

Biosphere

Biomass

No suitably aggregated data could be identified for this food system issue in the environmental quadrant of the *Compass* (Figure 29). This refers to: Biomass is organic, non-fossil material of biological origin (plants and animals). For example, standing crops. *Eurostat* provide biomass per thousand cubic metres for other European countries, but not the ROI.¹⁷⁹



Functional biodiversity

A metric for functional biodiversity is **pollinators**; for example, bees, wasps, moths, beetles and butterflies. The *All-Ireland Pollinator Plan*, coordinated by the *National Biodiversity Data Centre* is currently underway as 30 out of 99 wild bee species are at risk of extinction in the ROI.¹⁸⁰

In terms of **financial value**, wild pollinators accounted for 23% of total yield from ROI pollinator-dependent crops in 2018. Ecosystems supporting ROI crop pollination are largely forests and woodlands (46%), followed by grasslands (31%) and croplands (23%) in addition to inland wetlands and heathlands or shrubs.¹⁸¹ Annually in the UK, over £690m worth of crops are pollinated, meaning that this area of functional biodiversity provides a service worth approximately £1.8bn. In NI, wild pollinators assisting apple production provides a service worth over £7m.¹⁸²

Genetic diversity

The *Food Systems Dashboard* (FSD) site defines **agrobiodiversity** as the variety of plants, animals and microorganisms – ranging from genetic to ecosystem levels – used for food and agriculture. The FSD rates agrobiodiversity from 0 to 100 on an index and positioned the ROI at 61.9 in 2020.¹⁸³ No similar data on agrobiodiversity in NI could be identified.

The **biodiversity impact of food consumption** in the ROI is estimated at 331.3 species-years per trillion people, a standardised metric used to express very small per-capita impacts. This metric represents a modelled contribution to biodiversity loss, such as habitat loss, land use change and species decline in the ROI. While the impact attributed to an individual is extremely small, it becomes significant when accumulated across the population.¹⁸³

Net primary productivity

Net Primary Productivity (NPP) is typically derived from earth observation data or estimated using vegetation process models. While no readily accessible aggregated NPP dataset exists specifically for NI or the ROI, the *Copernicus Land Monitoring Service* provides spatially explicit vegetation productivity data across Europe, including NPP, which can be used to assess patterns of ecosystem productivity in the ROI.¹⁸⁴

Species richness

An example of species richness is **farmland bird species**, which has declined across the ROI. In NI, the abundance of 17 commonly monitored farmland bird species has fallen by 43% since 1996.¹⁸⁵ The number of common farmland birds in the ROI fell by 8% from 1998 to 2024.¹⁸⁶



Geosphere

Non-renewable resources

Food systems are highly dependent on non-renewable resources, particularly **fossil fuels** and mineral fertilisers which underpin energy-intensive activities such as transport, processing, refrigeration, storage and packaging.¹⁸⁷ Globally, food systems are estimated to consume approximately 15% of fossil fuels, with major contributions arising from food processing and packaging (42%), retail and kitchens (38%) as well as farming and agrochemical inputs (20%).¹⁸⁸

Data from the EPLCA indicates that food consumption in the ROI contributes to wider resource demand, accounting for 16.2% fossil fuel usage and 8.7% of mineral and metal use.¹⁷⁰

Both the ROI and NI remain heavily dependent on fossil-derived energy sources despite increasing renewable energy generation. In the ROI, oil and oil products accounted for 47.4% of total energy supply in 2024, followed by natural gas at 33.1%.¹⁸⁹ In NI, petroleum products accounted for approximately 57% of final energy consumption in 2024, while road transport represented over one-third of total demand.¹⁹⁰ Agriculture and fisheries in both jurisdictions continue to rely substantially on fossil-derived fuels, particularly gas and oil.^{191, 192}

Soil carbon

Peatlands sequester^{ag} large amounts of carbon dioxide (CO₂) and are an important climate mitigation resource. Peat covers 3% of the Earth's land surface, but a larger proportion in the ROI (13.8%) and NI (12%). In NI, 53% of the soil carbon is held in peatlands.^{193, 194} Equally, peat holds around 53% of ROI's carbon stock.¹⁹⁵ In 2021, net GHGs in NI were estimated to be 22.5m tonnes of CO₂ equivalent (MtCO₂e). This was lower than the 23.7 MtCO₂e produced due to an offset of 1.2 MtCO₂e of emissions removed via carbon sequestration.¹⁹⁶

Soil degradation

Soil degradation can be assessed through indicators such as soil biodiversity, erosion and compaction. The *European Soil Data Centre* (ESDAC) presents average **soil erosion rate** in metric tonnes per ha per year (t ha⁻¹ yr⁻¹) at a scale of 0 to >10. Data from 2016 shows that mean soil erosion rate was either <1 or 1-2 across the Iol. The percentage of agricultural area under severe erosion in 2016 was 1-2% across NI and <1% in the ROI.¹⁹⁷ ROI soil compaction, often resulting from heavy machinery and livestock, can be assessed using soil bulk density indicators, with relevant datasets available through ESDAC.¹⁹⁸

Soil erosion and deposition

Historically, **soil erosion** was more widespread as farmers increased their cultivation of the land to support the growing pre-famine population.¹⁹⁹ Data from the CSO shows that in 2016, 0.67% of ROI soil was eroded by water.²⁰⁰

ag Sequester: Removes carbon dioxide from the atmosphere.



Hydrosphere

Freshwater extraction

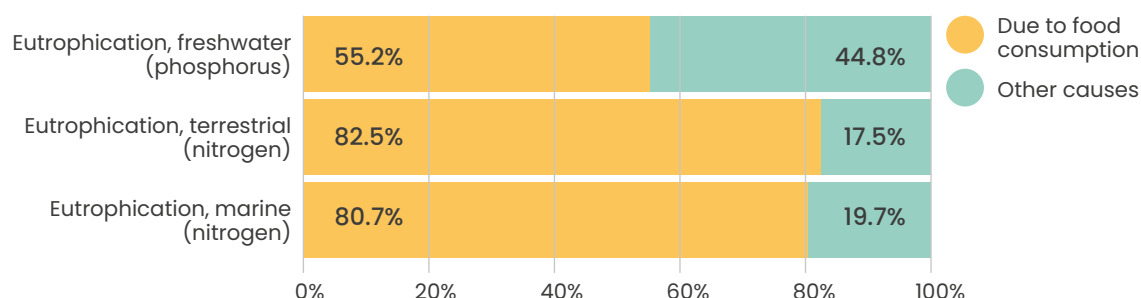
The ROI's **water stress** in 2021 was 8.3%.²⁰¹ No water stress figure could be disaggregated from UK figures to represent NI. There is no ready-made dataset isolating **freshwater extraction** specifically for food production and processing for the ROI and NI. Further, there is no government dataset reporting blue water (surface and groundwater) used for food production and processing as a single aggregated number. Data provided by the CSO, i.e. 'Average and Median Domestic Metered Public Water Consumption' are not considered accurate indicators for agricultural or agri-food industry usage.^{201, 202}

Nitrogen and phosphorous loading

// Nitrate and phosphorus help plants grow. Too much of these nutrients in water can cause over growth of aquatic plants and algae which leads to eutrophication. The excessive growth out-competes other plants, uses up dissolved oxygen and blocks light to deeper waters, leading to imbalances in the ecosystem//²⁰³

When average levels of river phosphorus exceed 0.035mg/l^{ah} this is detrimental to the ecological status. In 2023, 27% of rivers and 35% of lakes in the ROI exceeded this level of phosphorus.²⁰⁴ EPA research identified that nitrogen levels in ROI rivers increased by 16% from 2024 to 2025 and agriculture was the primary source for this increase.²⁰³ The majority of nitrogen and phosphorus loading in ROI waterways is due to food consumption.^{203, 205} Figure 56 displays the percentage of **nitrogen and phosphorous loading** in ROI waterways.¹⁷⁰

Figure 56: ROI percentage of nitrogen and phosphorus loading of waterways



ah Milligrams per litre.



Water quality

Water body status has stagnated across the Iol. Data for NI in 2021 shows that 31% were classified as 'good' or 'better' ecological status, similar to 2015 at 32%.²⁰⁶ Similarly, in the ROI there is little change – a decline of 0.5% in the number of lakes monitored to have a 'high' or 'good' ecological status from 2016-2021.²⁰⁵ Please note that there may be differences in the reporting of water body status between the jurisdictions; hence these percentages should not be considered to be derived from equivalent methodologies (Figures 57 and 58).^{205, 207}

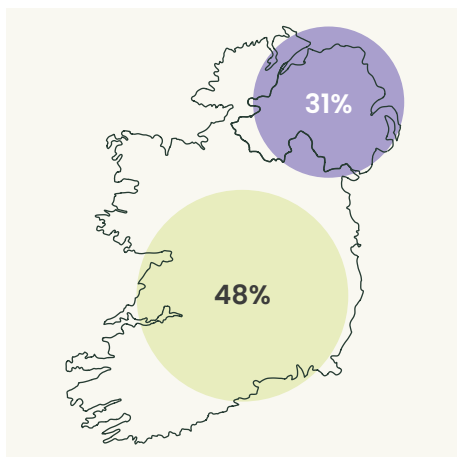


Figure 57: Percentage of river water bodies rated as 'good' or 'high' quality in the ROI (2025) and NI (2024)

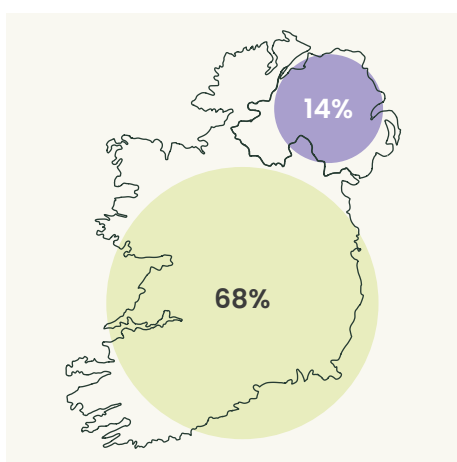


Figure 58: Percentage of lake water bodies rated as 'good' or 'high' quality in the ROI (2025) and NI (2024)

Water temperature

Rising inland water (i.e. river and lake) temperatures linked to climate change can cause **'thermal stress' for the fish population**. In early 2026, Inland Fisheries Ireland (IFI) introduced a warm water protocol to protect cold water species.²⁰⁸

3.4. Just, ethical, fair & culturally meaningful food system

Due to differences in how data are collected and reported across original sources in the ROI and NI, these figures should be interpreted as indicative of broader food system characteristics rather than precise equivalents between jurisdictions (particularly figures 63 and 68).

Right to food

Access

// Food insecurity is when a household has 'run out of food and been unable to afford more and/or reduced meal size, eaten less, gone hungry or lost weight due to lack of money' //²⁰⁹

The ROI is ranked as the second most food secure country in the world according to the *Global Food Security Index* of 113 countries.²¹⁰ There is no aggregated data at a NI level. However, estimates of food insecurity prevalence are available for both jurisdictions using different measurement approaches. In the ROI, 5.4% of the population are classified as moderately or severely food insecure according to FAO measures.^{211, 212} Whereas in NI, 27% of the population are reported to have low or very low food security.¹²⁵ These figures are not directly comparable, as the Northern Ireland measure captures a broader spectrum of food insecurity, including less severe forms of food-related stress and uncertainty.

Food poverty is another relevant concept^{ai} that focuses more specifically on material deprivation and affordability, which is generally measured through indicators such as being unable to afford regular nutritious meals or skipping meals due to lack of money.²¹³ Food poverty is a measure used by both the *Department of Social Protection* (ROI) and *Department of Health* (NI), so is a better proxy for assessment of current status on the Iol (Figure 59):^{214, 215}

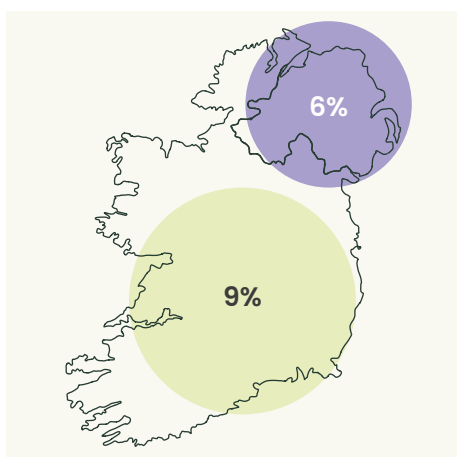


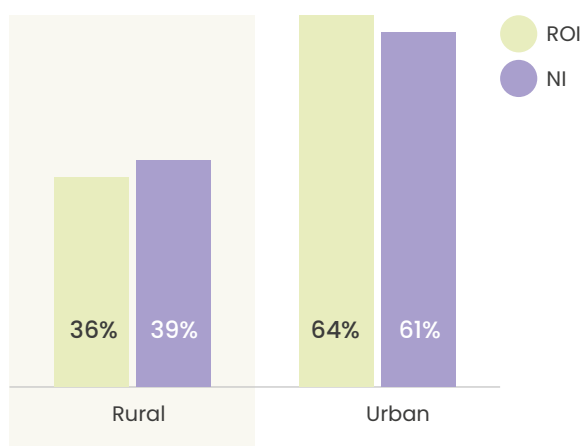
Figure 59: Percentage of food poverty rate in the ROI (2024) and NI (2025)

ai Food poverty and food insecurity are related but distinct concepts measured using different indicators.

In terms of access to **food banks**, a *Barnardo's* and *Aldi* survey of a representative ROI sample of 1,000 adults with children found that in October 2022, 10% had used a food bank.²¹⁶ In NI, *Trussell Trust* research with the general population identified that 7% of households access support either through food banks or low-cost food aid at a social supermarket.²⁰⁹ The *Trussell Trust* also reported that emergency food parcel distribution in NI decreased by 26% between 2023 and 2025.²¹⁷ Note, these figures are derived from different survey populations and reporting approaches, this may partly explain any inconsistencies.

Aside from food insecurity and food poverty, another indicator for 'access' is proximity to food shops. Figure 60 shows that across both jurisdictions, a similar proportion of the population **live rurally**:^{87, 88}

Figure 60: Percentage of the population living in rural and urban areas across the IoI (2024)



In NI, households in remote rural areas typically have lower average incomes than households closer to urban areas, particularly Belfast. Research by the *Consumer Council NI* has found that rural consumers are at a disadvantage for food shopping. 95% use a car and travel on average 6.64 miles for their food shopping compared to 2.54 miles for urban consumers. Only 10% of rural consumers have viable public transport for accessing food retailers. As rural consumers have a more restricted access to national supermarkets, they often rely on convenience stores which are typically more expensive. Consequently, rural households' weekly food shop costs approximately 20% more (£116.66) compared to urban households (£94.82).²¹⁸ The *Trussell Trust's Hunger in Northern Ireland* report highlights that there is a data gap in determining whether rural or urban consumers are more or less likely to be food insecure.²⁰⁹



Likewise, *Safefood* research found purchasing a healthy food basket in the ROI was cheaper for urban households compared to rural households.⁷² Research in 2023 involving 152 individuals living rurally in the ROI found that 24% reported at least one of the *UN's Food Insecurity Experience Scale* measures in the last six months.²¹⁹ Qualitative research concerning child poverty in the ROI identified that a lack of transport and the requirement to purchase food in higher priced convenience stores meant many lived in a food desert.^{aj, 220}

Globally, 60% of consumers are **worried about the cost of food**. In the ROI this is 71% and in NI 92% are concerned about the cost of food. This is largely due to the cost-of-living crisis, meaning 66% NI consumers state they are spending more on food and groceries than they were 12 months ago and 31% were spending longer trying to identify the best deals.^{159, 221}

Agency

// Agency is an individual's capacity to make decisions and act upon their food environment when purchasing, preparing and consuming food //

This report uses **cooking from scratch** as an indicator of agency. A *Barnardo's* survey identified that 28% of ROI parents did not have enough time to cook and 20% did not cook from scratch. Research by the FSA found that 18% of NI consumers stated they did not have time to spend preparing and cooking food.^{67, 216} Another study highlighted that compared to ROI parents, NI parents were less likely to enjoy cooking and more likely to cook with processed meal components (i.e. frozen breaded meats and jars of sauces). NI parents also had less confidence cooking from scratch with basic ingredients, following a recipe and preparing new dishes.²²²

Research from *Barnardo's*, the academic literature and *Nestlé* demonstrates that consumers in the ROI and NI appear to have a moderate level of **agency in dietary sustainability** choices, as shown in Table 7:^{216, 223, 224}

aj Food desert: neighbourhoods and communities that have limited access to affordable and nutritious foods.



Table 7: Consumer agreement with agency in dietary sustainability statements in the ROI and NI

Agreement with the following statements	ROI	NI
Feel it is important to buy food which has a low environmental impact		82%
Actively look for and purchase sustainably produced food products	51%	
Checked for information about the environmental impact when purchasing food at least half the time		67%
Not interested in eating more plant-based foods	45%	
Reducing red or processed meat consumption 'some of the time'	22%	
Eating more home-cooked meals	59%	

Research by *Teagasc* surveyed almost 1,000 ROI adults, splitting consumers into three categories: 'indifferent' (69.1%), 'engaged' (16.5%) and 'struggling' (14.4%). Engaged consumers were highly motivated to purchase animal-derived products with high welfare and their motivation translated into action. Struggling consumers were concerned about animal welfare but found a lack of information, choice and insufficient availability prevented them from purchasing high welfare products. Lastly, indifferent consumers had positive perceptions of Irish animal welfare so did not specifically search for higher welfare products.²²⁵

Cultural appropriateness

It is difficult to quantify factors such as ethnicity, food history, religious preferences and social aspects around food.²²⁶ Across the IoI, ethnic diversity is growing and ethnic minorities made up 12% of the population in the ROI while the proportion of the population in NI is 3.4%, which remains the 'least diverse' part of the UK.^{227, 228} Cultural appropriateness within the food system can be assessed through indirect indicators such as the availability of culturally specific food outlets and the provision of religiously appropriate meals in institutions (schools, hospitals, government offices). For example, although the proportion of Muslims is increasing in the ROI (1.62% of population) and NI (0.6% of population), halal school food provision is not standardised or embedded in policy.^{229, 230} Although data is available on fast-food outlet sales,²³¹ no comparable datasets pertaining to culturally diverse food options such as ethnic supermarkets or takeaways could be identified.



Food culture

Food behaviour

// The habits and actions related to selecting, preparing, consuming and disposing food. Food behaviour is influenced by personal factors as well as the environment, society and culture //

One indicator of food behaviour is **OoH food consumption**, which forms an increasingly significant component of dietary intake across the Iol. In the ROI, the proportion of energy intake from OoH is 15% for adults aged 19- to 64-years-old.⁶⁸ FSA research indicates that 66% of NI respondents had ordered a takeaway or eaten food out of home (from a café, coffee shop or sandwich shop) in the last four weeks.⁶⁷ Of course, the food consumed OoH may not necessarily be unhealthy, but consumers are opting for food on-the-go due to busy lifestyles, convenience and higher disposable incomes.²³²

Food environment

Fast-food refers to energy-dense foods that are rapidly available for consumption on or off the premises, typically through counter-service outlets such as burger, pizza, kebab, chicken and takeaway establishments.²³³ Using this definition, there were 116.8 fast-food outlets per 100,000 of the population in NI. Almost one in five (17%) of schools in NI have five or more fast-food outlets within a 400-metre radius.²³⁴ Equivalent official data for fast-food outlet could not be identified for the ROI.

Figure 61 presents data from *Meaningful Vision*, showing the proportion of fast-food outlets in both jurisdictions, although it should be noted that no official ROI statistic could be identified and the aforementioned number for NI is significantly higher (116.8 per 100,000 people).²³¹

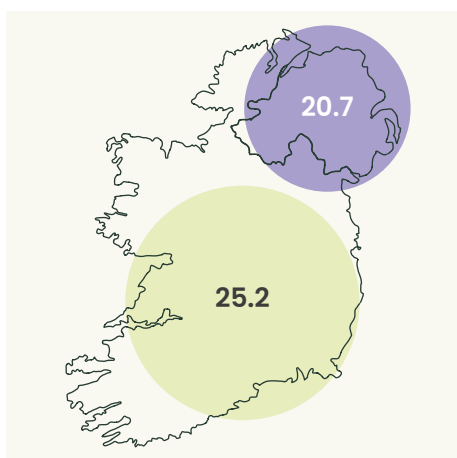


Figure 61: Number of fast-food outlets per 100,000 people across the Iol (2024)

NI research shows that the proposed **HFSS legislation** would mean that almost half (45.7%) of grocery retail premises would be in scope of the proposed location restrictions and 62.5% would be in scope of the volume restrictions. So, the policy would have considerable implications for the food sector in NI.³⁶

Food literacy

A review of ROI **food literacy** studies published between 2013 and 2023 established significant evidence gaps in consumer food literacy. Research with **parents** across the ROI and NI explored food literacy (i.e. confidence around food skills and cooking techniques). The study found that 75% of parents had learned basic cooking skills from their mother.²²²

Many studies featured narrow population samples, limited research methodologies and a lack of rigor around health literacy monitoring and evaluation.²³⁵ In terms of **food safety**, data from the FSA reveals that 69% NI consumers follow the recommended food safety practices around cleaning, avoiding cross contamination, cooking, chilling and use-by dates.⁶⁷ Other FSA research with NI consumers found that most respondents report that they often (i.e. always or most of the time) check the use-by (90%) or best before (90%) date when making food purchases.¹³⁸

Food waste

Whilst food loss occurs across the supply chain (section 3.2), food waste occurs at the **retail, food service** and **household** level. Food waste contributes 10% to global GHGe.²³⁶ Figure 62 shows how much food waste the average person throws away annually. Please note there may be differences in research methodology so these numbers should not be considered like-for-like.^{44, 237}

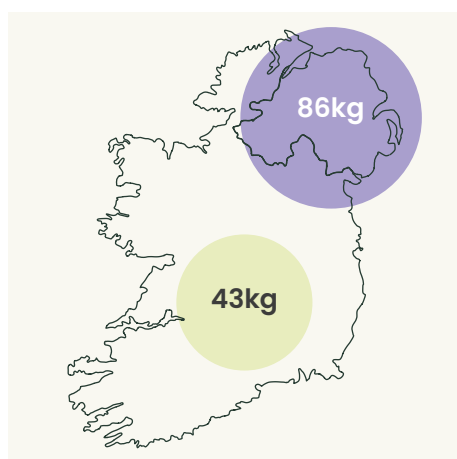


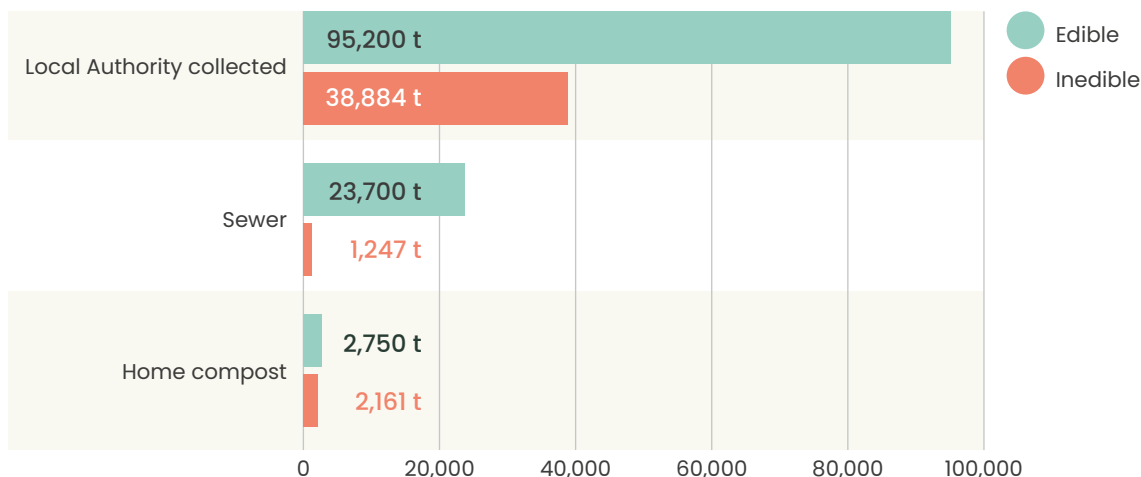
Figure 62: Annual food waste in kilograms per person in the ROI (n.d.) and NI (2024)

In NI, cited reasons why consumers discard edible food waste include (in decreasing order of weight or cost of the food waste): too much was cooked / prepared, the food smelled / looked off; personal preferences; and, past use-by / best-before label.²³⁷ A 2020 study of 2,062 ROI adults found that 62.56% were 'uncaring' consumers (largely 'young males') and the remaining 37.44% were 'caring' consumers (largely 'older females'). 'Uncaring' consumers produced on average 0.74kg food waste weekly whereas 'caring' consumer produced half this amount (0.37kg).²³⁸



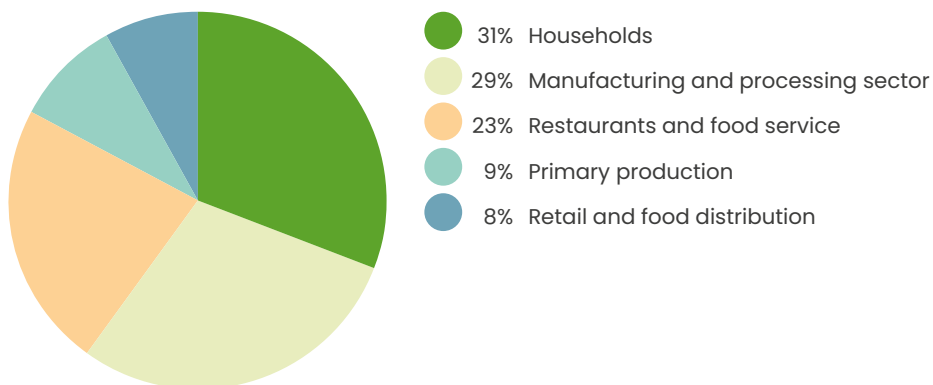
Research by *Waste Resources Action Programme* (WRAP) has found that a large proportion of the food waste thrown away in NI is **edible** at a Local Authority collection level (71%), sewage (97%) and in home composts (56%) (Figure 63):²³⁷

Figure 63: NI food waste in tonnes (2024)



No household-level data or metrics for edible versus inedible food waste for the ROI could be identified. But the EPA estimates that the ROI generated 770,316 tonnes of food waste in 2020. Figure 64 shows that households are the biggest producer of waste:^{42, 46}

Figure 64: ROI food waste (2020)



EPA research from 2018 states that within ROI **quick-service restaurants**, food waste is 63% edible and 37% inedible. The food waste is reported to be largely bread, vegetables, dessert and salads.²³⁹

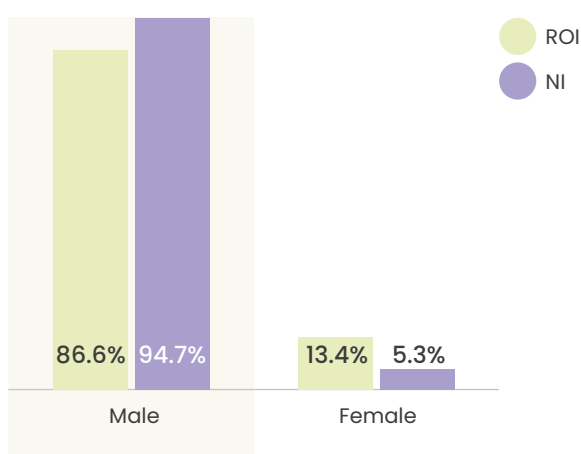
Social justice

Dignified work environments

Agri-food is a significant employment sector across the Iol. In the ROI, 171,400 are employed across farming, fishing and aquaculture sites.¹³ In NI, the farm workforce stood at 51,868 in June 2025.^{16, 22} Note different categorisations are used for each jurisdiction so these numbers do not equate to the same workforce.

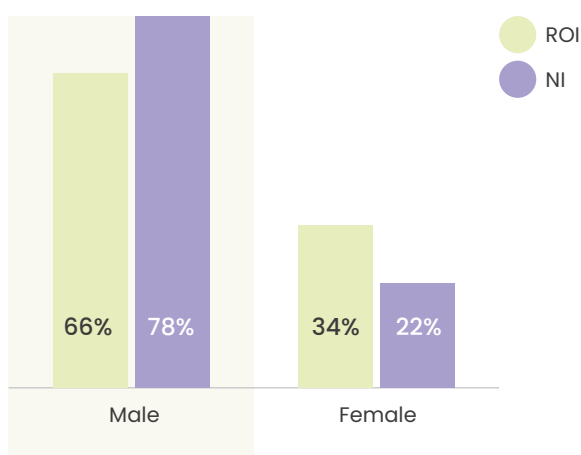
Although 53% of ROI farmholders stated that farming was their sole occupation, many farmers and their family working on small farms will have a second job that is their primary source of income.²⁴ The majority of **farmholders** are male across the Iol and this proportion is highest for dairy farmholders. Figure 65 presents the genders of farmholders across the Iol:^{19, 240}

Figure 65: Percentage of farmholders that are male and female in the ROI (2023) and NI (2024)



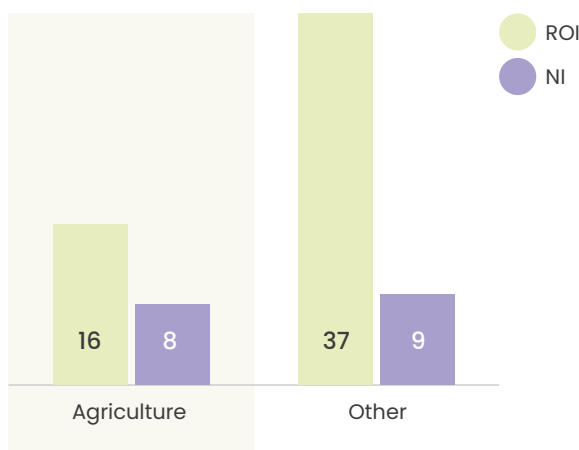
In the UK, 28% **farm workers** are female but in the NI this is lower at 22%. Figure 66 shows proportion of female farm workers in both jurisdictions (Figure 66):^{19, 240}

Figure 66: Percentage of farm workers that are male and female in the ROI (2023) and NI (2022)



From 2013 to 2023, the *Health and Safety Authority* (HSA) in the ROI observed a decline in **work-related fatalities**, but numbers still remained high for agriculture (n=16) and construction (n=11). In NI, almost half of all work-related fatalities were in an agricultural context and these deaths in agriculture largely affected self-employed workers (Figure 67):^{241, 242}

Figure 67: Number of workplace fatalities in agriculture and other workplaces in the ROI and NI (2024)



Living Wage is the average gross salary a single adult (without dependants) working full-time, needs to afford a socially acceptable standard of living.²⁴³ Based on the cost of a basket of goods and services considered necessary for an acceptable standard of living calculation, the Living Wage is €15.40 per hour in the ROI.²⁴⁴

The 2026 '**real** Living Wage^{ak}' is £13.45 per hour across the UK outside of London, higher than the NI government's National Living Wage (calculated via a fixed threshold approach) of £12.71 from April 2026 for people aged 21 and over.^{245, 246} Compared to the rest of the UK, NI has the highest proportion of employees paid below the 'real' Living Wage (203,000 workers) at 17.3% compared to the UK average of 14.6%.²⁴⁹

Social externalities

According to the FAO, unhealthy dietary patterns drive \$8 trillion in annual hidden costs of global agri-food systems.²⁴⁷ An example metric for the social externalities, or "hidden costs" of the food system is the **financial cost on healthcare**, for instance overweight and obesity. In the ROI, the total direct healthcare cost of overweight and obesity was estimated to be circa €1.1bn in 2025.²⁴⁸ In NI, overweight and obesity results in a total direct and indirect cost to health and social care of around £457m in 2015/16.²⁴⁹ More up-to-date estimated costs could not be identified for NI. These differences should be interpreted in the context of the ROI population being almost three times larger than that of NI and differing healthcare systems.

ak The 'real' living wage reflects the current cost-of-living crisis. The value is higher than the government's living wage.



Global analysis suggests that obesity and unhealthy diet are among the most important modifiable risk factors driving the burden of NCDs in the ROI. Addressing obesity alone was estimated to account for 66% of all avoidable new NCD cases, while combined action on obesity and unhealthy diet could deliver the majority of potential health and economic gains, including reductions in healthcare expenditure and improvements in workforce productivity and Gross Domestic Product.²⁵⁰

Environmental justice

Environmental externalities

// These are "hidden costs" that occur throughout food system activities (i.e. production to consumption) and may occur often outside the jurisdiction. //

Dairying contributes substantially to the ROI economy yet it could be argued that the price of milk is 'too cheap' as it fails to factor in the cost of **negative environmental externalities** such as GHGs and ammonia plus waterways being polluted with nitrogen and phosphorous.¹⁷⁵ *Environment Ireland* state that 18,300 tonnes of phosphorus is imported to NI annually for animal feed and fertiliser. However, 10,300 of these tonnes are surplus, with around 70% polluting soils and waterways. Since 2012, the phosphorous concentration in NI rivers has increased by 38%.²⁵¹

Recognition of nature's contribution to human wellbeing

A NI report by the NFFN states that decision-making processes consider the impacts on nature and climate secondary to other areas and this is detrimental to individual farms.⁹⁹ **Nature-based solutions** have numerous benefits that exceed the costs: creating jobs and skills as well as improving public health and wellbeing.²⁵² Publicly accessible urban green spaces in NI provide considerable public value annually for both mental wellbeing (£717m) and physical wellbeing (£318m).²⁵³ EPA research with ROI adults found that 89% agree that the environment is a valuable asset and 84% agreed that access to nature helped their mental health in 2020.²⁵⁴

Animal welfare

Treatment during production, transport and slaughter

In 2023, DAERA conducted 1,279 production site inspections for farmed animals. The overall *Welfare of Farmed Animals Regulations (Northern Ireland) 2012* compliance rate was 91%.²⁵⁵ No equivalent data for ROI animal welfare could be identified. Welfare considerations extend beyond on-farm conditions to include transport and slaughter, where factors such as stocking density, journey duration and handling practices can impact animal welfare.



Looking at the big picture

This report has highlighted the scale, complexity and interconnected nature of the food system across the ROI and NI. Farming and agri-food production are central to both jurisdictions, with beef and dairy representing dominant agricultural outputs and agri-food exports forming a major component of economic activity. Cross-border trade between the two jurisdictions is also substantial, illustrating the interconnected nature of the Iol's food system.

The report also demonstrates the economic significance of the food system. In the ROI, agriculture, forestry and fishing contribute €13.6bn in gross value added (GVA),¹⁰⁹ while in NI the food and drink manufacturing sector contribute £1.1bn, accounting for 2.2% of its total GVA.¹⁷ Across both jurisdictions, the food system supports employment, rural livelihoods and farming traditions, whilst generating value across production, processing, retail and food service activities.

On the other hand, the report also highlights a range of interconnected sustainability challenges. Rates of overweight and obesity are high across both jurisdictions, agri-food systems contribute substantially to GHGs and food poverty continues to affect parts of the population. At the same time, the Iol possesses important environmental assets, including extensive peatlands that store over 53% of the Iol's carbon stock. These findings demonstrate that the food system simultaneously delivers economic, social and cultural benefits while contributing to significant environmental and public health pressures.

Evidently, the food system must transition towards becoming more sustainable. Conventional siloed approaches risk delivering interventions that improve one area whilst negatively impacting another—for example, nutrition policies that increase environmental pressures, or agricultural policies that undermine dietary equity.²⁵⁶

Researchers within the *Co-Centre for Sustainable Food Systems* are adopting a systems approach to support the transition towards healthy diets from sustainable sources (HDSS). HDSS diets are sustainable not only for population health, but also economically, environmentally and socially. Taking a food systems approach towards food system sustainability involves recognising that interventions targeting one outcome are likely to influence others whilst also generating potential synergies as well as unintended trade-offs.



The process of compiling this report identified multiple data gaps across food system activities, drivers and outcomes. In some cases, relevant data were unavailable; in others, limitations in measurement or outdated datasets reduced their applicability.

Due to differences in reporting practices, research methodologies and governance structures across the IoI, the numbers identified for each jurisdiction rarely enable like-for-like comparison. These data gaps were in concordance to the literature which states that while some outcomes, such as GHGe, are relatively well measured, other areas relating to health, nutrition, livelihoods, economies and overall well-being remain inconsistently reported.⁶⁰



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Appendix: Food Co-Centre Sustainability Compass glossary

Key word	Definition
Safe & healthy diets for all	
Food intake	The act of consuming food.
Healthy Diets	‘A healthy diet is a foundation for health, well-being, optimal growth and development. It protects against all forms of malnutrition... Evidence shows the health benefits of a diet high in whole grains, vegetables, fruit, legumes and nuts and low in salt, free sugars and fats, particularly saturated and trans fats’. ^{a1}
Nutrient intake throughout life	Nutrients (carbohydrates, fat, protein, vitamins and minerals) consumed by infants, children, adolescents, adults and older adults.
Diet-related health conditions	Physical and mental wellbeing negatively impacted by dietary intake.
Diet-related chronic disease	Long-lasting health conditions that are significantly influenced by dietary factors. For example, obesity, cardiovascular disease, type 2 diabetes and certain types of cancer. ^{a2}
Population weight status	Usually assessed using Body Mass Index (BMI) and can be categorised into underweight (<18.5kg/m ²), normal weight (18.5–24.9kg/m ²), overweight (25–29.9kg/m ²) or obese (>30kg/m ²). ^{a3}
Food safety and risk mitigation	Identifying potential safety hazards in the production, cooking or storage of food and implementing measures to reduce or eliminate the occurrence of these hazards.
Foodborne microbiological, physical and chemical contaminants	‘Foodborne illnesses are usually infectious or toxic in nature and caused by bacteria, viruses, parasites or chemical substances entering the body through contaminated food. Contamination can lead to acute poisoning or long-term diseases, such as cancer’. ^{a4}
Food integrity	‘A multidimensional concept concerning the integrity of product, process, people and data, implying the controlled status of a food product to be intact, safe, of quality and authentic in its claims, as well as sourced, processed and distributed ethically throughout a food supply chain’. ^{a5,pp 5}
Environmental sustainability claims	Sustainability claims must adhere to the Green Claims Code, ensuring claims made are substantiated, truthful and accurate. ^{a6}



Key word	Definition
Food fraud	The deliberate and intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or packaging for economic gain, often with the intention to deceive the consumer. ^{a7}
Nutrition and health claims	Nutritional claims relate to the energy (e.g., 'low energy'), fat (e.g., 'fat-free'), sugar (e.g., 'low sugar,' 'no added sugars'), fibre (e.g., 'source of fibre'), protein (e.g., 'high protein'), salt (e.g., 'low salt,' 'no added salt') and vitamins and minerals. Health claims imply or suggest that a food or component of the food benefits health. For example, a product high in vitamin C may claim 'vitamin C contributes to the normal function of the immune system'. ^{a8}
Transparency of production of products deriving from animals	Clear, transparent labelling as well as traceability where products derived from animals were produced and the methods used.
Economically thriving, robust food value chains	
Innovative and transformative businesses	Organisations that introduce new products/solutions (innovation) and/or make changes to their processes, technologies, culture and strategy (transformation).
Agri-food investment	The allocation of capital to support food system core activities (producing, processing & manufacturing, retailing & food services, consuming, managing waste & surplus food).
Knowledge and skills	Knowledge refers to retaining factual information. Skills refer to the practical abilities to apply knowledge to certain situations.
Business practices and technology	Business practices may involve increased digitisation and data-driven decision making. Technologies could include: robotics, big data analytics, drones, Artificial Intelligence and genetic editing.
Economic development	The process of improving the economic, political, and social well-being of its people by increasing quality of life.
Investment attractiveness	How appealing the company, industry or location is for investment. Based on potential profitability and a risk assessment.
Profit	Total revenue minus total cost.
Revenue	Total income generated by the sale of goods and services.
Yield	In economic terms, this means the percentage return on investments. In agriculture terms, this is the amount of crop produced per unit of land (typically measured in kilograms per hectare) or the quantity of meat or milk produced per unit area.



Key word	Definition
Value chain configuration	How people and their activities along the value chain (producing to consuming) interact.
Consumer habits	'Encompasses mental and physical activities that consumers engage in when searching for, evaluating, purchasing, and using products and services'. ^{a9}
Degree of structural reconfiguration	Refers to the extent or magnitude of change applied to the arrangement of parts, components or connections of a system to adapt to new environments or requirements. ^{a10}
Food loss and waste	'Food loss takes place on the farm and through supply chains, due to sub-optimal farming methods, poor storage and inflexible distribution or buying practices'. ^{a11}
Packaging	Refers to the materials used to wrap or protect goods, inclusive of everything from one tonne sacks, paper bags to crisp packets.
Responsible sourcing	Procurement of goods and services should be sustainable (e.g., consider the environmental impact) and ethical, respecting human rights (e.g., working conditions). ^{a12}
Competitive positioning	Competition in the food system is typically for efficiency and increased output, meaning lower consumer prices; but this can raise concerns about environmental impacts, health and equity.
Commercial risk management	The systematic process of identifying, assessing, and mitigating threats or uncertainties that can affect your organization. It involves analysing risks' likelihood and impact, developing strategies to minimize harm, and monitoring measures' effectiveness'. ^{a13}
Food self-sufficiency	'The Food Production to Supply Ratio (commonly referred to as the "Self Sufficiency Ratio"), is calculated as the farmgate value of raw food production divided by the value of raw food for human consumption and is estimated to be 62% for all food in 2023 and 75% of indigenous type food [in the UK]. ^{a14} Lack of self-sufficiency increases vulnerability to the volatility of global food markets.
Trading relationships	The economic interactions and exchanges between countries. Includes importing and exporting. The movement of goods and services across borders is determined by tariffs and trade policies.



Key word	Definition
Clean & healthy planet	
Atmosphere	A 'layer of gas and suspended solids' surrounding the Earth's surface. The extend of the atmosphere is 6,200 miles, becoming increasingly thinner further away from the Earth. ^{a15}
Air quality	'Air quality is the term we use to describe how polluted the air we breathe is. When air quality is poor, pollutants in the air may be hazardous to people, particularly those with lung or heart conditions'. ^{a16}
Greenhouse gas emissions	Greenhouse gases include: carbon dioxide, methane, nitrous oxide and water vapour. The gases act like glass greenhouse walls, keeping the Earth's temperature at an average of 14°C. ^{a17}
Water vapour	'Water vapour is the most abundant greenhouse gas. It increases as the Earth's atmosphere warms but unlike CO ₂ , which can remain in the Earth's atmosphere for centuries, water vapour persists for only a few days' ¹⁷ . Increased water vapour can lead to pathogen development in crops. ^{a18}
Biosphere	The biosphere is areas occupied by living organisms. This includes in the ocean, underground root systems, forests and land. ^{a19}
Biomass	'Biomass is organic, non-fossil material of biological origin (plants and animals)'. ^{a20} For example, standing crops.
Functional biodiversity	Within an ecosystem, the variety of biological and chemical roles/functions that organisms perform. For example, nutrient cycling, pollination, decomposition.
Genetic diversity	Within one species, the range of genetic characteristics.
Net primary productivity	'The net flux of carbon from the atmosphere into green plants per unit time'. ^{a21}
Species richness	The number of different species present in an ecosystem or specific area.
Geosphere	The geosphere is the Earth's interior and surface, all the rocks that make up the Earth. ^{a22}
Non-renewable resources	'Non-renewable energy resources include coal, natural gas, oil, and nuclear energy. Once these resources are used up, they cannot be replaced, which is a major problem for humanity as we are currently dependent on them to supply most of our energy needs'. ^{a23}
Soil carbon	'Soil carbon refers to the organic carbon found in soil, which is a critical indicator of soil health and influences various biological, chemical, and physical properties and processes. It can be affected by factors such as soil erosion, disturbance, and carbon management practices'. ^{a24}



Key word	Definition
Soil degradation	'Soil degradation is defined as a change in the soil health status resulting in a diminished capacity of the ecosystem to provide goods and services for its beneficiaries. Degraded soils have a health status such, that they do not provide the normal goods and services of the particular soil in its ecosystem'. ^{a25}
Soil erosion and deposition	Soil erosion 'refers only to absolute soil losses in terms of topsoil and nutrients. This is indeed the most visible effect of soil degradation, but does not cover all of its aspects. Soil erosion is a natural process in mountainous areas, but is often made much worse by poor management practices'. ^{a25}
Hydrosphere	All the water on Earth makes up the hydrosphere: surface water, in the ground and in the air. ^{a19} This includes freshwater and marine.
Freshwater extraction	The practice of taking water from natural freshwater sources, i.e. lakes, rivers and groundwater. The water may be removed temporarily or permanently for uses such as drinking water, industrial processes or land irrigation.
Nitrogen and phosphorous loading	'Nutrient loading refers to the increased input of nutrients, particularly nitrogen (N) and phosphorus (P), into the environment, which alters ecological dynamics and can impact the quality of resources available to organisms, including hosts and parasites. This process can influence disease dynamics by modifying host population density and nutrient content'. ^{a26}
Water quality	Characteristics to consider when assessing water quality: chemical (minerals, nutrients and pollutants), physical (clarity, cloudiness, colour) and biological (organisms such as bacteria or algae).
Water temperature	How hot or cold water is, measured in degrees Celsius °C.
Just, ethical, fair & culturally meaningful food system	
Right to food	'Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. In this regard, concerted action at all levels is required'. ^{a27}
Access	The ability to equitably access food physically, economically and socially, at an individual or household level. ^{a28}
Agency	'The capacity to make decisions regarding one's own body and the fundamental freedoms essential for establishing personal boundaries, continuity, and uniqueness in one's sense of self'. ^{a29}
Cultural appropriateness	Degree to which accessible food satisfies cultural norms.



Key word	Definition
Food culture	The wider set of beliefs and values as well as social and environmental factors that influence what, when, why and how individuals eat. 'In some cultures, fast food and meat-heavy diets are seen as a sign of wealth and status, while traditional, more nutritious and sustainable foods are viewed as a symbol of poverty. In others, high-sugar foods such as desserts are core rituals, linked to national and family identity'. ^{a30}
Food behaviour	The habits and actions related to selecting, preparing, consuming and disposing food. Food behaviour is influenced by personal factors as well as the environment, society and culture.
Food environment	The food environment mediates people's food acquisition and consumption within the wider food system. It encompasses external dimensions such as the availability, prices, vendor and product properties, and promotional information; and personal dimensions such as the accessibility, affordability, convenience and desirability of food sources and products.
Food literacy	Simply, 'the idea of proficiency in food related skills and knowledge.' However, there are multiple definitions of 'food literacy' as there are six ways to assess it: through skills and behaviours, food/health choices, culture, knowledge, emotions and food systems, ^{a32} , pp 365.
Food waste	Includes food waste generated at point of consumption, either at home or out of home. ^{a12}
Social justice	Social justice 'aims to give individuals and groups fair treatment and an impartial share of social, environmental and economic benefits'. ^{a33} The social justice movement is an effort towards advocating for equality, human rights and systematic change.
Dignified work environments	'Encompasses earned and inherent dignity; the capacity for autonomous action; the affirmation of diversity; access to decent and humane work conditions; freedom to organize and resist; and opportunities for contribution, meaningfulness, and achievement'. ^{a34}
Social externalities	The end consumer is typically unaware of these social "hidden costs" that occur during the food system activities (i.e. production to consumption) as they often occur outside of Ireland and are not factored into the end consumer price. For example: cost of underpayment, cost of child and forced labour, the cost of discrimination and harassment and the cost of variable food prices.



Key word	Definition
Environmental justice	Environmental justice is the distribution of environmental benefits and the burdens groups of people experience. Environmental benefits include landscape improvements, 'attractive and extensive greenspace, clean air and water,' and investment in reducing or eliminating pollution. ^{a33} Environmental burdens include risks and hazards stemming from poorly managed food system activities. This includes contaminating pollution from industrial and transport-generated activities.
Environmental externalities	The end consumer is typically unaware of these environmental "hidden costs" that occur during the food system activities (i.e. production to consumption) as they occur elsewhere and are not factored into the end consumer price. For example: cost of air pollution, cost of water pollution, cost of soil pollution and cost of soil depletion. Environmental externalities may occur within Ireland as well as outside the jurisdiction.
Recognition of nature's contribution to human wellbeing	Nature's contribution can be known as 'ecosystem services,' including pollination, carbon sequestration and water filtration provided by healthy ecosystems. Humans benefit from ecosystems in a tangible (food, fresh water, climate regulation) and intangible way (e.g., the impact of green spaces on stress levels and the ability to do physical exercise outside, use an allotment etc.).
Animal welfare	Owners and keepers of animals have a duty of care to ensure needs are met: for a suitable environment and place to live; for a suitable diet; to exhibit normal behaviour patterns; to be housed with, or apart from other animals (if applicable); to be protected from pain, injury, suffering and disease. ^{a35}
Treatment during production, transport and slaughter	There are five domains to consider for animal welfare during production, transport and slaughter: nutrition, environment; health; behaviour; mental state. ^{a36}

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